

**School of Media, Creative Arts and Social Inquiry  
Faculty of Humanities**

**Investigating the Causes of War and the Conditions of Peace:  
Measuring Military Power and  
Testing Structural Realism in the South China Sea**

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**This thesis is presented for the Degree of  
Doctor of Philosophy  
of  
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## **Declaration**

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made. This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

## **Human Ethics**

The research presented and reported in this thesis was conducted in accordance with the National Health and Medical Research Council National Statement on Ethical Conduct in Human Research (2007) – updated March 2014. The proposed research study received human research ethics approval from the Curtin University Human Research Ethics Committee (EC00262), Approval Number # HRE2017-0016

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## **Abstract**

This dissertation investigates three key security studies questions relating to the causes of war and the conditions of peace. These are *if* nations are generally primed to initiate military aggression, or whether they seek to avoid conflict; *how* tendencies for strong aggression or peaceable cooperation can be identified in individual countries; and, for states inclined to violence, *when* they are most likely to attack – in terms of what conditions support commencing wars.

These questions are significant as their answers have clear policy and scholarly value. For instance, should nations mostly view each other with fear and suspicion, arming themselves accordingly – or even attacking first; or can they be more sanguine? Regardless, can inherently peaceable and aggressive states be identified, allowing some nations to cooperate more freely, or prepare to deter conflict? And what conditions identify periods of increased danger for the international community, and can they be avoided?

Addressing these questions is essentially an issue of theory testing, noting theories are simplified models of reality that propose potential resolutions. This dissertation empirically assesses five Structural Realist constructs that offer competing answers: Defensive Realism (in a Gains Sensitive variant and a novel Gains Less-Sensitive variant), Offensive Realism, Power Transition Theory, and Balance of Power Theory. Structural Realist theories were selected for various reasons, including that they are the most broadly used schools of thought on security issues in International Relations, hence their testing has the potential for wide scholarly and policy impact.

The testing is conducted using a mixed focussed comparison (qualitative) and statistical-correlative (quantitative) methodology. Specifically, for each theory broad predictions are developed for state behaviour in territorial disputes (in terms of preferences for cooperative and coercive strategies) as effected by the balance of military power. An original means of measuring such power is also developed.

Then, the predictions are compared to the historical record of the actions of six states at 15 disputed locations in the South China Sea between 1995–2015. The resulting 1,371 annual observations, informed by an equal number of relevant military power assessments, support identifying which model's predictions occur more frequently – that is, which is more correct.

The results indicate that Defensive Realism in general has superior performance – in particular, although with less confidence, Defensive Realism operating under the Balance of Power model. In answer to the research questions, this shows that states avoid seeking to initiate conflict; that nations' motivations affect their behaviour and can be identified by considering their preferences for strategies when pursuing foreign policy goals; and that imbalances of power enable conflict. These findings have a range of significant impacts, such as, respectively, showing that nations should generally be open to international cooperation, that dangerous states can be more clearly identified and hence the risks they pose managed, and that arms control measures should be an effective means of decreasing risks of war.

Importantly, the dissertation also represents a particularly strong test of the various theories. This reflects factors including that it represents the largest dataset test of Structural Realism so far attempted using a mixed focussed comparison and statistical-correlative methodology, and that it uses carefully defined terms and measures, including for strategy and military power. As a result, the answers it contains to the research questions, and the associated policy recommendations, are arguably amongst the most compelling out of thousands of similar efforts to date.

Finally, the dissertation also makes several novel scholarly contributions suited to supporting wider research. These include conceptual developments, such as means to develop theory-specific predictions for state behaviour (an approach typically treated as infeasible), and new definitions and methods to organise strategies and measure military power; practical tools in terms of organised frameworks of strategies and associated systematic predictions for state behaviour; and a new dataset of military power for the South China Sea spanning 1995–2015.

### **Acknowledgements and Dedication**

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I also dedicate this thesis to the memory of my late grandfather, Professor Dr. Hab. Kazimierz Czechowicz, one of the finest human beings I have ever had the privilege to know. I hope this work would have made you proud.

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## **List of Abbreviations**

AA – Amphibious Assault

AAD – Actions and Assessments Database

AAM – Air-to-Air Missile

AO – Area of Operations

ASCM – Anti-Ship Cruise Missile

ASEAN – Association of Southeast Asian Nations

ASEAN – Southeast Asian Nations

ASuW – Anti-Surface Warfare

ASW – Anti-Submarine Warfare

ASW – Anti-Submarine Warfare

BOP – Balance of Power theory

CAR – Conceptual Application and Requirements

CINC – Composite Index of National Capabilities

CoG – Centre of Gravity

CR – Construction Resources

CSIS – Center for Strategic and International Studies

DR – Defensive Realism

DR(GLS) – Defensive Realism (Gains Less-Sensitive)

DR(GS) – Defensive Realism (Gains Sensitive)

DR(GS)BOP – Defensive Realism (Gains Sensitive) Balance of Power Theory

DR(GS)PTT – Defensive Realism (Gains Sensitive) Power Transition Theory

EEZ – Exclusive Economic Zone

EMEZ – Enduring Maritime Exclusion Zone

FAC – Fast Attack Craft

FGA – Fighter-Ground Attack

GDP – Gross Domestic Product

GLS – Gains Less-Sensitive

GS – Gains Sensitive

IOC – Initial Operational Capability

IR – International Relations, discipline of

MARPAT – Maritime Patrol Aircraft

MEZ – Maritime Exclusion Zone

MPA – Military Power Assessment

MPD – Military Power Dataset

MSC – Major Surface Combatant

NDU – National Defense University

NeA – Net Assessment

ODB – Offence Defence Balance

OR – Offensive Realism

OR(BOP) – Offensive Realism (Balance of Power Theory)

OR(PTT) – Offensive Realism (Power Transition Theory)

ORBAT – Order of Battle

PAF – Philippine Air Force

PCA – Permanent Court of Arbitration of the United Nations

PLAN – People’s Liberation Army Navy

PLANAF – People’s Liberation Army Navy Air Force

PN – Philippine Navy

PTT – Power Transition Theory

RBN – Royal Bruneian Navy

RMAF – Royal Malaysian Air Force

RMN – Royal Malaysian Navy

ROCAF – Republic of China Air Force

ROCN – Republic of China Navy

SAM – Surface-to-Air Missile

SC – Sea Control

SCS – South China Sea

SD – Sea Denial

SIPRI – Stockholm International Peace Research Institute

SR – Structural Realism

SSF – South Sea Fleet

SWS – Sensor and Weapons Summary

TAD – Theory Analysis Document

TS – Territorial Sea

UN – United Nations

UNCLOS – United Nations Convention on the Law of the Sea

US – United States

USN –United States Navy

VPAF – Vietnamese Air Force

VPN – Vietnamese People’s Navy

## **Guide to Headings**

This dissertation is organised into chapters and annexes, sections, and subheadings. These use the styles shown below.

### **Chapter and Annex Heading**

#### **Section Heading**

##### **Subheading Level One**

##### **Subheading level Two**

##### **Subheading level Three**

##### *Subheading level Four*

##### *Subheading level Five*

## Chapter One – Introduction and Overview

Understanding the causes of inter-state war and the conditions of peace remain core concerns of the disciplines of International Relations (IR) in general and Security Studies<sup>1</sup> in particular. This reflects the importance of these issues: across the world, conflicts affect millions of lives, consume enormous sums invested in armed forces, and have decisive impacts on the very survival of states.

Research on these topics is most usefully focussed through considering key questions or issues, and this dissertation centres on three for which particular policy and scholarly value can be proposed. These are the matters of *if* nations are generally primed to initiate military aggression, or whether they instead seek to avoid conflict; *how* tendencies for strong aggression or peaceable cooperation can be identified in individual countries; and, for states inclined to violence, *when* they are most likely to attack – in terms of what conditions support commencing wars.<sup>2</sup>

Answers to such queries have clear policy and scholarly value. For example, should nations view each other with fear and suspicion, arming themselves accordingly – or even attacking first; or can they be more sanguine? Regardless, can inherently peaceable and aggressive states be identified, allowing some nations to cooperate more freely, or prepare to deter conflict? And what conditions identify periods of increased danger for the international community, and can they be avoided?

To address these questions is inherently an issue of theory. Theories are simplified mental constructs or models of reality that seek to explain and predict outcomes in spheres such as IR. As such, they can precisely address such queries as *if*, *how*, and *when*. Further, as theories potentially have global applicability, a particular model's answers may prove useable by states and scholars universally – providing a vital mechanism for controlling conflict.

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<sup>1</sup> Which focuses on the threat, use, and control of military power, including in war (Walt, 1991).

<sup>2</sup> The form “if, how, and when” was preferred to “whether, how, and when” as, in the author's opinion, it supports the easier conceptualisation of the differing nature of the research questions.

Unfortunately, despite this promise, there are a great diversity of IR theories that provide mutually exclusive answers to the questions and much debate remains on which are more correct. As this hinders scholars' and governments' abilities to address the causes of violence, it is vital to understand which theories have the most explanatory power – that is, which ones explain more about the real world.<sup>3</sup>

In turn then, to answer *if*, *how*, and *when* is ultimately a question of theory testing<sup>4</sup> – to see which are most correct. While testing can be done in various ways, it can most strongly be achieved by empirical tests – that is, seeing which theories' predictions are more congruent with reality. This involves developing for theories differentiable predictions aligned with the research questions and then comparing these to a dataset. The theories that perform better have greater explanatory power and can be retained, while those that perform more poorly can be set aside.

This dissertation applies just such an approach to investigate the questions of *if*, *how*, and *when* through testing the paradigm of Realism and in particular Structural Realism (SR), the main Realist school since the 1980s (Labs, 1997). Realism has particular value including because it is directly focussed on issues of peace and war (so it is directly applicable to the queries); it is widely used (so assessing it has broad scholarly and policy impact); and it has many branches with notionally competing predictions for the questions (allowing robust testing).

Yet despite this promise, a range of issues centred on Realism (and SR's) predictive indeterminacy have frustrated thousands of previous efforts to achieve conclusive answers to the research questions. Specifically, Realism suffers from three major causes of indeterminacy: uncertain forecasts, making it unclear whether outcomes will be observed at all; overlapping predictions, meaning the same actions can support competing branches; and poorly defined terms, allowing the same data to be variously interpreted to buttress theories predicting differing things.

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<sup>3</sup> For a discussion of the nuances of explanatory power see Van Evera (1997).

<sup>4</sup> An alternative of course is theory building; however, noting the great diversity of existing contributions the value of adding yet another seems minor.

While these matters affect the research questions in varying ways and to different degrees, a selection of illustrative outcomes include:

- Regarding *if*, various Realist branches have different expectations on whether nations should be inclined to violence and hence if war<sup>5</sup> should be common or rare. But all still expect some (unclear) quantity of conflict to occur (predictions overlap), and do not forecast if it will arise in particular instances (predictions are uncertain). As a result, both the absence and presence of violence equally supports the various models – there is no “quantity” that proves one correct.
- For *how*, little detailed work has been conducted to describe how differently motivated nations should behave, and there are doubts as to whether SR can even address this issue (undefined terms). And the majority of efforts have been ad hoc (i.e., without a structured basis for why behaviours were proposed) and focussed on militarised activities often used in crises. This increases the contestability of motivation-specific behaviours and also limits the potential to identify motives outside of dangerous periods where nations may already be behaving abnormally – an outcome that, if achievable, would be of key benefit.
- On *when*, Realism is especially compromised by its treatment of nations’ military power, which the theory holds as a key predictive factor for explaining war (undefined terms). Realism fails to describe how this can be measured; and the means that are used bear little connection to how armed force is exerted: victory in battle via military operations. Indeed, gauges of military power remain under-elaborated and inaccurate, with their predictions of battle success performing “little better than a coin toss” (Biddle, 2004, p. 21). Thus, previous efforts to assess Realism have been frustrated by poor metrics for a key concept. Further, most Realist models consider that as power disparities increase, so does the likelihood of aggression. So here too, predictions overlap.

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<sup>5</sup> War (in the sense of all-out state-on-state conflict) and major military aggression (such as raids or seizures of areas of territory) are treated largely interchangeably in this dissertation. This is due to the potential of, at the very least, the latter to lead to the former.

## **Conducting a Novel, Broad and Strong Test: Harnessing State Strategy Choices**

This dissertation seeks to address these issues and achieve a potential breakthrough to the impasse on answering the key questions under SR. It does so by conducting a novel, broadly applicable and strong test of various theories' predictions – which of course becomes a test of the models themselves to a degree.<sup>6</sup> By novel is meant an analysis that approaches the key queries from a new conceptual direction, seeking to circumvent the lack of compelling results from previous approaches. Using a broadly applicable method (one suitable to many problems and data sources) will maximise the wider scholarly utility of the work done. And by a strong test is meant one that provides higher certainty that a particular theory or theories are correct, an outcome that is achieved principally via reducing indeterminacy (Van Evera, 1997). Such a test has clear normative benefits (if results are to be useful, they should evoke confidence) and as outcomes generated here will be one set among many, it is desirable to have a basis upon which they might be preferred as a basis to assess explanatory power.

Further to an extensive review of existing approaches, the method selected to meet these aims was to conduct a mixed focussed comparison and statistical-correlative test of SR by analysing patterns of State strategy choices in territorial disputes. This would be done using the assessment of large bespoke datasets, and be supported by clearly defined terms, including an operationally focussed definition and measure of military power.

While this methodology is discussed in more detail below, in summary it involves testing five SR or SR-compatible branches that logically generate broadly different answers for the key questions.<sup>7</sup> These are Defensive Realism (DR), split into a classical Gains Sensitive (GS) variant and a novel Gains Less-Sensitive (GLS) variant (hereafter DR(GS) and DR(GLS)); Offensive Realism (OR); and Balance of Power

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<sup>6</sup> That is, as theory predictions inherently are the outcomes of models themselves, the testing of predictions and theories is inextricably linked: assessing one illuminates the other.

<sup>7</sup> As represented in [Table 1.0](#) in Section II of this chapter.



theory (BOP) and Power Transition Theory (PTT). As these models address different elements of the questions in different ways, they are combined to form the five constructs under test: DR(GS)BOP, DR(GS)PTT, DR(GLS), OR(BOP), and OR(PTT).

These theories are tested by developing detailed strategy (i.e., behavioural<sup>8</sup>) preferences that states motivated by each model<sup>9</sup> should favour as they sought to resolve territorial disputes, as moderated by the balance of operational military power. Of note, each set of preferences spans militarised and non-militarised strategies, and incorporates the theories' respective answers for *if, how, and when*. Further, a specific definition of, and process for assessing, operational military power is used. By then testing for these preferences in a large dataset of State behaviours as balances of power shift, then the more that any theory's predictions are present, the greater its explanatory power for the research questions. This reflects, simply put, that more of the world is congruent with its forecasts.

### **Key Benefits of Theory Testing via State Strategy Choices**

While the above proposal may seem straightforward, it in fact contains a range of measures that support the objective of a novel, broadly applicable and strong test. While these are discussed in more detail below, perhaps the most important innovation is the testing of SR via detailed patterns of State strategy choices.

This approach is new as it has classically been considered infeasible. In short, SR accepts that in some instances states' inherent motivations may determine their behaviour, allowing for the assessment of *how* in individual occurrences. However, under SR, the forces of the international system are also considered to generally (but not always) overwhelm inherent motivations; in effect such forces serve as "structurally imposed" drivers for states' behaviour – hence the name of the school. Yet key SR authors have proposed that the approach cannot predict, or only poorly, what structurally driven behaviours will arise. In particular, DR's creator, Kenneth

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<sup>8</sup> Behaviours and strategies are used essentially synonymously; for a discussion see Chapter Three.

<sup>9</sup> In the sense of having policy guided by the simplified world model described by the theory.

Waltz, stated that his theory cannot predict behaviours at all and especially at any level of detail (1979), and OR's founder, John Mearsheimer, proposed that states are driven primarily, but far from exclusively, towards hostile behaviours (2014). As a result, neither theory is notionally testable via states' strategies, as it is unclear when any behaviours should be linked with DR (which abstains predictions) instead of with OR (which accepts very diverse activities). And perhaps due to this, efforts to clearly define and test theory-associated activities for DR and OR have also been rare (although coarser efforts have been made) as the task may appear fruitless.

However, as argued in Chapters Two and Three, if strategies are organised into a framework of increasingly cooperative and coercive behaviours, structurally driven and differentiable general preferences for these emerge logically for DR(GLS), DR(GS) (which aligns with Waltz's DR) and OR-driven states. In summary, the theories respectively generate preferences for increasingly (and ideally highly) cooperative strategies that avoid war (describing "Peaceful" states); mid-range coercive and cooperative strategies that shun high levels of either, with war an unfavoured but potential option (describing "Opportunistic" or "Status Quo" nations); and increasingly (and ideally highly) coercive strategies where war is overtly favoured ("Revisionist" states). Nations motivated by the theories are hereafter described as having the relevant "state-type", such as being a DR(GS) or Opportunistic state, an OR state, and so on.

In turn, when these general differences are projected against a detailed continuum of exemplar behaviours, they resolve into testable differences in terms of *scope* (what ranges of strategies states should prefer) and *direction* (whether and to what degree nations should prefer increasingly coercive or cooperative strategies). These two elements hence provide complementary means to practically identify state-types based on theory-distinctive elements of their preferred scope (e.g., strategies that only, say, OR motivated states should use), or, when scopes overlap, by examining their direction.

When such preferences are joined to an operational measure of military power, the previous conceptual weakness of SR to address *how* instead becomes a strength enabling new and improved avenues to answer all the key questions. For example:

- For *if*, problems with overlapping and uncertain predictions for conflict are circumvented, as quantities of peace and war are now assessable by considering wider patterns of DR(GS), DR(GLS) and OR behaviour. So, when nations initiated wars, which states had wider strategies indicating they always intended aggression, or showed that conflict was their last resort as non-violent countries? And likewise, for times of peace. Such analysis indicates the prevalence of state-types, and thus whether countries in general are primed for aggression.
- For *how*, a detailed set of strategies that encompasses peaceful and militarised behaviours both addresses undefined terms and enables identifying nations' state-types outside of times of conflict. And this can be applied both to structurally or inherently motivated nations. Indeed, the structural forecasts developed are based on those defined for individually motivated nations by a group of SR theorists known as Motivational Realists (discussed in Chapter Two).
- For *when*, an operationally focussed measure of military power allows the relationship between armed force and initiating aggression to be tested with more confidence. Further, states can logically be expected to engage in dangerous but sub-war behaviours to try and threaten or bluff their target into compliance when they assess they are at an opportune moment for victory – if the threat fails, they are likely to win the war in any case. Hence identifying such behaviours allows tests of *when* even should no violence occur.

Further, in addition to providing a novel way to assess theories, another key benefit of the strategy testing method is that meets the requirements for a broadly applicable approach. If diverse but carefully defined strategy preferences are

developed, these, or situation-specific variants of them, should be applicable to testing Realism in various situations.

Finally, while, as discussed further below, there are no set criteria for what defines a strong test, the approach here already addresses a variety of methods proposed in the scholarly literature, such as testing conceptually similar models that generate differentiable predictions. Also, a range of additional strong testing measures are harnessed by the way the test is conducted, including in terms of the selected information source (large bespoke datasets) and case selection (territorial disputes).

For example, by focussing the theories on territorial disputes, their predictions become more certain (i.e., likely to be observed) as territory is a key Realist focus. Further, by being such a vital matter for states, territorial disputes generate very different detailed forecasts for nations' behaviours under the theories – meaning predictions overlap less. Also, using large bespoke datasets that encompass many years allow for repeated testing, reducing the impact of outliers, and provide greater confidence in the quality of data. Finally, the conceptual scope provided by the dissertation allows various key terms to be defined carefully and sensitively.

### **Broader Original Contributions and Benefits**

Further to the above, there are grounds for confidence that a novel, broadly applicable and strong test can be conducted to attempt a breakthrough to conclusively answer the research questions. This is an outcome that would bring a range of policy and scholarly benefits.

Yet even should the results not prove conclusive (noting that thousand of efforts have failed to be), the approach used here provides a range of original contributions to the scholarly literature. As an initial point, the methodology used (i.e., to harness patterns of state strategy choices to conduct generalisable theory testing) is rare in itself, as only one other work appears to have attempted to do so, and in a more

limited fashion (see the reference to Kim (2016) in Chapter Two). And the analysis here is by far the largest and most detailed study of state behaviour to test SR.

In addition, the process of conducting the test required some 20 original conceptual and practical developments that themselves provide further substantive and *structured* contributions to the IR discipline. Of note, and discussed in more detail in Chapter Two, structured works (i.e., those that provide systematic or formalised guidelines for how assessment was conducted) represent a best practice approach to IR as they support clarity of method and common and repeatable analysis (Liff, 2016). While the various contributions are developed throughout the dissertation, and also summarised in its concluding Chapter Eight, key highlights include the:

- Demonstration of structurally driven differentiable general strategy preferences for DR(GLS), DR(GS) and OR states, in terms of favouring increasingly (ideally highly) cooperative, mid-range, and increasingly (ideally highly) coercive behaviours respectively.
- Development of a new, principles-based, structured continuum of increasingly cooperative and coercive behaviours, including defining highly cooperative, mid-range and highly coercive strategies.
- Use of the continuum to generate detailed systematic predictions (a rarity in the literature) for scope and direction for the preferred strategies the five models forecast for nations pursuing various goals in general, and in territorial disputes in particular, as military balances of power change.
- Creation of a formalised model for gauging changes in the operational balance of military power, and rules for applying this model to assess military forces' potential for battle success in the maritime missions of Amphibious Assault (AA), Maritime Exclusion Zone (MEZ) enforcement, and Sea Denial (SD).

- Development of a systematic process for identifying state behaviours as being part of territory-relevant strategies, together with a mechanism to define how even complex permutations of action and reaction, across differing disputes sites and balances of power, can be assessed in repeatable ways. This supports the consistent identification of nations' strategies, and hence state-types.
- Application of these research measures to a region (the South China Sea (SCS)) where power has been fluctuating and a competition for territory occurring. This produced two bespoke datasets (one entirely new) of operational military power and state behaviour assessments. Both are the largest publicly available resources of their type to the author's knowledge and comprise together some 500,000 cells of information. These datasets enabled historical power changes and actual state behaviours to be compared to the theories' predictions – allowing an assessment of their explanatory power.

All these measures – including the theory developments, strategy predictions, the principles-based framework, and various datasets of measured military power and more – are original, useable independently of their harnessing here for theory assessment, and available as an enduring resource for the scholarly community. Based on the above factors, the approach used here represents, to the best of the author's knowledge, one of the most novel, creatively broad, and rigorous attempts to assess Realism in general and to answer the research questions in particular.

While the above process is conducted in detail in the rest of this dissertation, the remainder of Chapter One proceeds in three parts. These comprise, firstly, a broad discussion of theory's role in IR and measures and issues in theory assessment. The second discusses in more detail the dissertation's approach to addressing the research questions, including why Realism was selected and key means used to address problems with theory testing. Finally, an overview is provided of the remainder of the dissertation via a chapter precis that summarises key points (including the assessed superiority of DR and associated answers to *if, how, and when*) and also discusses where topics are addressed in-depth.

## **Section I: The Importance of Theory in International Relations**

Before examining Realism in detail, it is worthwhile to define what is meant by theory; discuss its importance to the research questions, IR scholarship and policy; and to address issues with theory testing. This also assists in framing the dissertation's research approach, highlighting its significance and helping to explain the basis of the detailed methodology described in Section II.

### **What Are Theories and Why Are They Important?**

Theories are simplified conceptual models of reality that explain and predict how the world operates in particular domains or spheres of interest. Theories are vital to supporting humanity's understanding of the world (i.e., ontology), and for teaching (i.e., pedagogy), as for almost every sphere of interest there are innumerable factors of little relevance to it. So, by simplification, theories make the world more comprehensible and our understanding and teaching of it more correct – in the sense of these aligning with observed reality. For example, a theory explaining why plants grow might focus much on sunlight, water and nutrients but little on fish (Van Evera, 1997). And by doing so, the theory makes the matter of interest – plant growth – much more easily comprehensible, teachable and observably correct.

Theories are comprised of a range of key concepts that are proposed by the creator of the theory as being the vital issues necessary to understand a particular field. These key concepts are traditionally separated into factors and hypotheses, with factors in turn split into assumptions and variables. Assumptions are the underlying matters that define the nature of a theory's sphere of interest, such as IR, and thus provide the foundation upon which the rest of the theory is built. Assumptions are inherently propositional and frequently capture concepts that are immeasurable or unobservable. For example, in many IR theories a key assumption is that states operate under feelings of insecurity – and this is a matter that cannot be directly observed (Mearsheimer & Walt, 2013).

In turn, variables are the factors (e.g., A, B, C) that fluctuate (i.e., vary), operate and interact with each other and the assumptions to generate, and represent, the outcomes predicted by the theory. So, referring again to plants, variable A (length of sunlight) may interact with B (quantity of soil nutrients) to produce C (different levels of plant growth).

Hypotheses provide the causal logic, the “because”, that describes how and why the factors, and relationships between them, produce the real-world outcomes a theory aims to explain.<sup>10</sup> To use the previous example, a hypothesis explains that A interacts with B *because* of X (e.g., that plants use the energy in sunlight and nutrients to grow) to produce C. Via this causal logic, hypotheses give theories their predictive power: if A leads to C because of X, then logically, if A occurs C should later be observed. Hypotheses too can capture concepts that are immeasurable or unobservable, such as (in IR) state actions being motivated by a desire for power.

Theories will often have a primary hypothesis, which seeks to explain some overarching phenomena, and then a range of subordinate ones that address specific areas of interest (Van Evera, 1997, pp. 11–12). Importantly, it is possible to logically infer from a theory any number of predictions, or new hypotheses and associated predictions, which represent outcomes that should be observed if the overarching theory is correct (Waltz, 1979, pp. 13–14, 124).

For hypotheses and predictions, these can be deterministic (if A then always B) or probabilistic (if A then sometimes B). For the latter, theories may make specific predictions (e.g., B should occur 70% of the time) or be indeterminate and leave B’s prevalence to be determined by observation. When probabilities are unstated, theories still often make broad assertions about how likely outcomes are. So, if they hypothesise a strong causal relationship, they may state B is highly likely to be observed, or may avoid even this if the causal relationship is weak.

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<sup>10</sup> This definition, where “hypothesis” describes the “fact of” interactions between variables, the reasons why these occur, and how they generate outcomes, is one of several possible uses of the term. For a discussion see Van Evera (1997, pp. 8–9).



Also, hypotheses and predictions vary from the general explanatory sort, stating that if certain conditions exist then a particular outcome generally results, through to describing how variables change (covary) in relation to each other (Van Evera, 1997, pp. 8–32).<sup>11</sup> In covarying predictions there too may be strong or weak causal relationships, with suitably nuanced predictions, and key factors are normally described as independent and dependent variables, where changes in the former drive results in the latter (Van Evera, 1997, pp. 8–11).

### **Defining Good Theories and Understanding Their Impact**

It is via their factors and hypotheses that theories gain broad explanatory and predictive power: they specify how a sphere is defined, nominate its key operative factors, and describe the causal relationships that govern how these interact. So, as long as their conditions and hypotheses hold true, they are able to explain any number of occurrences across space and time. In turn, good theories are those that have more explanatory power, defined in terms of having more congruence between their predictions and observed reality across an increasing number of important matters (Van Evera, 1997). This reflects that by better explaining and predicting reality, such models inherently better fulfil the very purpose of theories. And the best or most useful theories can be considered as those that successfully explain many important questions across the widest fields (Van Evera, 1997).

It is also through this explanatory power that theories also gain their IR policy and scholarly impact. By defining what is important, and how to explain, predict and affect the activities of states in the international system, theories provide *the* underlying means to craft, implement and assess policy. That is, nations that view the world through a particular theoretical lens will likely use that mechanism to

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<sup>11</sup> Even a general explanatory prediction could be classed as covariation, as it predicts that as long as certain initial conditions are in place, a particular outcome will occur – so, the result covaries with the presence of the conditions. But to emphasise the dynamic nature of most covarying predictions, in this dissertation explanatory and covarying predictions are held separately.

guide their behaviour, and in turn this allows their actions to be explained and predicted. For example, Realism generally considers domestic politics to have little influence on whether wars occur, with this instead explained by balances of power. Liberal theories take the opposite approach. Thus, whether a state has (or should choose) a Realist or Liberalist understanding affects whether it does (or should) treat a weapons build-up by another nation as alarming and a preamble to war, or potentially largely benign. Separately, the sheer diversity of IR in particular makes theories especially necessary for scholars to make sense of it and to be able to teach it effectively (Mearsheimer & Walt, 2013; Waltz, 1979, pp. 16-17).

Finally, more parsimonious (i.e., simpler) theories are generally considered superior, with this entailing having fewer assumptions and factors while retaining the most explanatory power. Parsimonious approaches best serve the purpose of theories writ large: to make the world more comprehensible via judicious simplification.<sup>12</sup> In reality, all theories strike a balance between parsimony and explanatory power. A complex theory may illuminate more but be convoluted and have complex causal relationships (Waltz, 1979, pp. 1–20; Wivel, 2005). And a parsimonious theory may be more inaccurate due to paring-away factors that, in some situations, will have a significant impact (Mearsheimer, 2014, p. 11).

### **The Importance of Theories to Addressing the Research Questions**

The above description of theories helps explain their vital importance to the research questions, as they are fundamentally of a type that embodies theories. After all, to answer the question of *if* states are expected to be hostile requires some description of the world that nations operate in (i.e., key factors), and a conception (hypothesis) for why countries should generally act aggressively or not. Likewise, for *how* aggressive and peaceful states can be identified, this requires a description of the behaviours they can engage in (key factors, again), and a hypothesis as to how their motivations manifest against these. And finally, for *when*

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<sup>12</sup> As put by Waltz, parsimony's value is its support of clarity and economy in concepts (1979, p. 115).

conflict should erupt, to address this issue needs, again, an explanation of what key factors affect when aggression occurs, and a hypothesis that explains why nations choose to pursue violence should these conditions be realised.

Because of the inherently theoretical nature of the research questions, answering them requires the identification of models that posit suitable answers and, to the extent there may be multiple competing theories, testing them to see which are more correct. And as is discussed in the following section, there are a great many models to choose from – as well as substantial issues to address that hinder testing. Also, when selecting theories to test, the greatest benefit can be realised by choosing those that offer the widest applicability and are the most parsimonious.

### **Causes of Theory Diversity and Issues with Theory Testing**

To address the research questions requires selecting appropriate theories. But doing so is no small task considering that for almost any domain there are many competing models claiming to explain its operation. This reflects that for observed phenomena there are often various mutually plausible explanations. Yet when choosing theories to test, there is clear value in selecting those that have already shown a tendency to better explain and predict outcomes – these would appear to have better potential to address the research questions.<sup>13</sup>

And indeed, a means of selecting prospective theories and testing them effectively is both desirable and notionally achievable under a Positivist approach – which is hence the avenue taken here. Positivism is the concept that determining objective truths about reality has inherent virtue and can be achieved through the experimental (i.e., empirical) comparison of predictions to observable data (Kurki & Wight, 2007). The greater the congruence (i.e., correlation) between prediction and outcome, the stronger the model. Theory assessments under Positivism are further enabled by the concept that such ‘observational testing’ is broadly held to be

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<sup>13</sup> And of course since theories aim to explain and predict reality, selecting those which indeed do so has a clear normative value.

generalisable,<sup>14</sup> – that is, the outcomes of particular tests are able to be extrapolated to theories' wider validity on the same topics in other situations. This allows the results of one study to potentially have global applicability.

Noting the Positivist history of IR in particular,<sup>15</sup> and of course the enormous diversity of potential data in the world, it might be expected that a robust body of correct, well-tested theory exists, notably on issues of such key human interest as conflict. These would provide an excellent basis upon which to select theories for further testing. Such a presumption is unfortunately incorrect. Despite exhaustive observational research, a great diversity remains.

This reflects, firstly,<sup>16</sup> that there is a great potential for the frustration of observational tests should any theory (or effort to appraise them) contain the elements of indeterminacy. Indeterminacy is the notion that for observational tests to be conducted, and ideally conducted strongly,<sup>17</sup> the theories under assessment must make increasingly determinate predictions. These are forecasts with rising degrees of certainty (how unequivocally outcomes are expected to be visible) and uniqueness (their forecasts are not made by other theories) (Van Evera, 1997, p. 31).

While any theory's uniqueness and certainty of forecasts will be matters of degree, overall, the more certain and unique the prediction, the stronger the test. In turn, indeterminacy is where theories' predictions are so unclear and unspecific that it is difficult to determine whether the models are correct at all, let alone which has more explanatory power.

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<sup>14</sup> But the *degree* to which test results are generalisable is often debated. For reviews see Tsang (2014) and Lucas (2003).

<sup>15</sup> For a view of Positivism's central but not unchallenged role in IR, see Kurki and Wight (2007).

<sup>16</sup> In addition to the foundational issues of indeterminacy discussed here, various practical matters also affect testing, such as misspecified models and measures, and poor research design and data quality (Mearsheimer & Walt, 2013; Vasquez, 1998). The first two matters mainly effect quantitative analyses of the type not used here, while research design and data quality are discussed below.

<sup>17</sup> Defined as those tests which provide more information with higher certainty about whether a theory is correct, and are thus preferred by positivism (Van Evera, 1997, pp. 30–31, 75–77).

As discussed by Van Evera (1997) and Liff (2016), indeterminacy can principally occur for three reasons. Firstly, due to uncertain predictions. This occurs when theories generate no or very vague expectations about the prevalence or specific nature of predicted outcomes; thus, their presence or absence is difficult to identify or correlate to explanatory power. This is compounded if a theory does not specify time horizons – that is, the period of time within which outcomes should be observed. Of course, theories may be tested by observing which predictions occur over time, with the longer the period the greater the confidence. But without horizons, if a prediction is not seen it can always be argued that it is simply necessary to wait longer. Further, theories that allow for undefined numbers of “anomalous” behaviours become almost impossible to incorrect or “falsify”.<sup>18</sup> Secondly, when theories develop predictions that are not unique, even if reached through different causal logics, then observing a prediction supports multiple theories and proving superior explanatory power may be almost impossible (Van Evera, 1997, pp. 17–32). Finally, indeterminacy can be caused by disputed<sup>19</sup> or poorly defined terms (such as concepts or test variables), which may result in the same outcome being argued to simultaneously support dissimilar theories that predict differing outcomes, or the results of any testing simply having dubious validity (Liff, 2016).

Testing is further hampered where overlapping predictions exist based on differences in unobservable factors and hypotheses, and yet more so in complicated fields with complex theories. That is, even when models are based on dissimilar factors and hypotheses, if different invisible factors predict the same outcome, how does the event’s occurrence prove one or the other? And assessing explanatory power is even more difficult in complex fields with a great diversity of logically feasible factors and hypotheses. This is because such fields can spawn an equally diverse array of plausible theories that are themselves complex – that is, they draw

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<sup>18</sup> A concept where a certain type of evidence will prove a theory false, with this type of testing called falsification (Van Evera, 1997).

<sup>19</sup> Notably, even when terms are well defined, in many instances authors simply prefer different variants, leading to different results (Mearsheimer & Walt, 2009; Vasquez, 1998). This issue appears essentially irresolvable, aside from the construction of particularly persuasive definitions.

on the various factors and hypotheses to propose multiple reasonable and interlinked explanations of events. In such situations, again, how does the occurrence (or not) of a prediction prove which elements of a theory (or many theories), and why?

Finally, even with tests being generalisable, their results only apply to a theory's explanatory power on the specific criteria that they aimed to address, noting that theories can seek to explain many phenomena and diverse hypotheses and predictions can be developed. Due to the potential for various factors to impact on a theory's operation, the fact that it fails tests in one area does not allow this to be extrapolated to its performance in others (Van Evera, 1997; Waltz, 1979). And while a theory that fails many tests may lose credibility, particularly, as noted by Vasquez (1997), if it disappoints in its claimed core areas of competency, even so it may still explain occasional and important phenomena very well (Van Evera, 1997, p. 39).

### **Issues with Theory Diversity and Testing in International Relations and Realism**

It is precisely the above issues that have led to the great diversity of theories in IR. This reflects firstly that the discipline "deals with the largest and most complicated social system possible" (Lake, 2011, p. 467), leading to an equal diversity of plausible factors, hypotheses and theories. Further, the field focusses on complex interdependent processes linking people, groups and nations, and also often depends on factors and hypotheses (such as fear or pride) that are typically weakly causal and cannot be directly observed. As a result, almost all IR theories are probabilistic (Van Evera, 1997, p. 8) – making only general and frequently overlapping predictions – and are able to generate these for a great variety of matters. This produces a situation where tests applied to one prediction are both unlikely to be conclusive (as there are multiple unseen plausible explanations and no specific quantified prediction), and in any case when assessments are conducted, the results do not rule out (or confirm) the validity of other elements of the theory.

Hence, IR remains awash in theoretical models that apply to a greater or lesser degree to security studies, including Liberalism, Constructivism, and Marxism. These all disagree by degrees on key assumptions, variables, and hypotheses; but make broadly overlapping and indeterminate predictions on topics including those addressed in the research questions, such as the prevalence of war.<sup>20</sup>

This situation also applies to the paradigm (i.e., group of models) that is Realism, the body of theory ultimately selected here for testing. Realism appears intuitively promising to address the research questions since, as is discussed in more detail below and in Chapter Two, it is a Positivist paradigm that directly addresses security studies questions – including those at the focus of this dissertation. Yet Realist theories writ large, and in particular the so-called SR approaches (specifically OR and DR) that are assessed here, are inherently probabilistic general explanatory models. These make no specific predictions, the forecasts they do generate often overlap, and they also allow for so many anomalous behaviours that they have been proposed as being unfalsifiable (Mearsheimer, 2009; Waltz, 1979, 1986). Also, innumerable sub-branches of OR, DR and other Realist avenues have been developed with equally diverse key factors and hypotheses, making similar and dissimilar forecasts across an extraordinary range of matters.

Further, many Realist works define key terms ambiguously, with an especially vital matter being the treatment of power. Almost universally across the paradigm, power, notably military power, is treated as *the* key independent variable driving predictions. Yet few if any works carefully define or measure power, and those that do seek to gauge military power do so in ways unsuited to its real-world application, surely a confounding matter for a paradigm that aims to explain real events in the field of security studies. Indeed, as Guzzini (2004) notes, Realism's treatment of power places most Realist analyses in jeopardy as no predictions or assessments can be made with confidence if power is mostly immeasurable.

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<sup>20</sup> For a broader discussion of these fields and Realism in general see Dunne et al. (2010). For a comparison of selected theoretical explanations of war see Cashman (2014).

Hence Realism, including OR and DR, embodies all of the factors promoting indeterminacy, with these frequently mixing together and reinforcing one another. While the details of this are addressed in Chapter Two, the result of these issues has been that across thousands of observational assessments, across seven decades since the 1950s, the various branches of Realism have failed to demonstrate unarguably superior explanatory or predictive power between themselves (Vasquez, 1998; Wayman & Diehl, 1994; Sullivan, 2005; Freyburg-Inan et al., 2009). Indeed, the paradigm's very survival (let alone dominance in IR) has been argued to be based on its diversity of schools and flexibility, rendering it almost impossible to prove or disprove, with Bremer observing that Realism "can continue to resist definitive tests almost indefinitely" (Bremer, 1995, p. 540).

## **Section II: Developing an Improved Approach**

Despite all the above difficulties, there remain clear normative, ontological, pedagogical, policy and scholarly merits in addressing the research questions proposed in this dissertation. Considering the potential scale of these benefits, this dissertation follows a Positivist approach and proposes there is sufficient inherent value in attempting to answer *if, how, and when* to conduct another theory test.

Even so, there have been thousands of efforts to test Realism overall with no definitive result (including hundreds that have addressed elements of *if, how, and when*, as noted in Chapter Two), let alone the even greater quantity of works that have also considered other models. Noting this, some form of breakthrough is clearly required in order to have a chance of reaching improved outcomes. And logically, there are better prospects to achieve such an advance by using novel approaches, to avoid previous fruitless paths, and ideally the means used should be broadly applicable and support strong testing.

This dissertation proposes that such a step forwards can potentially be achieved by the large-scale assessment of state strategy preferences. This method arose further



to an extensive literature review that raised a number of well-recognised (though often inconsistently applied) means to support better theory testing, and also examined previous works to identify key causes of failure, analytical “dead ends”, and less-explored avenues that presented promising gaps in the scholarly literature.

This section now discusses the approach in more detail, including how it incorporates various mechanisms (both drawn from scholarship and certain means proposed by the author) to improve theory testing.<sup>21</sup> It also discusses various associated decisions and assumptions taken on by this dissertation.

### **Novel, Broadly Applicable and Strong Test: Using State Strategy Choices**

As noted earlier in this chapter, this dissertation seeks to conduct a novel and strong test on the research questions. It aims to do so by assessing five different SR models that generate different general expectations for *if* states should seek to initiate violence, *how* they should behave in terms of the types of strategies they use to achieve their aims, and *when* a resort to armed aggression should occur.

These general forecasts are tested by developing detailed strategy preferences (including for the resort to war) that nations operating under each model should display in territorial disputes, as moderated by the balance of military power. The importance of strategy forecasts that meet these criteria is that they capture all aspects of the research questions. So, by describing whether states motivated by a particular theory should resort to war, this captures *if*; by describing wider strategy preferences in detail, this captures *how*; and by defining ways that behaviours, including initiating conflict, fluctuate with the balance of power, this captures *when*.

Once the detailed predictions are defined, their prevalence can be examined in a large dataset of behaviours, as matched to an equally large one assessing military

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<sup>21</sup> A review of previous efforts is in Chapter Two.

power. And of course, the more that any theory's predictions are observed, the greater its explanatory power for *if, how, and when*.

The development and operation of this approach is now described below, with the improved testing methods, and various decisions and assumptions taken on by the dissertation to support analysis, highlighted by ***bold italicised*** text. While the meaning and utility of these means is intended to be clear from the text, for interested readers (and to do due service to existing scholarly works) a more detailed summary is provided in Table 1.1 after the written description. Indeed, this method of capturing further information on selected key terms, concepts, decisions and assumptions in explanatory tables is used throughout the dissertation.

Finally, while the assorted mechanisms mainly focus on reducing causes of indeterminacy, they also address avenues to improve conceptual confidence in testing results and maximise the scholarly utility obtained. Further, the means used are mutually reinforcing and can often logically support different strong testing effects concurrently, although the descriptions below tend to focus on their key impacts. Also, some measures accept a potential increase in indeterminacy at more detailed levels of analysis (such as differentiating between DR(GS) and DR(GLS) results) when this is unavoidable but still provides insight into more general differences (such as between DR and OR overall) between the tested models.

## **The Path to a Strong Test: An Overview of Key Concepts and Mechanisms**

### Selecting a Suitable Test

To achieve an enhanced outcome, as an initial point in line with Positivism it was decided to conduct an ***observational test*** of theory. That is, one where predictions are compared to real-world events.

## Choosing Suitable Theories

Further, it was resolved to **reduce the scope of theories being assessed** to Realism, to avoid testing paradigms with potentially incommensurable assumptions. And within Realism, SR was selected due being the dominant IR school for the past 50 years (Labs, 1997). Also, for tests to be compelling, they should be conducted on **topics of core relevance to a theory where it claims particular explanatory power**. And as SR focusses on security studies issues, it forms a natural target for analysis.

After selecting SR, this was refined to the sub-schools of DR(GS)BOP, DR(GS)PTT, DR(GLS), OR(BOP) and OR(PTT). These branches were chosen as they appear promising for testing due to offering notionally **differing answers** to the research questions while sharing compatible and parsimonious assumptions.<sup>22</sup> Further, DR and OR are arguably the largest SR branches (Mearsheimer, 2010a), and their proponents assert that “their respective visions of international politics are universally applicable regardless of time and space” (Kadercan, 2013, p. 1034). Hence testing related models offers potentially the greatest scholarly and policy benefits.

Regarding the models’ predictions on the key questions, these are discussed in detail in Chapter Two. But in summary, on *if* states should initiate aggression (i.e., war), DR(GLS), DR(GS) and OR forecast that nations motivated by them should, respectively, do so almost never, rarely, and frequently – although all the models still expect violence to occur under some circumstances. Of note, SR also accepts that warlike inclinations can arise inherently. Regarding *how* such nations (whether structurally or inherently motivated) should behave, DR(GLS), DR(GS) and OR states can logically be shown to respectively favour increasingly cooperative, mid-range,

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<sup>22</sup> There are a many Realist and Structural Realist sub-schools that add numerous assumptions, often with the aim of increasing predictive power, to the degree of potentially becoming both incommensurable and incompatible with Realism itself (Legro & Moravcsik, 1999). Example branches include Neo-Classical, Contingent, Elaborated Structural, Balance-of-Threat, and Balance-of-Interests Realism; for discussions of these and others see authors including Walt (1987), Christensen and Snyder (1990), Schweller (1994), Glaser (2010), Rose (1998), and James (1995).

and increasingly coercive strategies (including war) when engaging others. And for *when*, BOP proposes that war is most likely when the aggressor has power superiority over its target, while PTT argues this for periods of power parity.

The way these models combine to generate differentiable predictions is shown in Table 1.0. Of note for *when*, the power-aggression correlations for DR(GS), DR(GLS) and OR states reflect, respectively, that such nations are expected to be unlikely to attack even at opportune moments for violence, to effectively never initiate conflict, and to be strongly expected to do so when the balance favours them.

Table 1.0: Overview of Theory Predictions to Research Questions

	<u>DR(GS)BOP</u>	<u>DR(GS)PTT</u>	<u>DR(GLS)</u>	<u>OR(BOP)</u>	<u>OR(PTT)</u>
<u><i>If states are expected to be aggressive</i></u>	Rarely	Rarely	Almost never	Yes	Yes
<u><i>How should states engage</i></u>	Mid-Range Coercive and Cooperative Strategies	Mid-Range Coercive and Cooperative Strategies	Increasingly (Ideally Very) Cooperative Strategies	Increasingly (Ideally Very) Coercive Strategies	Increasingly (Ideally Very) Coercive Strategies
<u><i>When states are likely to initiate war</i></u>	Weak Correlation to Power Superiority	Weak Correlation to Power Parity	Almost Never	Strong Correlation to Power Superiority	Strong Correlation to Power Parity

Developing Strategy Predictions and Choosing an Appropriate Thematic Area

In terms of how to assess these predictions, a strategy testing approach harnessing carefully defined behavioural preferences was selected. As discussed earlier in this chapter, and Chapter Two, this avenue is novel and offers a range of means to address indeterminacy, including by allowing assessment of quantities of outcomes.

Under this approach, detailed strategy predictions were developed, paying ***particular attention to the theories' core assumptions*** to assure that predictions

were logically consistent with each model. Also, forecasts were developed for both “***persistent and common***” and “***rare and distinctive***” preferred strategies to provide a range of means to test the theories. Further, these predictions would be developed for the ***thematically narrow*** matter of territorial disputes to allow predictions to be more tightly defined without sacrificing parsimony. This is also a field where, due to the importance of territory to state survival, behaviours ***are logically more likely to be observed*** and the theories generate more ***distinctly differentiable predictions***.

Regarding these predictions, it was further resolved that states’ actions would be assumed to represent behaviours ***driven by the theories’ core forecasts*** rather than anomalous actions or inherent motivations, unless there were specific reasons to do otherwise. Also, it was decided that if evidence was insufficiently clear to support one of the five models, ***coarse analysis would be attempted***, such as assessing whether the evidence supported DR vice OR writ large. This would still add to the value of the work done. Further, the development of strategy preferences offered the potential to harness ***logically aligned supporting results*** to conduct certain weaker tests.

#### Harnessing a Best Practice Approach and Using a Strong Methodology

It was then resolved to conduct the test in a ***best practice*** structured and repeatable way. This required innovations, including developing an original framework of highly-cooperative through to highly-coercive strategies, and likewise a structured gauge of military power. All predictions and supporting terms (including for the balance of military power) would be ***carefully and clearly defined*** to address the issue of opaqueness of expression causing indeterminacy.

Finally, it was decided that the observational test would be conducted using a ***mixed focussed comparison and statistical-correlative*** methodology, as this harnessed the strengths of both qualitative and quantitative analysis. And to maximise these benefits, it was resolved to apply the methodology to ***bespoke***,

***long-period and large datasets*** – and two were developed by the author specially for this dissertation. These respectively contain 1,371 annual records each of bilateral state behaviours and military power balances related to 21 years of activity at 15 SCS sites contested by up to six states. Using these specialised resources would improve data quality, reduce the impact of outliers, and mitigate the likelihood that predicted behaviours would not be observed.

To now describe how the mixed methodology was applied, each of the 1,371 behavioural records was treated as a case study of international relations between two parties at a dispute location. The common focus question used to assess each case was “which theoretical model best explains the observed results?”, with the answer developed by qualitative comparison of states’ activities to predictions.

Once 1,371 outcomes had been generated (with these cross-referenced to an equal number of power assessments) answers to the key questions of *if, how, and when* could be developed quantitatively. This was done by asking six mutually reinforcing stronger and weaker queries, as follows:

- *A Stronger Test of If.* In the results, what proportion of instances of violence were initiated<sup>23</sup> by, or conducted in a way consistent with, states behaving in accordance with DR(GLS), DR(GS), or OR? This would shed light on whether the wars that do occur are the last resort of Peaceful nations, rare resorts to aggression by Opportunistic states, or actions by committed Revisionists.
- *A Weaker Test of If.* In the results, what proportion of nations can be positively identified as Peaceful, Opportunistic or Revisionist states? The more of any type that predominates, the more most nations in general are inclined to conflict.

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<sup>23</sup> By initiate is meant when a state is the first to resort to such an action, including if by responding to a highly aggressive but sub-war behaviour.

- *A Stronger Test of How.* In the results, what proportion of state behaviour overall aligned with the predictions of DR(GS), DR(GLS), OR, or reflected fundamentally irrational behaviour that would throw the analysis into jeopardy?<sup>24</sup> This can be considered as a form of test of falsification: do nations mostly act in ways contrary to SR's predictions writ large?<sup>25</sup>
- *A Weaker Test of How.* In the results, even if the overall proportion of irrational actions is low, are these concentrated in a few specific states that can overall be classed as irrational? If some nations act principally irrationally, this too indicates that important gaps exist in the theories' explanatory power.
- *A Stronger Test of When.* In the results, what proportion of instances of war occurred in alignment with the forecasts of BOP vice PTT?
- *A Weaker Test of When.* In the results, what aggressive behaviours that risked escalation to war occurred during BOP vice PTT? Nations should not rationally engage in such acts if they did not view the chances for victory in their favour.

#### Tabulated Information

More detailed descriptions of the key strong testing methods are now provided in Table 1.1. These are applied, as described above, throughout the dissertation.

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<sup>24</sup> As discussed in Chapter Two, a key Realist assumption is that of rational state behaviour.

<sup>25</sup> While OR and DR allow for "anomalous" behaviours not predicted by either, if states often act in opposition to their core tenets this would logically cast severe doubt on the theories' validity.

Table 1.1: Strong Testing Methods

<b>Key Concepts and Assumptions (Listed in the Order They Appear in the Text)</b>
<p><b>Conducting an observational test.</b> Theory assessment can be conducted in various ways (such as assessing the logical coherence of a theory). In this dissertation, based on DR, OR, BOP, and PTT’s standing as key schools of thought in International Relations, they are assumed to be coherent.</p> <p>However, Positivism most favours observational tests (comparing predictions to real events) – and this is also notably endorsed by both Waltz (1979, pp. 13–14, 124) and Mearsheimer (2014, pp. 8–12); making it especially appropriate for the investigation of the DR and OR-based models selected.</p> <p>Further, such testing allows for the assessment of probabilistic general theories which do not make specific predictions their forecasts. To test these, what outcomes do arise over a period are examined in comparison to predictions, and the more congruence that occurs, the stronger the theory.</p>
<p><b>Reducing the scope of theories being assessed.</b> Testing theories or paradigms that have different key factors and hypotheses is problematic, as due to inherently diverging conceptions of reality, such theories are often considered incommensurable (Waever, 1996). A more fruitful approach is to compare branches within a school, as these possess common factors allowing more practical and compelling testing (Taliaferro, 2000, p. 130).</p>
<p><b>Testing topics of core relevance to a theory where it claims particular explanatory power.</b> Theories should ideally be tested directly on their specific claims and the manner in which they assert pre-eminence to help circumvent debates on whether assessment criteria are appropriate. If further hypotheses and predictions for testing are developed, they should ideally be related to areas where it claims particular explanatory power (Waltz, 1979, pp. 1–20, 118–123).</p>
<p><b>Differing answers to research questions.</b> For theories to be testable, they must actually generate different (i.e., differentiable) predictions (Van Evera, 1997).</p>
<p><b>Developing predictions with particular attention to theories’ core assumptions.</b> If novel hypotheses and predictions for testing are developed, these should be constructed from a theory’s core assumptions with demonstrated care to help circumvent debates on whether they accurately reflect, and therefore test, the theory under assessment (Waltz, 1979, pp. 1–20, 118–123).</p>
<p><b>Developing “persistent and common” and “rare and distinctive” predictions.</b> Increasingly determinate (i.e., certain and unique) predictions allow for stronger testing. However, with general explanatory probabilistic theories (such as OR and DR) addressing identical phenomena, there may be a low likelihood of developing, let alone observing, highly determinate predictions. In such situations Waltz (1986) recommends identifying both results that should be persistently visible (i.e., highly certain but not unique predictions) and model-specific distinctive behaviours that should occur frequently but not in all cases – that is, highly unique but more uncertain predictions.</p>



**Using a thematically narrow subject area.** It is often possible with general probabilistic theories to develop more determinate predictions without compromising parsimony (i.e., by adding factors) via narrowing their field of inquiry to specific issues (Wivel, 2005). This simply reflects that using a more bounded topic logically allows the issue itself, and any associated forecasts, to be more clearly defined and tested for than considering the entire gamut of nations' behaviours. Waltz arguably (and ironically, considering his aversion to predictions discussed in Chapter Two) goes even further and notes that despite SR's general nature, precise behavioural predictions are possible, even to the level of how individual countries will act in discrete scenarios, once there is enough information about a nation's *specific circumstances* (i.e., the field and issue have been tightly defined) to answer with some sureness the query "How would we expect any state so placed to act?" (2008, p. 45).

**Selecting a thematic area where predictions are logically more likely to be observed.** Logically, selecting issues of key importance to the subject matter (states) should decrease the chance that forecast behaviours do not arise. As is discussed in Chapter Three, the importance of territory makes actions more likely to be observed.

**Selecting a thematic area supporting distinctly differentiable predictions.** The more that a thematic area drives predictions to be logically differentiable, the stronger the test. As is discussed in Chapter Three, territory drives more distinctly different predictions: OR states should move to seize territory, whereas DR states should not.

**Assuming actions represent theories' core forecasts.** Both OR and DR accept that states may act (to undefined degrees) differently to their predictions and including in ways forecast by the other (Mearsheimer, 2009). Hence an action that strongly aligns with one theory can also be weakly explained by the other, and vice versa. But to the extent the theories can claim superior explanatory power (as mooted by their proponents), state behaviour must be assessed against core forecasts rather than abdicating judgement on the basis a nation might be a differently motivated country behaving in a contrary or anomalous way.

Likewise, observed behaviours can equally be explained by inherent motivations or structurally imposed ones. But if SR itself has strong explanatory power, then observed behaviours must be assumed to represent the impact of such forces rather than the happenstance of inherent motivations.

**Attempting coarse analysis if unavoidable.** Considering the general explanatory nature of the theories under assessment, and residual degree of overlap in their predictions, it is likely that some results may not be able to clearly support one of the five models under test. However, more general evidence may be available to support coarser distinctions, such as between DR and OR states.

**Harnessing logically aligned supporting results.** The development of strategy preferences offers the potential to conduct stronger and weaker tests. That is, theories of course can only be strongly tested on the specific predictions they make in regard to research questions. So, DR(GLS) forecasts on *if* (i.e., that states will be not be predisposed to war) can only be tested by examining instances when this occurs. But should Peaceful state behaviours be defined and demonstrated by many nations during the times between conflicts, logically this increases the likelihood that DR(GLS) is correct, even if this is a weaker test.

**Using a mixed focussed comparison and statistical-correlative methodology.** Improved testing can be achieved by selecting the most appropriate type of observational test. This reflects that such assessments can be conducted in different ways to serve various purposes. Key means include qualitative case-studies, quantitative or "Large-N" analyses which conduct statistical analyses of sizeable datasets, and combinations of the two (Van Evera, 1997).

Case studies involve the detailed investigation of a small number of cases (sometimes only one) to identify if a theory's hypotheses operate as described (Van Evera, 1997, pp. 29–30, 49–55). Such studies depend on the individual analyst's judgement to assess diverse evidence (such as leaders' private letters) and make compelling arguments on whether theories are correct, and why. This methodology enables the subtle investigation of causal mechanisms and capturing of qualitative information but is ill-suited to comparing different models' validity, as by investigating a small number of cases, results risk being outliers. Case study methods also include focussed comparisons, which apply common research questions to specific topics across a number of cases (Van Evera, 1997; George & Bennet, 2005, pp. 67–72).

In turn, statistical-correlative analyses compare theories' predictions against large real-world quantitative datasets. They are well-suited to comparing different theories, notably probabilistic ones, as the more data-points that are available the more precisely and certainly correlations can be tested – or as put by Van Evera, “many observations are better test laboratories because they allow more measures of congruence, and tests that rest on more measures are stronger” (1997, p. 62). However, they do not support identifying causal mechanisms, being unable to show why (rather than if) a theory's predictions hold. Due to lacking the means to prove causal relationships, other often statistical methods must be used to control for other factors that could explain outcomes (Waltz, 1979, p. 13; Van Evera, 1997, pp. 51–55).

A mixed-focus comparison and statistical-correlative analyses uses elements of both of these approaches to achieve a stronger outcome. The method essentially involves applying a set of common research questions consistently but qualitatively (using the analyst's judgement but guided by a clearly articulated and repeatable framework) to a relatively large dataset (bringing the benefits of quantitative analysis). This approach has a well-regarded scholarly pedigree (for example, see Stephen Walt's well-known *The Origins of Alliances* (1987), particularly pp. 11–12) and allows for the subtle investigation and description of state behaviour while also supporting correlative tests of theory outcomes: which predictions are better represented in data? Also, qualitatively assessing data supplants the need for complex statistical methods to control for variables, and also captures any sensitivities relevant to the data and its analysis

**Conducting best practice assessment.** For any test, conducting it in a best practice, structured and repeatable way improves confidence in testing outcomes (Liff, 2016). This involves providing frameworks or guidelines for an analyst to use when conducting assessments. This supports clarity of method, reduces the contestability of results, and supports common and repeatable analysis.

**Using carefully and clearly defined terms.** Opaqueness in the expression of key issues increases indeterminacy and the contestability of results; therefore, key terms, assumptions factors and hypotheses need to be carefully defined; so that what is being assessed, how, and any results are clearly understood (Waltz, 1979, pp. 1–20, 118–23; Van Evera, 1997).

**Using large and long-period bespoke datasets.** Using specialised datasets that capture the issues under investigation improves data quality and confidence in outcomes (Mearsheimer & Walt, 2013). Further, large datasets provide more observations to improve the quality of quantitative assessment, and long-period resources increase confidence that predicted outcomes will be observed – if indeed the forecasts themselves have merit.

## **Benefits of the Approach**

The methodology described above brings a number of key benefits in comparison to the vast number of previous efforts. Firstly, the approach itself is novel, harnessing many mutually reinforcing strong testing techniques. As is discussed in Chapter Two, it also addresses a gap in the literature: very few efforts have been attempted to test SR using patterns of state strategy preferences – and none appear to have done so in a best practice, structured manner using large datasets. Similarly, few if any Realist assessments use a well-developed operational measure of power, let alone use this to develop a bespoke dataset to carefully test predictions. The methods used here, then, are a promising avenue to address previous concerns.

Secondly, by focussing on Realism and strategies, the approach used offers the widest possible benefit and the most economical form of testing. So, SR is arguably the most widely used and parsimonious school of IR that addresses security studies. Hence, shedding light on which of its branches has most explanatory power has great value. Further, testing strategies (including the resort to violence) as moderated by the balance of power offers an efficient mechanism to assess *if, how, and when* in one mechanism. And using logically aligned supporting evidence buttresses results should the sample of directly relevant cases (such as war) be low.

Thirdly, the testing approach also provides useful additional information. In particular, by developing predictions for how Revisionist, Opportunistic, and Peaceful states will act short of violence at different balances of power, the approach assists in their identification short of war – a useful policy outcome.

Finally, the specific definitions or concepts developed (such as for military power, or a framework of strategies) are based on a review of existing approaches to harness the best of existing scholarship while avoiding pitfalls or dead ends. This work is conducted through the remainder of the dissertation as relevant concepts are developed, notably in Chapters Two to Seven.

### **Section III: Overview of Chapters**

In light of the above benefits, the author is confident that the approach proposed in this dissertation offers significant improvements over previous efforts. This work is now conducted over the succeeding seven chapters, which are summarised below as a guide for the reader. The overall structure of these chapters is based around meeting the three key logical steps needed to conduct observational testing in the manner proposed. These are, firstly, the development of the behavioural forecasts, both in terms of defining broad trends for theory-associated strategy preferences and then the translation of these into detailed (and hence testable) predictions (Chapters Two to Three). Secondly, there is the development of a measure of military power (Chapters Four to Five). Thirdly, there is the generation of relevant datasets and the testing of the predictions against them (Chapters Six to Eight).

In more detail, Chapter Two is principally a literature review and development of argument. It focusses on a brief overview of Realism followed by a detailed discussion of the key SR theories (OR and DR) and how these combine with other concepts, including Motivational Realism, relative gains, BOP and PTT, to enable the development, from the theories' core principles, of differentiable answers to the research questions. This chapter also reviews how and why previous efforts to assess just such questions failed to produce conclusive results and discusses how this guided the identification of the proposed approach here (the structured assessment of strategy preferences) as a novel avenue for theory testing. Finally, the chapter describes the broad behavioural (strategy) expectations that can be developed for states operating under the various theories being investigated.

Chapter Three focusses on detailed behavioural prediction generation. It firstly develops a definition of state survival that allows diplomatic, economic, and military strategies to be considered as more cooperative or coercive in a structured way. It uses this definition, and further concepts of strategies having different grades of "materiality" and "intensity", to develop a structured framework of coercive and cooperative behaviours. Then, it overlays this continuum with carefully developed

predictions for how states motivated by DR(GS)BOP, DR(GS)PTT, DR(GLS), OR(BOP) and OR(PTT) should behave both in general and in territorial dispute situations, with this supported by a more general discussion of the particular utility of using territorial disputes for theory testing. The predictions are described in terms of differences of scope and direction. Of note, the definitions of survival, materiality, and intensity; the structured framework; and the behavioural predictions, are novel and provide enduring contributions to the scholarly literature.

With the behavioural predictions developed, Chapter Four then focusses on military power. It conducts a discussion and literature review of the importance of power, and particularly military power, to IR in general and Realism in particular, together with the great difficulties that have afflicted efforts to measure power effectively. It develops the argument that what is required is a measure of military power that actually reflects the mechanics of how it is applied: operational success on the battlefield. The chapter then reviews a range of existing works (summarised in Annex A) that aim to gauge power to identify promising concepts, and pitfalls to avoid, when developing such an “operational measure” of military power.

Chapter Five builds on the concepts identified in the previous chapter to propose a new model and measure of military power. This is referred to as the 5-7-7 model due its use of five steps, seven capability inputs and seven outputs. The chapter discusses the operation of the model in detail, including key constraints and assumptions, and conducts a brief self-assessment of its utility. Of note the model is an original creation and available for ongoing use by the scholarly community.

Chapter Six builds the SCS military power and behavioural prediction dataset. As background, hundreds of territorial features (such as islands and reefs) in the SCS are disputed by up to six contending states (Brunei, China, Malaysia, the Philippines,

Taiwan, and Vietnam<sup>26</sup>) – noting that not all states contest all features.<sup>27</sup> The chapter identifies 15 features (representing 32 territorial disputes<sup>28</sup>) that are considered as being particularly ripe for the attention of the contending states either due to offering specific advantages to the controlling powers or being the only disputed territories between certain nations. For each location, the 5-7-7 model is applied over a 21-year period to identify the annual balance of operational military power between the competing nations at each site. These are then correlated with the predictions developed in Chapter Three to provide individualised expectations for how variously motivated states should have behaved as balances shifted.

Of note, Chapter Six is a precis of the separate Military Power Assessment (MPA) that was conducted to generate the necessary data. Key elements of the MPA itself are provided at Annex B to the dissertation, with the MPA comprised of a detailed conceptual document and six Excel workbooks containing some 215,000 cells of information to capture the required data.<sup>29</sup> The MPA itself generates 315 dyad years<sup>30</sup> worth of military power and behavioural prediction assessments. These include 1,371 individual dyadic assessments, at 15 locations, based on the capabilities and interactions of 115 major military asset classes located at 29 military bases and utilising 70 sensor and 70 weapon systems. The MPA tool is also an original creation and available for ongoing use by the scholarly community.

Chapter Seven conducts the theory test itself, generating the key finding that DR overall, and with less certainty DR(GS)BOP in particular, have by far the greatest explanatory power. In turn, this result provides the following answers to the research questions: for *if* – states do not seek conflict; for *how* – motivations can be

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<sup>26</sup> Typically, SR is considered to only apply to Great Powers such as China. Yet in certain cases, as discussed in Chapter Six, Section I, it can be applied to smaller nations such as those tested here.

<sup>27</sup> The Republic of China (Taiwan) is treated as a separate state for theory assessment purposes; this does not reflect any particular position on the status of the island's independence from Beijing.

<sup>28</sup> Counting only bilateral disputes between nations that control a site and multiple other claimants, without further counting disputes over that location between those other claimants also.

<sup>29</sup> As the Excel spreadsheets are research data, they are not provided at Annex B; however, they may be requested from Curtin University or the author.

<sup>30</sup> A dyad is a pair of states.

identified by considering a nation's behaviours; and for *when* – imbalances of power enable conflict. These results were achieved by correlating the 1,371 predictions developed in the MPA with a dataset of state behaviours relevant to those locations, generously provided by the National Defense University (NDU) located in Washington DC. Chapter Seven also discusses the various assumptions and decisions necessary to effectively harness the NDU information, and to what degree the various predictions developed by the theories were supported. As with Chapter Six, Chapter Seven is a precis of the work separately conducted to assess the behaviours in the NDU dataset against the predictions. This is captured in the Theory Analysis Document (TAD), key elements of which are provided at Annex C to the dissertation. The TAD is comprised of a detailed conceptual document supported again by a series of six Excel workbooks, with these containing some 293,500 cells of information.<sup>31</sup> The workbooks combine the line items from the NDU database into aggregated behaviours relevant for each MPA location and then test these behaviours against the various predictions developed in the MPA. These documents also are novel and available as an ongoing resource.

Finally, Chapter Eight provides an overview of the work conducted against the objectives of achieving a novel, broadly applicable and strong test, and summarises the assorted original contributions developed as part of the dissertation. It also discusses selected policy and scholarly implications of the results, and opportunities for further research.

## **Conclusion**

This chapter has sought to provide a concise summary of the nature and importance of the research questions being addressed; issues with theory, theory testing and the means used here to attempt a strong test; and of the overall methodology proposed to address the research questions. In short, theory operates at the heart of IR (and indeed most scholarly disciplines) – without some means to

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<sup>31</sup> As the Excel spreadsheets are research data they are not provided at Annex C; however, they may be requested from Curtin University or the author.

propositionally understand the nature of the world, its analysis and explanation is effectively impossible.

Yet despite the importance of theory, and of identifying correct models, its assessment in IR in particular remains vexed. This represents certain irreducible issues with the nature of IR and the real world: the theories that exist seek to explain common outcomes, that arise from enormously complex interactions, by using often invisible and immeasurable yet competing explanatory hypotheses. As such, different theories or entire paradigms can advance equally cogent, and arguably equally supportable, explanations for world events while also fundamentally disagreeing on why those occurrences come about.

To address these problems, this dissertation has sought to focus on a number of Realist theories that overtly share a common basis (supporting easier comparison), to define for these differentiable and highly certain predictions (supporting the more robust testing of which model is more correct), and test these using a large and novel dataset – further increasing confidence in testing outcomes. It has also sought to address the poor definition and measurement of power – arguably the fundamental variable in Realism and most if not all efforts to test the paradigm.

Further, the approach used here, of using state strategy preferences in territorial disputes, judged against bespoke measures of military power, is novel – and indeed harnesses an approach of predicting state behaviour that has been little attempted due to largely being considered infeasible. And the testing of predictions in a mixed qualitative and quantitative assessment appears to be the largest of its kind.

Due to these and a range of other measures discussed above, there are solid grounds for confidence that a strong, novel, and compelling assessment can be made of the various theories under consideration, with likewise important answers developed for the research questions. Of course, this is done in detail over the succeeding chapters as discussed in Section III above, and with the structure of the dissertation thus summarised, the work now commences in earnest in Chapter Two.



## Chapter Two – Realism and Its Empirical Assessment

This dissertation investigates three key security studies questions: *if* nations are generally driven towards initiating military aggression; *how* individual tendencies for peaceable and aggressive intent can be identified; and *when* is violence most likely to erupt. It does so through empirically assessing the explanatory power of five SR branches, DR(GS)BOP, DR(GS)PTT, DR(GLS), OR(BOP), and OR(PTT), that make differing predictions for these issues. These forecasts are tested in a three-phase manner. Firstly, by carefully developing structured strategy predictions from the theories' core tenets, with this being done first in general and then in sufficient detail for these forecasts to be robustly testable. Secondly, by developing a model to allow the measurement of military power. Thirdly, by comparing the predictions to datasets that capture states' relative military power and actions in territorial disputes,<sup>32</sup> a thematic area where the predictions are clearly applicable.

Clearly, to achieve this approach requires, firstly, the development of the different predictions themselves. This chapter lays the foundation for doing so by discussing the theories and how they lead to differing forecasts for the research questions, ahead of the development of territorial dispute focussed predictions in the next chapter. Noting the difficulties with testing Realism alluded to previously, it also provides a literature review of previous such attempts to articulate the basis and benefits of the structured, strategy-led approach used in this dissertation.

The chapter proceeds in five sections. The first discusses Realism overall in brief, to introduce the main paradigm. The second discusses OR and DR in more detail (as the overarching schools upon which the five branches are based), including describing how they generate notionally differing expectations for state behaviour. This section also defines certain key terms to help address indeterminacy. The third examines how OR and DR can be combined with work by Motivational Realists and the concepts of BOP and PTT to develop different predictions for the research

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<sup>32</sup> Defined as conflicting claims by two or more states over the ownership and control of a piece of land and any associated maritime territory that stems from it.

questions. This section also adds to IR theory by proposing that aggressive states should prefer consistently escalating coercive strategies. The fourth conducts a literature review of how existing empirical tests of the models on these issues have been impeded mainly, but not exclusively, by their theoretical indeterminacy. Section Five concludes by summarising how the literature review contributed to the solution proposed in Chapter One – testing via state strategy preferences. This section also provides several original contributions. Most importantly, it provides the theoretical basis for, and description of, how structurally driven differentiable behavioural expectations for DR(GS), DR(GLS) and OR states logically arise if strategies are organised into an increasingly cooperative and coercive framework.

### **Section I: The Realist Paradigm**

As noted in Chapter One, DR(GS)BOP, DR(GS)PTT, DR(GLS), OR(PTT) and OR(BOP) lead to broadly differing predictions on the research questions. As part of any effort to develop improved testing, it is worthwhile discussing the various branches and defining how these outcomes arise. Such an effort usefully begins with a discussion of Realism and SR in general, to situate the sub-schools within IR.

#### **Realism and Structural Realism in International Relations**

While IR has many theories, this dissertation deliberately focusses on Realism. This reflects that Realism has been the field's dominant paradigm, particularly for security studies, for the past 50 years and arguably for millennia, tracing its roots to Thucydides' account of the Peloponnesian War (Wayman & Diehl, 1994, pp. 3–5).

But what is Realism? At the most basic level Realism is a theory of international state power politics – that is, the explanation, description and prediction of interactions between states based on the concept of their seeking or preserving power. This focus stems from Realism's core assumptions, variables, and

hypotheses, and while there is some debate on their scope,<sup>33</sup> a parsimonious description reduces them to five. Firstly, states are the most important actors in the international system. Secondly, states are coherent unitary actors (rather than many viewpoints pulling in different directions). Thirdly, Realism's motivating hypothesis is that the main international aim for all nations' is to gain power, in the sense of economic and military capabilities that they can use to influence other states. They seek such power at least to assure their survival (to protect themselves from other nations) or to achieve other ends. Fourthly, states are rational – in seeking power, they calculate the utility of various paths to do so and engage in those that appear to offer the greatest benefit. Fifthly, how nations actually pursue power (the dependent variable) will be principally affected by a key independent variable: their position in the international balance of power, and in particular the balance of military power. This reflects that force is the definitive measure, the *ultima ratio* by which nations can influence one another.<sup>34</sup>

From this formulation, Realism seeks to describe and predict everything from the operation of the international system to the behaviours of individual nations: all these can, and should, be understood through the lens of countries seeking to gain and maintain power. Further, noting its focus on military power, Realism in particular centres on security studies, issues such as the causes of war, the structure of alliances, and the conditions of peace; and it is in these areas that its exponents claim for it the greatest explanatory and predictive superiority (Kegley, 1995; Holsti, 1995; Wayman & Diehl, 1994, p. 25). Realist theory has also always claimed a prescriptive role: it has aimed to advise how states *should* behave, based on a focus of maintaining or advancing power (Wayman & Diehl, 1994, pp. 3–5).

Realism is, however, far from a homogenous school, and is better considered as a paradigm with many branches that privilege different factors in explaining and predicting states' actions (Vasquez, 1998, pp. 19–59; Wayman & Diehl, 1994, pp. 3–25). To its core assumptions can be added various equally important factors, such as

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<sup>33</sup> For a concise investigation of such issues see Freyburg-Inan et al. (2009).

<sup>34</sup> Power, in particular military power, is the subject of Chapter Four.

that the international order is anarchic (i.e., there is no world sovereign to which states can appeal for protection); and the level of impact that perceptions of threat have on nations' international policy (Wayman & Diehl, 1994, pp. 6–13).

Despite this diversity, Realism's branches can still (as discussed below) broadly be assigned to two main groupings, Classical Realism and SR. Of note, the latter particularly has developed a diversity of variants including Contingent, Prudential, Neo-Classical, Elaborated, and Balance-of-Threat realism (Holsti, 1995; Elman, 1996; Freyburg-Inan et al. 2009).<sup>35</sup> And these branches in turn generate a range of explanations, predictions and prescriptions for state behaviour that in many instances are ambiguous or overtly contradictory – and because of this are arguably incommensurable (Wayman & Diehl, 1994, p. 3; Legro & Moravcsik, 1999).

### **Classical Realism**

Considering the diversity of branches, and the question of whether some can even be compared, to enable the practical investigation of the research questions it is necessary to reduce the assessed schools to a manageable number. This was achieved firstly by focussing on OR and DR, arguably the two largest and most parsimonious SR branches, and further differentiating these by adding concepts from compatible sub-schools that did not decrease parsimony. This allowed the development of coherent and commensurable theoretical positions that provided differentiable answers to all the research questions, something that OR and DR cannot do alone.

But to situate in particular OR and DR in the Paradigm, and give some colour to Realism's operation, it is worthwhile focussing firstly on what is now called Classical Realism but was originally simply Realism. This was the main Realist school from the 1950s to the 1980s and brought the paradigm to its position as the dominant form of IR and security studies inquiry (Labs, 1997; Vasquez, 1998, pp. 36–37).

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<sup>35</sup> For a broader overview of the various schools see Elman and Jensen (2014).

Classical Realism arose in reaction to the perceived failings of Idealism to explain the World War Two (Vasquez, 1998, p. 35). Idealism was a theory that rose to prominence after World War One and focussed on the power of education, inter-nation contact, democracy, and international organisations and law to produce enduring peace (Vasquez, 1998, pp. 33–35; Kegley, 1995). As such, Idealism was a highly theoretical and normative paradigm that described the world as it “should be” and so developed recommendations to avoid war and promote peace.

Evidently, of course, Idealism’s mechanisms for peace failed. Notably, the formation of various institutions after World War One, in particular the League of Nations, the predecessor to the United Nations (UN), did not prevent World War Two.

In response, a range of authors, notably Hans Morgenthau in his work *Politics Among Nations* (1948), sought to develop a body of IR theory that would describe the world “in reality” (hence “Realism”) as opposed to any “idealised” view. Morgenthau and his colleagues sought to develop a Positivist and practical approach to describing, explaining, and predicting the interactions between states; one that was evidence-based and provided testable predictions. The theory would be developed and refined by a broad research program, providing ever better policy advice to maintain peace and avoid more global conflict (Vasquez, 1998, pp. 35–44).

Morgenthau built his Realism on the core assumptions of the field: a globe of rational, power-seeking states in an anarchical international environment. Indeed, his work was arguably the first to so clearly articulate, and widely propagate, these as premier bases for grasping world affairs (Vasquez, 1998, pp. 35–39; Kegley, 1995). Morgenthau’s work focussed on an innate human lust for power, an *animus dominandi*, as the hypothesis driving nations’ actions, with states’ levels of power being the most important factor shaping their foreign policies and levels of security (Vasquez, 1998, pp. 36–55; Wolfers, 1951; Snyder, 2002). Hence, all states needed to attend to the international balance of power, and seek to develop their own, as “In a world where power counts, no nation pursuing a rational policy has a choice between renouncing power and wanting power” (Morgenthau, 1946, p. 200).

Morgenthau used these drives to explain the constancy in the relations between nations of power-seeking and associated behaviours including the development of national power; patterns of war and cooperation; and inter-state alliances (Morgenthau, 1946). He also used his theory to provide policy advice to states: they should evaluate their international actions by whether they garnered or lost power, and always seek gain if possible at reasonable risk (Leng, 1993a, pp. 4–6). Further, Morgenthau developed his Realism into a “grand theory” that could describe and predict general trends in all nations’ foreign policies as these would, and should, be mainly focussed on gaining and maintaining national power (Leng, 1993a, pp. 3–5).

### **Structural Realism**

Succeeding Morgenthau’s formulation, and being the primary form of Realism since the 1980s, has been Neo-Realism or SR (Vasquez, 1998, pp. 190–191; Labs, 1997). This form arguably originated in, and was most famously expressed by, Kenneth Waltz’s *Theory of International Politics* (1979) (hereafter “*Theory*”). While SR addressed similar topics to Classical Realism, its key difference was its hypothesis that state behaviour and the operation of the international system could be explained by interactions at the structural (or “system”) level rather than factors (such as leaders’ psychology or regime type) operating at the state (or “unit”) level.

Under SR, rather than a “will to power” driving nations’ actions, these result from the logical pursuit of security in an anarchical environment. In a world with no sovereign, all states must attend to their own safety by developing national power, notably military force. In doing so each nation is able to threaten others and, due to mutual uncertainty about current and future intentions, this leads to a world of anxiety, competition and even conflict (Waltz, 1979). So, under SR it is the structural forces (power seeking and suspicion) that explain recurring wars, alliances, and periods of peace across history. And because of this, factors such as states’ internal details (such as their type of government), their diverse policy interests or their leaders’ peaceful or aggressive inclinations are largely irrelevant to the functioning of the world system (Waltz, 1979, pp. 65–70).

Waltz's theory received widespread acclaim for its parsimonious and holistic nature: it explained much of world events with a minimum of variables and, short of the world order ceasing to be anarchical or composed of states, would have endless applicability. Due to its impact, as noted above SR generated a great diversity of subsidiary theories. Many of these theories developed competing predictions, rendering them seemingly ripe for assessment in the Realist tradition.

## **Section II: Defensive Realism and Offensive Realism**

Of the SR inter-branch debates, a central one that appears promising for resolution, and particularly relevant to this dissertation, is whether DR or OR better describes international affairs. Of note, DR is used here to refer to Waltz's original SR,<sup>36</sup> a rebranding conducted by the scholarly community to reflect Waltz's assessment that the international system drives states to essentially maintain or "defend" their rank in the world order (a matter discussed below). In turn, OR refers to the theory of the same name expressed in John Mearsheimer's *The Tragedy of Great Power Politics* (2014) (hereafter "*Tragedy*").<sup>37</sup>

Resolving which school better addresses the research questions appears particularly promising and useful. This reflects that the theories are arguably the largest and most influential SR schools (Mearsheimer, 2010a), share the same parsimonious assumptions, and make different predictions on key issues.

To describe how, in particular, the different predictions arise it is necessary to discuss the schools in some detail. This usefully begins by firstly discussing OR and DR's shared assumptions,<sup>38</sup> common understandings, and causal hypotheses, and

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<sup>36</sup> The term "DR" is also sometimes used (but not in this work) to refer to yet further developed versions of Waltz's theory that add concepts such as the Offence-Defence Balance (Elman, 2009).

<sup>37</sup> *Tragedy* was first published in 2001, however the work used here is the updated edition.

<sup>38</sup> For the sake of completeness, Waltz argues that DR needs only two assumptions: that the world order is anarchic and is populated by states that wish to survive (1979, p. 118). Mearsheimer lists five that are encompassed by, but not identical with, those stated below (2014, pp. 30–31). However, the list here, in the author's judgement, best reflects the assumptions in both theories.

articulating how these drive dissimilar forecasts. Doing so provides an important opportunity to carefully describe how these predictions are derived from the theories' core tenets. It also allows for the definition of key terms, as these often lack an agreed scholarly meaning and are frequently ambiguous when addressed by Waltz and Mearsheimer (and indeed many other authors). Finally, it allows for the discussion of supporting concepts implied by the two key authors but not overtly addressed by them. All these processes help address indeterminacy.

Of note, when definitions or supporting concepts are discussed here, the nature of these terms aligns with those used or implied by Waltz, Mearsheimer and broader scholarship. Also, similarly to Chapter One, short descriptions of more complex ***bold italicised*** terms are provided in the body of the text, with additional exposition and commentary provided for interested readers further below in [Table 2.0](#). Lastly, the versions of DR and OR discussed below generally reflect the tenets of Waltz and Mearsheimer, although certain other works are drawn on where needed.

### **Shared Assumptions and Variables**

As an initial point, OR and DR share five key assumptions (listed below, A-E):

A) *States are unitary, rational and survival seeking*. Waltz and Mearsheimer see a world comprised of unitary states whose primary general foreign policy objective is survival<sup>39</sup> (maintaining territorial integrity and domestic political autonomy<sup>40</sup>), pursued by the rational use of strategies. On these terms:

- ***Foreign policy*** principally refers to a state's various general and specific international goals that it pursues by engaging with other nations. To support the primary goal of survival, nations' main further general end is to

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<sup>39</sup> The primacy of survival is overtly stated by Mearsheimer (2014, pp. 31, 46) and implicitly by Waltz who notes it as the goal upon which all else depends (1979, pp. 118–126).

<sup>40</sup> This definition is used by Mearsheimer (2014, p. 31) and aligns with its use in most Realist thought (Kadercan, 2013); Waltz never defines survival, but his usage aligns with the definition used here.



gain **power** (an increased share of resources or capabilities). Specific goals are sub-objectives, such as signing defence treaties, that support general ends. Foreign policy also refers to the nature of states' deliberate engagement (hostile, neutral or friendly) with other countries.

- **Rationality** means intentionally seeking goals where the power benefits gained should exceed the power losses incurred by pursuit, and as part of this choosing strategies (i.e., ways of pursuit) that are the most efficient – that minimise cost and risk.<sup>41</sup>
- **Strategies** are the deliberate paths of action that states engage in to utilise their **means** (i.e., their military, economic and diplomatic capabilities) to influence other nations to achieve their policy ends. Strategies can be general or specific (depending on the goal). To affect rational states, strategies can be **cooperative** (offering mutual benefits), **coercive** (threatening harm) or mixtures of both.

Taking these definitions together, the concept of survival-seeking rational states becomes clearer. States wish to survive. To do so they need power. And they pursue this through rational behaviour. This is where states consider (in terms of the power benefit they offer) various specific goals that support survival, and then, to achieve them, seek to calculate various strategies' likelihoods of success, and associated costs and risks. They then select the goals, and embark on the strategies, that offer the best prospects of a power increase. Also, strategies, means, and policy ends have a circular relationship: states use their power (share of resources) as the means that they use in strategies to achieve the end of yet more power. Importantly, in this work, unless specified otherwise, all references to strategies, means and ends refer to their specific variants. This reflects that general strategies (such as “balancing” discussed below) are so broad, and the end of “survival” able

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<sup>41</sup> Various authors argue that DR does not assume rationality (see Mearsheimer, 2009; Laroche & Pratt, 2018), although others argue it *does* (see Mearsheimer, 2009, p. 254, Note 2). While acknowledging the dispute, this dissertation proceeds on the basis that DR does presume rationality.

to be served in so many diverse ways, that their consideration does not support the careful definition of terms and predictions necessary to support strong testing.

- B) *States view one another as their main security threats.* This stems from all states having the potential to cause each other great harm through using their power, with a ***particular concern being military power*** – which can threaten a nation’s very survival. The focus on states reflects that they generally control the largest share of the world’s resources (i.e., they have the most power), at least compared to most non-state actors, with this notably applying to armed force.
- C) *Power superiority leads to conflict.* Under DR and OR power superiority, notably in military power, enables aggression. This is because when such power is balanced, a state is better able to defend itself and hence an aggressor’s victory becomes more uncertain and costly, and attack less rational. And the opposite holds true: when a state is at power superiority, it is more likely to attack (Waltz, 1979, pp. 132, 201; Mearsheimer, 2014, p. 37).
- D) *The world order is anarchical.* States operate in an anarchical self-help environment (Waltz, 1979, pp. 102–118; Mearsheimer, 2014, pp. 30–32). In the face of potential armed threat, they depend on both ***inward looking and external strategies*** to develop their own mainly military power to achieve a balance and protect survival (Elman, 1996, pp. 10–30; Mearsheimer, 2010a). As they relate to international affairs, DR and OR in fact focus almost entirely on states’ external strategies, such as alliances, and hence so does this dissertation.
- E) *Balances of power guide foreign policy.* Both theories hold that nations make foreign policy and strategy decisions (i.e., the goals they pursue, and how they pursue them) mainly influenced by their position in the international balance of power, especially military power (Waltz, 1979, pp. 113, 153, 180; Mearsheimer, 2014, pp. 10–11). This allows states to be treated as, aside from their power differences, identical “black boxes” whose internal variances are irrelevant (Mearsheimer, 2010a; 2014, p. 11; Waltz, 1979, pp. 71–72; 1986, p. 325).

## Causal Hypotheses

Based on these factors, Mearsheimer and Waltz propose a common understanding of states' worldviews and a causal hypothesis for their behaviour. Both see countries existing in an environment of fear and suspicion; mindful of the horrors of war that might occur at any time; and recognising that even should other nations be benevolent now, this may change later. Further, states know that in the anarchical environment, to assuage these fears they must rely on themselves to survive (Mearsheimer, 2014, pp. 32–33; Waltz, 1988; 1979, pp. 103–126). As a result, OR and DR have the same hypothesis for states' actions: nations work to secure themselves by rationally (i.e., most efficiently) seeking to improve their relative power. It is through this lens of gaining and maintaining power to achieve security that nations' international behaviour can be understood.

## Auxiliary Assumptions and Understandings

Both theories also contain auxiliary assumptions and understandings. Both recognise that states have innate natures, from peaceable to inherently expansionist, and they will sometimes pursue non-power related goals such as seeking glory or prestige (Waltz, 1979, pp. 118–126; Mearsheimer, 2010a). While OR and DR note these factors can be decisive in *some* instances, they are not generally seen as determinative (Mearsheimer, 2010a).

Also, for states to be able to pursue power rationally, strategies must logically be able to be assigned greater and lesser degrees of cost, benefit and risk, and this must be achievable in some broadly internationally common way. Otherwise, nations would have no means to organise their own behaviour, assess how it might impact others, or judge the level of cost they face from different states' actions.

Unfortunately, neither Mearsheimer or Waltz provides an ordering principle by which states should assess their strategies, and any such task is inherently complex. However, the following list of overarching or “grand” strategies, defined by the

means (types of capability or resource) that they use,<sup>42</sup> aligns with the arguments in the authors' works (Mearsheimer in particular proposes preferred general strategies for states) and broader Realist discussions of strategies.<sup>43</sup> It is based on the concept that nations should most favour strategies that best serve the primary goal of survival and is organised in a de-escalating degree of preference. So, states should focus most on the first type of strategy, then the second and lastly the third.

- *Militarised Strategies.* These are paths of behaviour that directly aim to increase a states' military power (such as by engaging in alliances), either for defence or to use it to attack or even conquer other nations. The primary position of military strategies reflects that armed force is the principal risk to survival that nations face. Importantly, a particularly strong method of rapid power increase is the war of conquest, either for large tracts of land or even of entire other nations, due to its **double impact**: power is both removed from the other country and added to that of the conquering state.
- *Economic Strategies.* These are paths of behaviour that seek to increase nations' economic might, using actions such as trade deals, as these provide the basis for military power, together with supporting the fulfilment of other goals, such as improving living standards.
- *Diplomatic Strategies.* These are paths of behaviour that either seek to develop or pursue non-military or economic ends (such as prestige), or do not use such means. Such strategies could involve such as the organisation of visa arrangements, or the expulsion of diplomats.

Of note, due to these strategies' escalating potential to impact *other nations'* survival, the above ordering also reflects a typical Realist arrangement of increasingly coercive and cooperative strategies. That is, each type of grand strategy

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<sup>42</sup> Hence these means can be used to refer to both types of resources and the strategies that use them, a source of potential confusion addressed in Chapter Three.

<sup>43</sup> This question is also discussed in more detail in Chapter Three.

presents a means for a state to yet more strongly affect another nation, to convince the latter to help it to achieve some foreign policy end (Tang 2010a; Glaser, 1994).

Further, nations should use mixtures of cooperative and coercive strategies to achieve their objectives efficiently (Waltz, 1971). This reflects that as the targets (nations) and objectives (foreign policy goals) of specific strategies will vary, these targets too will likely respond best to tailored mixtures of costs and benefits.

Also, both DR and OR are overtly probabilistic general explanatory theories (Waltz, 1979; Mearsheimer, 2009, 2014). Both aim to explain and predict the occurrence of certain broad patterns based on common structural assumptions about the nature of the world but make no specific predictions for how often these will occur. Also, while both can be used to explain specific occurrences in retrospect (such as nations' choice of foreign policy goals and associated strategies), they provide no means of confidently predicting these in advance. This is because they both (but most overtly DR) eschew considering unit-level factors that may allow for the detailed prediction of specific states' behaviour (Waltz, 1979, pp. 116–124). With this said, as shall be seen below both Waltz and particularly Mearsheimer do make occasional predictions for individual nations' actions.

Finally, while DR and OR are written to be applied to Great Powers (i.e., the distinctly most powerful nations in the world), as these are the most consequential in the international order, they also apply to more minor nations. Both Mearsheimer and Waltz advise that their theories apply to lesser states "insofar as their interactions are insulated from the Great Powers of a system, whether by the relative indifference of the latter or by difficulties of communication and transportation" (Waltz 1979, p. 73; also quoted in Mearsheimer, 2014, pp. 412–413). This reflects that Great Powers might otherwise impose their will on smaller countries, preventing them from acting in accordance with OR's or DR's tenets.

Table 2.0: Offensive and Defensive Realism – Expanded Key Definitions, Supporting Concepts and Commentary

Key Terms and Selected Commentary on Their Use by Waltz and Mearsheimer (Listed in the Order That They Appear in the Text)
<p><b>Foreign policy.</b> This term principally refers to a state’s deliberately chosen (a reflection of rationality, described below in this table) general and specific international goals that it pursues through engaging with other nations. Under DR and OR, a state’s main <i>general</i> foreign policy goal is survival, as other countries are key threats to its existence, with this supported by further general objectives of power maintenance or maximisation. But these must logically be sought by <i>specific</i> policy goals: major individual objectives that support survival and power acquisition, such as signing defence treaties. Such specific goals may or may not of themselves confer a power advantage to a state but are understood as contributing to that objective.</p> <p>Of note, strictly speaking, Mearsheimer (2014, p. 31) and Waltz (1979, p. 118) only define one general foreign policy goal, survival, and recommend that states pursue it via strategies of power maximisation or maintenance. But as is further discussed below, these proposals, in turn, can equally be described as general foreign policy goals or general strategies. Here, the former use is preferred as it aligns, in the author’s estimation, more closely with Waltz and Mearsheimer’s intent.</p> <p>Also, Mearsheimer and Waltz rarely refer to foreign policy goals (both refer to survival as a goal rather than a <i>foreign policy goal</i>). But as Realism focusses on inter-state politics, their discussions can be considered as referring to the international sphere. Further, neither much recognise the difference between general and specific goals, or that foreign policy can refer to both the ends sought and the nature of nations’ interaction. Instead, they (and many other authors) use the term in all these ways, and more, inconsistently, including by overlap with definitions of strategy, which is how goals are pursued. See especially Waltz (1979, pp. 68, 121–123) and Mearsheimer (2014, pp. 138–167; 2009, pp. 245–246).</p>
<p><b>Power.</b> Both Waltz and Mearsheimer broadly consider power as a measure of nations’ abilities to exercise influence (i.e., change) other states actions, by offering benefits but especially by threatening costs. In turn states’ power is gauged by the relative distribution of mainly military, but also economic and population resources or capabilities (Waltz, 1979, pp. 131, 192; Mearsheimer, 2014, pp. 55–82). The more of these a nation has in comparison to another, the more powerful it is.</p>
<p><b>Rationality.</b> Rationality can be defined as states’ intentional selection of general and specific policy objectives, and paths to pursuing these, where the expected power gain to be achieved is likely to exceed the expected power loss incurred by the pursuit. As part of selecting their goals, and deciding on how to achieve them, nations are considered to be aware of the international environment and to consider carefully their own objectives and preferences and attempt to gauge those of other states. Further, they are conscious of how their own actions may affect other countries and potentially drive their behaviour, and vice versa, in the long and short term. Rationality further includes that the hunt for power is conducted amid an overall objective of seeking to maximise benefits while minimising costs and risks. This definition of rationality is drawn from Elman (1996) and aligns with that of Mearsheimer (2014, pp. 31, 37; 2009, p. 244) and that implied by Waltz (1979).</p>

**Strategies.** Strategies are the deliberate paths of action that states engage in to utilise their means to achieve their end of gaining power to assure survival. This definition is based on a representative definition by Freedman (2013, p. xi) and aligns with the term's use by Waltz (1979, p. 118) and Mearsheimer (2014, pp. 138–167).

Logically, nations can increase their power via two avenues: increasing their own strength and/or decreasing that of potential adversaries. In turn, they do so via internal strategies (such as innate economic growth or investment in military power) and external (international) ones, such as making their own alliances while weakening those of others (Waltz, 1979, p. 118) or even conquering nations and absorbing their resources (Mearsheimer, 2014, pp. 138–141).

Strategies as referred to in this work mean international strategies, in the sense of the paths of action states conduct to utilise their means to influence other nations to achieve their foreign policy ends. states use international strategies since, as any end sought is a foreign policy goal, it innately is able to be affected by other nations. So, the state seeks to convince other countries to support its achievement of that goal via its strategy.

Strategies too can be specific or general, depending on the type of policy goal they support, and the ends sought by specific strategies become the means of general ones. For a specific strategy, a nation might use the *means* of diplomacy to achieve the *end* of another country's agreement to a defence treaty. Such treaties become some of the *means* states utilise, in general strategies (such as seeking allies, referred to as "balancing"), to achieve the *ends* of power and survival. Few authors acknowledge these issues, contributing to difficulties in testing Realism.

**Means.** Means refer to the resources and capabilities (generally grouped at least into diplomatic, economic and military categories, with many sub-divisions possible – see Regan (2000) and Melin (2015)) that states have to influence one another by threatening or imposing costs or promising or realising of benefits.

**Coercive and cooperative strategies.** A state has two broad methods for influence: the threat or imposition of costs (coercion) or promise or realising of benefits (cooperation). This reflects the assumption of rational nations that choose paths and goals where expected gains exceed expected losses; therefore, changing this calculus provides a means to change behaviour (Glaser, 2010, p. 20). This concept allows all strategies to be broadly classed into coercive and cooperative types, or mixtures of both. In IR theory cooperation mainly refers to the potential for two or more nations to generate more benefits (mainly maintaining or gaining power) together than either could achieve alone (Jervis, 1978). This can be achieved by means ranging from avoiding unnecessary competition (such as wasteful arms races) to actual power-building collaboration (Tang, 2010a, pp. 1013–123). In turn coercive strategies are where nations seek to harm each other's power (Edelstein, 2002).

**Concern over military power.** Countries are especially concerned about each other's military power, in the sense of the potential for offensive armed action, as it is *the* most important threat to survival. This reflects factors including that all nations have military forces which can be used offensively at any time; that this risks dreadful costs through war, including by destroying a state; and that nations can never be sure of each other's current or future intentions (Waltz, 1979, pp. 102–113; Mearsheimer, 2014, pp. 30–43). As discussed in Chapter Four, Mearsheimer notes the primacy of military power explicitly, and Waltz acknowledges this more indirectly.

**Double impact of conquest.** The "double impact" of conquest (taking power from one nation and adding it to another) is noted by Mearsheimer and Waltz. The former overtly recognises conquest gains power for the conqueror *and* diminishes that of the conquered (2014, pp. 147–152; 2010a, p. 83). Waltz acknowledges the effect indirectly when he notes: "War aside, the economic and other bases of power change little more rapidly in one major nation than they do in another" (1979, p. 177).

## **Key Differences Regarding Security, the Pursuit of Power and Power Maximisation**

Despite their common basis, DR and OR generate very different views on how states should behave, particularly in terms of whether nations will show a predilection for military conquest. This stems from an unstated difference between the two regarding a unit-level variable<sup>44</sup> (or, arguably, different weightings for a foundational assumption): how much security (and hence power) states desire to guard against the threat of other nations (Snyder, 2002; Wang, 2004). This leads to DR defining a world where nations seek to maintain their level of power, auguring for peace due to avoiding war, whereas OR argues that states must seek to rapidly maximise power, notably by violent conquest.

### **Defensive Realism**

In more detail, Waltz argues that states are satisfied with an “appropriate” amount of security and power, which, backed by structural influences, leads to a principally explanatory (rather than predictive) hypothesis of overall tendencies for stability (1988, pp. 615–616). The structural mechanism is that in the anarchical system, while states do not wish to be too weak, as this may invite attack, any “excessive” power-gathering (a measure Waltz never defines) almost inevitably causes other countries to form coalitions to jointly “balance” their power against it, potentially placing it power-wise worse-off than before (Waltz, 1979, p. 126).<sup>45</sup> Indeed, a weaker alliance may risk preventative war, hoping to destroy the threat before disparities widen (Waltz, 1979, pp. 118–126). Waltz notes these results mean: “In international politics, success leads to failure. The excessive accumulation of power by one state or coalition of states elicits the opposition of others” (1988, p. 625).

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<sup>44</sup> This is the primary scholarly explanation for the differences between OR and DR, and hence is the one discussed here. Other explanations include differing conceptions of the efficiency of balancing and the roles of uncertainty in decision-making. For a review see Hamilton and Rathbun (2013).

<sup>45</sup> Waltz (1979) uses this structural drive to balance to explain the repeated formation of coalitions across history, despite the very different identities and natures of states over time.



To avoid such results, DR holds that countries, regardless of their innate nature, are rationally driven to a general policy objective of maintaining the status quo (hence being referred to here as “Status Quo nations”) rather than being power maximisers.<sup>46</sup> Or as Waltz puts it: “The first concern of states is not to maximise power but to maintain their positions in the [international] system” (1979, p. 126). Moderation is also driven by the notion that the greater any state’s power (or power acquisition) in general, the more are other nations sensitised to it, and likely to balance against it (Waltz, 1979, pp. 118–126; 1988, p. 616).

Hence, Waltz explicitly rejects the notion that states should aim to maximise their power (1986, p. 334) as this is no guarantee of security. Instead, he argues that countries should mainly assure their safety through general strategies of external balancing (seeking alliances with other nations) to withstand the threat of more powerful countries (Mearsheimer, 2010a, p. 82; Waltz, 1979, pp. 126–127). Of note, while not overtly acknowledged by Waltz, from a logical perspective such strategies are particularly appealing under DR as they offer a way for nations to match the greater power of another country without dramatically increasing their own – and hence causing others to array against them.

#### Further Behavioural Expectations

Based on these matters, several further expectations relevant to the aims of this dissertation can be developed for state behaviour under DR, noting that many of these are not overtly acknowledged by Waltz. Firstly, the aversion to maximising power should dissuade nations from seeking hegemony (i.e., to become the most powerful state): attempting to do so can only generate the greatest countervailing coalition (Mearsheimer, 2009).

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<sup>46</sup> In terms of the definitions used in this dissertation, this outcome can equally be characterised as an “end” (maintaining an “appropriate” level of power, to assure survival) or a general strategy “means” (using this level of power as a way to assure survival). The former meaning is used, as it more closely reflects Waltz’s intent.

Secondly, states should be very cautious about initiating violence. This reflects that minor attacks to weaken adversaries or conquer small slices of territory will not advantage a state overmuch, while risking unwanted and uncontrolled escalation to more costly and dangerous war. And large wars, especially of conquest, should be particularly avoided given their potential to overly increase a nation's power. Indeed, such incentives against violence are reflected in the scholarly community's name for Waltz's theory: Defensive Realism.

Thirdly, these prescriptions do not prevent states from advancing their power in more measured ways that they assess will improve their security without provoking a reaction. Indeed, nations should logically vigorously pursue strategies to gain moderate power, either by increasing their own or diminishing that of other nations. Waltz in fact notes that in particular, weak nations "may enjoy considerable freedom of action [to gain power] if they are so far removed in their capabilities from the strong that the latter are not much bothered by their actions or much concerned by *marginal increases* in their capabilities" (1979, p. 113) (emphasis added<sup>47</sup>). Rationally, this concept should apply to most interactions between states on small power changes.

Fourthly, while more powerful states can engage in conquest or violence more easily, the incentives against doing so lead to no linear correlation between power and aggression – they are only weakly causally linked. Due to this, power is not a zero-sum issue: simply because one nation has or gains more power does not mean that others' security is necessarily worse off. However, an environment of anxiety and suspicion remains, and the constraints against violence do not prevent fearful nations, incorrigible aggressors, or normally peaceable states occasionally tempted to action by power, from initiating conflict (Waltz, 1979, pp. 132, 201; 1988).

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<sup>47</sup> Waltz in fact refers here to the potential for states to engage in military aggression. However, the fact that nations *can* engage in minor armed actions to gain power does not mean that these are prudent under DR.

Fifthly, states can allow opportunities to gain power to pass them by. Reasons for this can include that the ratios of costs and benefits are unappealing, or that gained power might prompt a counter reaction. And even if an opportunity is not fully exploited or is taken by a second state, this does not mean that the other nation will use its power against the first.

### **Offensive Realism**

Conversely OR argues that, rationally, due to the great dangers posed by war and the uncertainty of the international system, all states, regardless of their innate nature, must be power maximisers (Mearsheimer, 2010a). As states never know how much power is enough, they should be relentless Revisionists<sup>48</sup> (i.e., seeking to revise the world order in their favour) until they achieve regional hegemony – the outcome that best assures their security.<sup>49</sup> Only after they become such potentates do they become Status Quo powers (Mearsheimer, 2010b; Toft, 2005). Indeed, Mearsheimer argues that aside from such hegemonies OR “does not allow for status quo powers” (2014, pp. 2, 29). Instead, *all* states must *always* have the general foreign policy aim of increasing their relative power.<sup>50</sup>

Further, states must constantly seek to gain power *as rapidly as possible*, lest they miss opportunities for conquest or other competitors move ahead first (Lemke, 2004). Or as put by Mearsheimer: “Given the difficulty of determining how much power is enough for today and tomorrow ... the best way [for states] to ensure their security is to achieve hegemony now ... only a misguided state would pass up an opportunity to be the hegemon in the system because it thought it already had sufficient power to survive” (2014, p. 35).

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<sup>48</sup> The term Revisionist is hereafter used synonymously with an aggressive state.

<sup>49</sup> Mearsheimer argues states ideally seek to be global hegemonies, but due to the physical constraints of projecting power overseas nations will only ever be regional hegemonies (2014, p. 138).

<sup>50</sup> Mearsheimer, like Waltz, does not use terms such as general and specific foreign policies or strategies; however, his work is framed in these terms to align with the definitions used here.

Mearsheimer also contends that the most effective way to *rapidly* gain relative power is *at the expense* of other nations (2014, p. 2). This is purely logical: the maximum degree of relative power can be gained by simultaneously increasing a state's share of power while decreasing that of a competitor.<sup>51</sup> Mearsheimer argues that nations should do this principally by a general strategy of conquest – ideally by only the threat of violence (which he refers to as “blackmail”) as this avoids the costs and risks of conflict; or, if necessary, actual war.<sup>52</sup> Further, rationally, states should only do so at “propitious” or opportune moments – that is, when their superior balance of military power means that they judge the costs and risks of battle as low, and the prospect of valuable gains as high (Mearsheimer, 2014, pp. 2, 37). Alternatively, if the timing is not auspicious, states should pursue a general strategy of weakening their competitors (Snyder, 2002; Mearsheimer, 2014, pp. 2–3, 21, 138–168).

Aside from such instances, Mearsheimer also predicts that states should predominantly (but not exclusively) pursue general strategies of buck-passing rather than balancing. By this he means that countries should, as much as they can, avoid joining alliances against rising powers, thus “passing-the-buck” so that other nations contend with competitors alone. This allows the buck-passer to gain strength while others compete (Mearsheimer, 2010a, pp. 159–162).

#### Further Behavioural Predictions

Of note in an OR world, nations *cannot* allow chances to gain power to pass them by. The risk is too great because under OR, power *is* a zero-sum issue: one nation's increase in power is almost always adverse to the security of those around it (Glaser, 1994). This stems from Mearsheimer's argument that since states must

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<sup>51</sup> This logical aspect is not overtly noted by Mearsheimer, who instead focusses on the means of how nations can gain power at other's expense.

<sup>52</sup> While Mearsheimer describes wars as the principal means by which nations gain power (2014, pp. 138–140) he does not explicitly describe these as wars of conquest. However, noting his description of the benefits of war as based on the extraction of resources from captured lands (2014, pp. 147–152), the meaning of wars in OR as wars of conquest is widely understood in the literature (Snyder, 2002).

gain power rapidly, when opportunities to strike appear, then states have every incentive to do so – even years before other nations might be a threat (2014, p. 3). So, all nations must seize every opportunity to gain power, draw ahead in the world order and engage in conquest, before others do the same to them (Tang, 2010a, pp. 108–109). Hence under OR, more powerful nations should consistently act more aggressively, at least until they are hegemons.

### **Section III: Existing Predictions and Tests Under Offensive and Defensive Realism**

Based on the above, OR and DR have generated an almost endless range of seemingly dissimilar predictions, and efforts to test them, by hundreds of authors. Reflecting the aims of the dissertation, this section focusses on how the theories (particularly when joined with other compatible concepts) generate different predictions for the research questions, and also key existing means to test them<sup>53</sup>.

#### **Addressing and Testing Questions of *If States Will Be Aggressive***

As should be evident from their descriptions, under OR states can be considered as inherently hostile (either due to innate motivation or structurally driven incentives to aggression), and under DR as restrained from violence for the same reasons. Indeed, these expectations are contained in the names of the theories themselves.

#### **Testing Offensive and Defensive Realism**

Since, to be tested strongly, theories must be assessed against their specific predictions, these simple propositions must be checked by the metric of whether nations do actually engage in violence. This can be done via two key methods.

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<sup>53</sup> The means discussed here reflect those judged by the author as most logically compelling and/or with the greatest representation in the scholarly literature, as discussed in Section IV. Of course, noting the ability to develop diverse hypotheses and approaches for testing, an almost endless series of means could be proposed and certainly more have been attempted than those discussed here.

Firstly, the extent of conflict in any given sample can be surveyed, as the two theories provide a general prediction that inter-state aggression, and particularly major wars, and *especially* ones of conquest, should be less common in a DR world than an OR one. This reflects that for nations to maintain their position in the international system (the *primary* goal under DR) then they must avoid actions that take much power from others and upset the world order. And major wars, notably ones of conquest, have great potential to do so. Hence DR has a so-called “status quo bias”; and while this is not addressed by Waltz it is well recognised in the wider scholarly community (Snyder, 2002; Mearsheimer, 2009).

Secondly, there is a much more direct correlation between power and aggression under OR than DR. Therefore, a covarying analysis is possible: as power disparities increase, is there a proportional increase in states initiating aggression? If so, OR is supported, or if not, DR.

Both these sets predictions can be tested at both the system (groups of states) and individual levels in various ways. So, both theories expect increasing instability with the more Great Powers that exist (e.g., a multipolar vice bipolar world) and the power imbalances between them (Waltz, 1979, pp. 129–193; Mearsheimer, 2014, pp. 334–346). And while DR does not make explicitly make unit-level predictions it arguably does so implicitly: if nations are to avoid gaining power by war, if this behaviour dominates at the system level it must also be chosen by more states.

Alternatively, a weaker test can be made of examining states’ general and specific strategy preferences short of war. For example, DR predicts balancing and OR buck-passing; hence, if nations act in such ways, then this should provide an indication of their inclinations towards conflict.

### **Addressing and Testing Questions of *How States’ Motivations Can Be Identified***

While DR and OR recognise that sometimes states’ innate motivations, from expansionist to peaceable, will be determinative of their international behaviour,

they provide no means of identifying such inclinations. This reflects that structural theories' very point is that external influences usually overwhelm such preferences, so there is little basis to expect motivations will often show in identifiable ways. This lack of guidance is unfortunate regardless of which theory better describes the world. States logically should have a clear interest in identifying Revisionists that threaten them, or genuinely Peaceful countries with which like-minded compatriots could cooperate with confidence, helping avoid unnecessary conflict.

However, another group of DR-aligned theorists,<sup>54</sup> sometimes called "Motivational Realists" (Kydd, 1997b), have argued that, while structure still affects behaviour, in various situations differently motivated states should still act in noticeably different ways in terms of patterns of behaviour.<sup>55</sup> In particular, they propose that inherently collaborative Peaceful states are inclined towards increasingly cooperative strategies, while aggressive Revisionist nations favour highly coercive approaches (Kydd, 1997b; Glaser, 1994; Tang, 2010a, p. 29). These notions provide a means of identifying motivation based on states' *patterns of strategy preferences over time*.

### **Conceptual Underpinnings**

To explain the Motivational Realist position requires recalling that strategies can be considered coercive (power harming) and cooperative (mutual power building), arranged in escalating levels of impact (diplomatic, economic, military). While cooperation holds clear appeal, in a power-sensitive world its realisation is constrained by relative gains, with this being the potential for one nation to gain differentially more benefit than another when they work together. This may occur either overtly (due to an agreement such as a two-to-one split), or due to cheating (Glaser, 1994). So, while cooperation might advance both nations in their "absolute

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<sup>54</sup> In the sense of a world view in line with Waltz's rather than Mearsheimer's concept of states' assumptions on the importance of security.

<sup>55</sup> These theorists include Kydd (1997b, 2000), Jervis (1978), Schweller (1996), Glaser (1994, 2010) and Tang (2010a). Of note, Kydd's original use of the term related to authors who did not accept the anarchic world order alone as a sufficient cause for war. But "Motivational Realist" is here used more broadly to include writers who recognise the impact of inherent motivations on state behaviour. For a review of various positions accepting motivation see Taliaferro (2000) and Elman (1996).

gains”, the risk that one will benefit more hinders collaboration since power disparity poses a threat, with this particularly hindering higher (i.e., security) cooperation (Glaser, 1994). For example, deeply integrated exercises between two states’ defence forces can provide both the experience to allow them to better help one another – but also to better attack one another. Importantly, the risks of relative gains could be abated if nations were sure of each other’s peaceful motives, thus enabling extensive absolute gains to be enjoyed across the strategy spectrum.

Finally, Waltz (1979, p. 105) and Mearsheimer (2014, pp. 33–36, 156–159) both argue that states’ concerns over relative gains serve to substantially constrain the potential for cooperation. Despite this concurrence, nations conceptually should be more sensitive under OR, given the stronger correlation between power and aggression. To differentiate Waltz from other theorists, his position is hereafter referred to as Gains Sensitive DR or DR(GS).

### **Defining Preferences for Peaceful States**

In comparison, Motivational Realists propose that, in fact, nations should be less alarmed about relative gains; a “Gains Less-Sensitive” position hereafter referred to as DR(GLS). These writers further propose that, enabled by this reduced sensitivity, Peaceful states in particular can identify one another using reciprocal, consistent and increasing levels of cooperation and so-called costly signals.

In more detail, most Motivational Realists argue that states can be less concerned about relative gains for various reasons.<sup>56</sup> These include that as under DR a change in relative power does not necessarily lead to aggression, relative gains are not definitively threatening (Tang, 2010a). Further, such gains, if proportionate to the strength of the cooperating nations, actually maintain the balance of power.

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<sup>56</sup> For a discussion see Schweller (1996).



Due to such factors, cooperation is enabled for inherently Peaceful nations – that is, countries that do not seek to harm other states, and instead aim to gain power through cooperation.<sup>57</sup> Such nations in fact should logically seek ever higher levels of collaboration, so as to gain the most benefit for themselves, while accepting the chance of others gaining differentially more power (Tang, 2010a). After all, offensively, the Peaceful state does not plan to attack its partners – hence, their gain does not subvert such aims; and defensively, its level of risk does not increase in proportion to any power shift.

Yet any Peaceful state's desired high-level (i.e., security) collaboration raises high risks should its partner prove, for example, to be a deceitful aggressive nation that had only pretended to be cooperative to prepare to attack. Hence, Motivational Realists argue that even Peaceful nations should begin cooperation at a lower level and *increase* it based on reciprocation (i.e., a willingness to equitably share benefits, and propose and accept more extensive cooperation), with this building trust in one other's motives and allowing escalating collaboration (Tang, 2010a). As part of this, Peaceful nations should consistently offer cooperative gestures, effectively never initiate war,<sup>58</sup> and display moderation (i.e., not act coercively, especially militarily, without provocation) and show restraint (i.e., avoid aggressive escalation in response to coercion), as ways of demonstrating their non-aggressive nature (Tang, 2010a, pp. 99–127; Kydd, 1997b; Glaser, 1994).<sup>59</sup>

Of note, the degree to which collaborative actions are persistently initiated may vary (Tang, 2010a). In favour of consistent efforts are the incentives for Peaceful nations to initiate and capitalise on immediate opportunities for power-building cooperation and also to demonstrate their bona fides to potential future partners observing their behaviour. However, if such states assess their efforts are not bearing fruit, or are even counterproductive due to being regarded as deceitful,

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<sup>57</sup> Also referred to as security seekers (Kydd, 1997b).

<sup>58</sup> Certain exceedingly rare exceptions proposed by Tang (2010a, p. 90) are noted in Chapter Three.

<sup>59</sup> These definitions of moderation and restraint are used somewhat implicitly and interchangeably by the various Motivational Realist authors.

they may allow matters to rest. After all, even if chances to gain power are lost, due to the lower impact of relative gains, this is not too dangerous to the Peaceful state.

Within cooperative strategies, costly signals are particular actions that are more harmful to the objectives of inherently aggressive states than peaceable ones. Hence, by engaging in costly signals, a Peaceful nation can better demonstrate its bona fides (Kydd, 2000). Examples range from espousing a peaceful ideology to degrees of unilateral disarmament (Kydd, 1997b). Here too nations can begin with a low-cost signal and, if it is reciprocated, then escalate. Thus, by consistent, escalating and reciprocating levels of cooperation and costly signals, Motivational Realists argue that *innately* Peaceful states can, and should, safely gain confidence in one another's bona fides. And this leads to cooperation with deserving partners.

Finally, a potential complication for the proposal that inherently Peaceful states should seek escalating collaboration is that since such activities build ever more power, they should be avoided to mitigate the chance of countervailing coalitions. Yet, rationally, this should not constrain such cooperation in a DR(GLS) world. This is because, when occurring between like-minded states, the gain of one partner does not cause the other to move against it. And for those nations that do not wish to cooperate, some will be Revisionists – which the Peaceful state would wish to be more powerful than in any case. For the others, some will collaborate in time once they become certain of its bona fides, and the rest are likely to at most balance (rather than attack) due to the reduced impact of relative gains.

### **Defining Preferences for Inherently Aggressive and Offensive Realist States**

In turn, Motivational Realists propose that, rationally, inherent Revisionists should demonstrate behaviours opposite to those of Peaceful states. Such aggressors are defined as those that seek to gain power through conquest or imposing harm on other nations (Tang, 2010a). As Revisionists *do* intend injury on others, they should avoid relative gains that might hinder such ambitions, so any cooperation should be slight. Further, they should avoid costly signals (Kydd, 1997b).

Also, aggressive states are well aware that various nations may share their intentions, so they should seek to gain power quickly at others' expense – and thereby secure themselves in a Realist world. As such, Revisionists cannot allow opportunities to gain power to pass them by, so they should *very consistently* initiate threats or practical acts of high-level coercion as often as possible, favouring militarised strategies – including war (Tang, 2010a, pp. 99–127).

Importantly, this dissertation here also advances a novel proposition for aggressive state behaviour that is not addressed by most Motivational Realists. This is that, logically, Revisionists should favour increasingly coercive behaviours, and indeed in escalating rapidly to the strongest available form of coercion. This reflects that the more forceful the measure, the more quickly a rational target should submit.<sup>60</sup>

Further, Tang (2010a) argues the behaviours proposed for inherently aggressive states are equivalent to those that can be expected for structurally driven Revisionists under OR, as they share a common power maximising logic; and indeed, Tang refers to aggressive countries as OR states. This concept rationally also applies to the proposition that such nations should favour escalating and highly coercive acts.<sup>61</sup> Hence, 'OR state' is how aggressive nations are referred to hereafter.

### **Testing for Peaceful and Aggressive States**

The above mechanisms offer two reinforcing means to address *how* Peaceful or Revisionist nations can be identified: searching for patterns of escalating cooperation or coercion, and a willingness for costly signals. A number of brief points relate to this.

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<sup>60</sup> This rational element driving strategy preferences is arguably implied in Tang (2010a) and Mearsheimer's (2014) work, noting that both argue that Revisionists should prefer militarised strategies, which are the most confrontational methods available to states.

<sup>61</sup> Tang's (2010a) argument, and the proposal here that aggressive states should prefer escalating coercion, align too with the ideas presented by Mearsheimer. He overtly argues that concerns over relative gains make strong inter-state cooperation almost impossible except for temporary alliances against immediate greater threats or when one nation buttresses another to make it a more attractive target for a third (Mearsheimer, 2014, pp. 33–36, 153–159). This clearly only leaves coercive means, and logically the most coercive should be preferred.

Firstly, these avenues might be proposed as incompatible with DR and OR as the Motivational Realists' theories describe a world less sensitised to relative gains and security.<sup>62</sup> However, even in a DR(GS) or OR world, the patterns serve as intuitively plausible means for inherently strongly Peaceful or aggressive states to behave. And since both theories allow for such motivations to be determinative on occasion and do not describe how they will manifest, the Motivational Realist position provides a sound path forwards.

Further, most Motivational Realists do not propose what *general strategies* (such as balancing or buck-passing) variously motivated states should prefer, let alone what specific strategies individual nations should favour.<sup>63</sup> After all, this would involve unit-level knowledge of each state's circumstances, something DR eschews. However, their predictions for preferences for *strategies in general* (coercive vice cooperative) should hold true regardless of the general or specific strategy pursued.

Finally, testing for such behaviours, using strictly Motivational Realist logic, does not serve as a test of either DR(GLS) or OR. So, most Motivational Realists do not forecast how common Revisionist or Peaceful states should be, as they do not provide a SR-aligned basis for why either type should predominate.<sup>64</sup> Because of this uncertainty, even if many Revisionists were found in a sample, this could be explained by an OR world or that most nations see the globe in a "DR(GLS) way" but happen to be Revisionists: the results are indistinguishable. In turn a large number of Peaceful states may be happenstance in either a DR(GLS) or OR globe.

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<sup>62</sup> Some Motivational Realists (such as Glaser, 1994) also rely on concepts not used by Waltz or Mearsheimer, such as offence-defence distinguishability, to enable a suitably cooperative world to exist such that Peaceful states can demonstrate their intentions. Hence this might be considered incommensurable to OR and DR. However, for authors such as Kydd (1997b), such concepts only form part of their argument, and writers such as Tang (2010a) barely use them at all.

<sup>63</sup> Although most do propose exemplars of specific types of "costly signals", discussed above. Also, Tang in particular provides a range of actions (such as arms races or military attack) and named types of strategies (such as deterrence) that aggressive and Peaceful nations should prefer as part of overall their approaches, and also proposes for each certain preferred general strategies (2010a, pp. 106–111). These contributions are addressed in Chapter Three.

<sup>64</sup> Tang (2010a) does not propose whether the structurally driven OR worldview should in fact be common. Also, while he does elsewhere argue that most nations should now be genuinely cooperative, Tang (2010c) bases this on a separate "social evolutionary" rather than an SR proposition.

## Addressing and Testing Questions of *When Aggression Will Occur*: Balance of Power Theory and Power Transition Theory

While OR and DR provide differing predictions of *if* states will engage in aggression, for those nations that do initiate conflict, there is a further refinement on describing *when* they will choose to do so. In particular, OR and DR align with classic BOP, which assesses power parity as peaceful and disparity as dangerous.<sup>65</sup> So, power disparity should see more conflicts, with states at power superiority initiating aggression, and broad parity should see fewer conflicts, with nations at such times using non-militarised means to achieve their ends.

In contrast, PTT argues the opposite. The theory describes that for power imbalances, the winner of any contest is so evident that the more powerful nation need not engage in violence at all. Instead, non-military measures suffice. But when power is balanced, victory or defeat is possible, and any *dissatisfied* actors have a more immediate incentive to attack before their position worsens (if their power is waning), or if their power is increasing, before the weakening competitor strikes first.<sup>66</sup> So, for PTT, power *balances* are opportune moments for aggression,<sup>67</sup> with this holding true at the global, regional and dyadic levels, and between hegemony and challengers, and also more broadly between states.<sup>68</sup> Of note, PTT nations will recognise that aggression conducted at power parity risks higher costs than if done at power superiority. However, attacking during such a balance is logically still an 'opportune moment' as when the PTT nation had power superiority, aggression was unnecessary (and hence illogical due to the costs it would incur), while delaying risks entering into an even worse power position, with yet more danger.

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<sup>65</sup> In this dissertation, the abbreviation "BOP" refers to Balance of Power theory, whereas measures of the actual balance of armed force between nations is referred to as the military balance of power.

<sup>66</sup> The theory makes no predictions about if the world will be populated with Revisionist or Status Quo states; but it does note that a serious cause of dissatisfaction is necessary to prompt a state to act as a Revisionist at an opportune moment of parity; see Lemke (1997, 2010) and Liao (2014).

<sup>67</sup> More specifically, PTT focuses on the narrowing of a power gap, that is, the process of a transition occurring, as the cause for conflict, rather than the 'fact of' power parity. However, to be testable, this narrowing has to be defined in an observable way, and this is done by defining 'transitions' as occurring during conditions of power parity. See especially Lemke (2002, 2010).

<sup>68</sup> For various discussions see Organski and Kugler (1980), Lemke (2002, 2010) and Liao (2014).

## Testing Balance of Power Theory and Power Transition Theory

Due to sharing common but differing appreciations of the impact of the structural balance of power, the propositions of BOP and PTT are conceptually appropriate to test against one another in terms of how they apply to nations under SR.<sup>69</sup> Simply put, in a sample of dissatisfied states, which balance of power in fact aligned with initiating violence: parity or superiority?

### Summary Overview

As should be clear from the discussion, the various theories provide various existing means for answering *if, how, and when* due to predicting different outcomes, providing means of testing the propositions, and being combinable to allow for efficient assessment. These are summarised in Table 2.1 below.

Table 2.1: Overview of Theory Predictions and Key Tests for Research Questions

	<u>DR(GS)BOP</u>	<u>DR(GS)PTT</u>	<u>OR(PTT)</u>	<u>OR(BOP)</u>
<u>If states are expected to be aggressive</u>	<b>P:</b> No <b>T:</b> # wars, relation power and war, strategy preferences	<b>P:</b> No <b>T:</b> # wars, relation power and war, strategy preferences	<b>P:</b> Yes <b>T:</b> # wars, relation power and war, strategy preferences	<b>P:</b> Yes <b>T:</b> # wars, relation power and war, strategy preferences
<u>How should Peaceful and Revisionist states act</u>	<b>P:</b> Peaceful – Escalating Cooperation & Costly Signals <b>P:</b> Revisionist – Escalating Coercion, No Costly Signals (Aligns with OR)			
<u>When states are likely to initiate war</u>	<b>P:</b> Superior Power <b>T:</b> Power Balance at War Initiation	<b>P:</b> Parity of Power <b>T:</b> Power Balance at War Initiation	<b>P:</b> Parity of Power <b>T:</b> Power Balance at War Initiation	<b>P:</b> Superior Power <b>T:</b> Power Balance at War Initiation

*Note: P – Prediction; T – test.*

<sup>69</sup> While some authors have contested PTT's compatibility with Realism, many scholars also have considered it well suited. For the purposes of this dissertation, it is treated as being appropriate when used purely as a structural point of comparison for when violence is likely to occur. For a discussion of PTT and Realism see Elman and Jensen (2014, pp. 1–30).

## Section IV: A Literature Review of Existing Efforts and Issues with Empirically Testing Structural Realism

With the theories developing, from a handful of common assumptions, such as apparently different worldviews and predictions, their comparative testing should be straightforward at the system, unit and strategy levels. This in turn should provide an excellent basis for resolving the research questions of *if, how, and when*.

Yet a range of factors have served to frustrate testing, centred on the various schools' theoretical indeterminacy, reflecting the impact of uncertain forecasts, overlapping predictions, and ill-defined terms. This has led to thousands of previous tests generating equivocal or conflicting outcomes based on the predictions, definitions and hypotheses developed and used.<sup>70</sup>

Despite such issues, the various attempts also point to promising future avenues. Hence, the following section provides a literature review of these issues and tests, to recognise previous efforts and show how they guide the approach used here. Of note, the review focuses on efforts that have addressed the research questions via the key testing approaches discussed above. Indeed, the wide use of those methods in the literature (and their logical applicability to the research queries) led to their selection as key mechanisms in the previous section. As such, the review below excludes analyses that fall outside of the dissertation's scope by seeking to test Realism against other research paradigms, or have used sub-schools with incompatible assumptions and factors, or have investigated non-Realist concerns such as trade policy.<sup>71</sup>

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<sup>70</sup> Such factors have raised doubts on the coherence of OR and DR, but have not seen their demise. These arguments are beyond this dissertation's scope, which considers the theories cohesive, but overviews include Sullivan (2005), Legro and Moravcsik (1999) and Pashakhanlou (2014).

<sup>71</sup> While not discussed here such works were reviewed as part of the literature search and the results are summarised for the reader. In short, their collective outcomes on various issues were as indeterminate as the ones discussed below. Examples of inter-paradigm analyses include Valeriano (2009), Maoz and Russett (1993) and Farber and Gowa (1995); while economic and trade tests include those by Chan (2001), Gowa and Mansfield (1993), Sandholtz (1993), and Peterson (2011).

## Overarching Complications

### **Is Defensive Realism Able to Be Tested?**

In respect of whether the theories can be tested in a positivist sense – that is, whether they provide “generalisable, predictive laws with clear empirical implications” (LaRoche & Pratt, 2018, p. 3) whose outcomes can be compared – OR holds a simpler position. Mearsheimer explicitly makes testable predictions (such as that Great Powers should favour war at times of power superiority) and welcomes OR’s assessment against them, noting that while any theory will have outliers, the better the theory the fewer the anomalies (2014, pp. 1–12).

A different situation abides for DR(GS), where Waltz denies that his theory generates any testable predictions in terms of general or specific foreign policy ends or the strategies used to achieve them (2008, pp. 83–92).<sup>72</sup> At the core of Waltz’s argument is that as DR is deliberately a theory of *international politics*, it excludes the domestic variables he argues are necessary to predict and explain individual nations’ behaviours (1979, pp. 121–123).<sup>73</sup> Instead, he argues that DR(GS) only explains the recurrence of certain patterns in international politics (such as balancing) and even here its predictive powers are limited. So, he notes that DR does not predict that balances of power will exist “most or even much of the time”, merely that they will reoccur (2008, p. 88). Waltz is particularly critical of DR’s ability to make ever more specific predictions, stating a general theory of its type will never explain “why state X made a certain move last Tuesday” (1979, p. 121).

While Waltz’s position is supported by various scholars,<sup>74</sup> countervailing this view are many of his other statements, together with wider work by the scholarly community. For example, Waltz uses DR(GS) to make a number of explicit and

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<sup>72</sup> Specifically, Waltz argues his theory cannot make predictions about individual state’s foreign policies, but as previously noted his use of this term overlaps with the meaning of strategy.

<sup>73</sup> To predict such matters, Waltz argues, would need a separate “theory of foreign policy” that captured unit-level factors (1979, pp. 72, 121–123).

<sup>74</sup> For a recent overview see LaRoche and Pratt (2018).



inferred predictions and explanations at the systemic (balancing and polar stability) *and* unit levels, such as for the behaviour of ancient Athens and imperial Germany (cited in Elman, 1996, pp. 10–11). Indeed, Waltz declares *individualised* predictions are possible *with SR alone*, with enough information about a nation’s circumstances to answer with some confidence the question “How would we expect any state so placed to act?” (2008, p. 45).<sup>75</sup> Further, when Waltz notes that balancing (including defensive alliances) is the behaviour induced in states by the international system (1979, p. 126), it should logically also predominate at the unit- and system-levels.

These factors together argue that increasingly specific predictions are indeed possible, including for *probable* foreign policies and general and specific strategies, if countries’ circumstances are sufficiently well understood. And indeed Mearsheimer’s willingness, and Waltz’s open-ended language, has led (as reviewed in this section) many scholars to apply OR and DR(GS) to make or test system- and unit-level predictions over nearly 40 years.<sup>76</sup> Thus, while doubts remain in assessing DR(GS), this dissertation proceeds on the basis that this can be done when predictions are developed in alignment with the requirements outlined above.

### **Measuring Military Power**

Another confounding factor in testing the various theories are the under-elaborated and inaccurate methods used in most analyses to assess power, and particularly military power. This is critical as power is the primary variable in most theories and empirical assessments of Realism (Vasquez, 1998, pp. 104–120; Mearsheimer, 2014). Hence, when investigating the relationship between power and outcomes (such as engaging in aggression during power superiority), an effective measure of it is vital. Instead, in fact, many poor gauges have been used. These are discussed, and an improved measure is proposed, in Chapters Four and Five.

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<sup>75</sup> Waltz overtly rejects knowledge of unit-level factors as necessary for prediction, and requires instead only the descriptive details of a nation’s situation and its position in the balance of power, using these to explain China’s military foreign policy behaviour in the Korean War (2008, p.44-45).

<sup>76</sup> For further overviews see Legro and Moravcsik (1999), Vasquez (1997), Valeriano (2009), Chan (2004b), Wang (2004), Sullivan (2005), Pashakhanlou (2014) and LaRoche and Pratt (2018).

## Indeterminacy and Testing *If, How, and When*

### **Questions of *If* States Will Be Aggressive**

Despite such issues, much empirical assessment of Realism has been conducted, including for OR and DR(GS) (Sullivan, 2005). Thousands of tests have been attempted if Classical Realism is included, noting that this can serve as a proxy for OR (Mearsheimer 2014, p. 21; Vasquez, 1998, pp. 120–136).

On the first question of *if* nations will generally be aggressive, the literature review showed few efforts have aimed to explicitly address this matter. However, very many works reviewed issues such as the relationship between power disparities and violence – and thus have clearly investigated the question implicitly. After all, if in such areas OR has greater explanatory power, then the world by default will be more violent. Yet despite much labour, no agreed answer exists due the various and often intertwining causes of indeterminacy, making the cause of analytical failure unclear. This has led to various scholars (or single authors over time) producing incompatible and contradictory results on the same issue (Mearsheimer & Walt, 2013).

### Tests at the System and Unit Levels: Uncertain and Overlapping Predictions, and Ill-defined Terms

Several problems exist with testing OR and DR(GS) by the first key approach noted in Section II: that of examining the extent of conflict, in particular major wars. Namely, neither theory predicts a specific prevalence of war; both allow an undefined percentage of states to act in “sub optimal” opposition to their tenets; and neither specify time horizons (Mearsheimer, 2009). Indeed, Waltz’s formulation accepts that wars (of conquest or otherwise) will occur for reasons including states’ natures (such as incorrigible aggression) or the mistrust caused by the struggle for survival in anarchy (Waltz, 1979; 1988, pp. 615–616).

Since both theories expect conflict, there is no particular “amount” of war that proves one or another correct; and if a particular period of time does not support a theory, it can always be argued that a larger sample is required. Potentially, examining longer periods could provide more confidence in the explanatory power of OR vice DR. But this is frustrated due to no agreed definition of “major war”, and the number of conflicts constantly fluctuating.<sup>77</sup>

Furthermore, the available evidence can be explained by either theory: when nations are not in conflict, this may be because they follow DR’s prescriptions, or because they are Revisionists simply waiting for a better moment to strike. And when conflict erupts, it might be due to irrationally aggressive nations, OR’s structurally driven Revisionists, or DR states overreacting to anxiety.

Due to such issues, few if any studies have attempted to assess OR and DR by examining “quantities” of violence. Instead, most have sought to investigate the correlation between power disparity and aggression. Unfortunately, exactly the same concerns apply to efforts to such investigations. Both OR and DR(GS) expect aggression to increase with power disparity, and neither proposes a level that separates one outcome from another. Conceptually, the results of such assessments are further caveated by the poorly defined nature of power used, with many studies not even using the same measures.<sup>78</sup>

Further to these concerns, no definitive answers have been found at the system level for the relationship between power and violence at all. For example, in a meta-review by Vasquez of nearly 8,000 studies examining Classical Realism (serving as a proxy for OR), some 60% investigated the relationship between national power and initiating conflict and found no strong correlation (1998, pp.

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<sup>77</sup> For example, the Correlates of War (COW) Project is arguably the largest quantitative resources for the assessment of conflict. The Project classes wars as those where there are 1,000 or more battlefield deaths between states; however, it provides no guidance on whether or where a line can be drawn to describe a “major” war, noting that some conflicts have had deaths in the tens of millions. See Jones et al. (1996).

<sup>78</sup> Various types of different measures used are discussed in Chapter Four.

120–150). While this might be taken as evidence that DR(GS) is correct, Vasquez notes that as the theory makes no predictions for this covariation, it is not robustly testable (1998, pp. 192–212). In turn, many scholars have found a positive relationship between power superiority and war (Valeriano, 2009; Bell, 2017; Pearson et al., 1994) but again this does not prove either theorem correct. The same occurs for the various studies that have found conflicting outcomes examining the stability of multipolar systems.<sup>79</sup> And regardless of the result found, this would not resolve OR's and DR's explanatory merit since each predicts the same outcome.

Separately, DR(GS)'s and OR's system-level predictions of balancing versus buck-passing can be considered as a weaker version of testing for violence. But definitions of these terms are so broad as to be almost interchangeable, with the same behaviour hence supporting both (Vasquez, 1997, pp. 902–909; Valierno, 2009, p. 188). So, Mearsheimer permits, as part of buck-passing, one nation to support another to make it more powerful and thus a more attractive target for an aggressor (2014, pp. 158–165). Yet such acts could also be a key part of a state enticing another into a balancing coalition. Such issues, of which many exist (and apply also to most other conceptions of general strategies), have led to endlessly contested conclusions as to which outcome is more common.<sup>80</sup>

These same outcomes, and for the same reasons, have occurred for tests at the unit level, with predictions here also made more contestable due to the general probabilistic nature of OR and DR(GS). So, neither is well suited to making specific predictions, and of course Waltz has argued DR(GS) cannot at all. Yet efforts have still been attempted – with conflicting results. For example, on forecasting conflict specifically, Mearsheimer (2014) finds that his theory is a better predictor of nations' behaviour than DR(GS). Yet this is contradicted by Waltz (1979). And one

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<sup>79</sup> For example, see Sullivan (2005), Mearsheimer (2014), Mansfield (1992) and James (1995).

<sup>80</sup> Tests of balancing and buck-passing are among the most common means of testing OR and DR (Sullivan, 2005). For a selection of studies with competing conclusions see Lobell (2002), Duffield (1992), Brooks (1997), Schroeder (1994), Liff (2016), and Labs (1992).

analysis by Layne (1994) defines Realism so broadly (covering both OR and DR(GS) under one heading) that he arguably finds support for both.

### **Tests of *How* State Motivations Can Be Identified by Strategies**

Further to the above issues, it might be hoped that assessing state's preferences for coercive or cooperative strategies, supported by costly signals, would form a well-developed avenue to investigate inherent motivations. That is, Revisionist states are expected to favour increasingly coercive strategies, and will principally seek to use highly coercive measures, and Peaceful nations should embody the opposite. So, identifying such states would be facilitated by a clearly defined structure of increasingly cooperative and conflictual behaviours, a list of motivation-associated highly collaborative and coercive strategies, and ideally a forecast for how often such acts might be seen.

Yet all these matters remain poorly defined. Further, there are few practical tests of how states' motivations can be identified by their strategy choices, hindering using previous examples (Kim, 2016). Indeed, tests of strategy are much rarer than the thousands of analyses of power, and this forms a substantial gap in the literature.

### Undefined Terms and Uncertain and Overlapping Predictions

To commence with conceptual matters, the lack of well-defined strategies marking Revisionist and Peaceful states is possibly partially the result of Waltz's position that DR(GS) cannot predict specific behaviours. And since Motivational Realism is an offshoot of DR(GS), this may have discouraged authors more broadly from attempting to define preferred strategies for Peaceful and Revisionist states. Further, even for those behaviours that are defined, using these to assess motivation is hampered due to uncertain and overlapping predictions, with further issues affecting costly signals.

Regarding uncertainty, as noted previously, Motivational Realists make no predictions on how often Peaceful or aggressive states should arise. Hence, for a researcher seeking to identify such nations, there is no basis on which to expect that they should actually be observable. Further, Peaceful states may simply allow opportunities for action to pass them by, so any predicted behaviours simply may not arise. Also, a state may not be strong enough to act on its Revisionist aims, and so follow a prudent policy choosing behaviours and strategies that do not show its OR inclinations (Wang, 2004).

Further, Motivational Realists allow Revisionist and Peaceful states some degree of cooperation and coercion; hence, observing either or both does not of itself differentiate between them. Thus, an inherent aggressor may deceitfully engage in escalating cooperation and costly signals to some (undefined) degree to lull others into weakening their defences before striking (Kydd, 1997b; Tang, 2010a). Similarly, Mearsheimer notes that under OR various degrees of cooperation can occur even between adversaries (2014, pp. 33–53, 153–159). And Tang (2010a) observes that Peaceful states should escalate levels of coercion to ward off committed Revisionists.

Also, beyond noting the concerns of deceitful costly signals, Mearsheimer (2006) argues that uncertainty over future intentions renders such gestures valueless: why would nations cooperate when today's friend might become tomorrow's aggressor? This too argues against nations even bothering to conduct such signals: they expose themselves to risk for little gain.

#### Undefined Terms – Ad Hoc Strategies and Absent Escalation Frameworks

Perhaps as a reflection of these issues, the specific behaviours associated with Peaceful and Revisionist states remain underdefined, hindering identifying states' motivations (Liff, 2016; Tang, 2010a, p. 109). Further, even the recognition of patterns, or the development of costly signals or potentially other forms of "highly

cooperative/coercive” motivation-distinctive behaviours, is frustrated by the lack of an agreed framework of escalating conflictual and collaborative strategies.

That is, to identify Revisionist and Peaceful state patterns of increasing coercion and cooperation (or to propose motivation-distinctive behaviours) of course requires organising strategies in just such an order.

Yet rather than harnessing any such arrangement, in fact the proposition of Peaceful and Revisionist state behaviour has generally devolved to the subjective inclination of individual authors, idiosyncratically using various principles to link actions to motivations, such as the costly signal proposition for Peaceful states. While cogent, such approaches remain essentially ad hoc. This results in issues including the less cohesive proposition of strategies, greater potential for their motivation-associated nature to be contested, and an increased likelihood of conflicting assessments of the same evidence.

To address such issues, as noted by Liff (2016), a best practice approach is to use a standardised framework. This simply means an intellectual construct that organises ideas in a clearly defined way (i.e., a certain conceptual structure), allowing them to likewise be considered in a systematic (i.e., common and repeatable) manner. Applied to strategies, a useful framework would arrange these into a coherent and increasingly coercive-cooperative order, providing a *structure* upon which motivation-associated preferences (for distinctive actions or escalating patterns) could be proposed and tested for in a *structured way*.

Yet not only are such framework-based efforts rare, but even the few attempts to do so have been hampered by a lack of agreement on how cooperative and coercive behaviours can be defined and assessed. For example, Carlson (1995) notes that, regarding strategies, escalation in coercion (or cooperation) is broadly agreed to represent the notion of an increase in costs or benefits. Yet there is no consensus on how to quantify such increases. And in the absence of such measures, no widely settled and detailed continuum of escalating behaviours exists either.

Of course, broad efforts do appear, mainly based on classifying strategies around the means of influence they use, with diplomatic, economic, and military strategies representing most thinking in terms of increasing levels of cooperation and harm (Owsiak, 2014; Melin, 2015). But there has been little work to define how actions are more and less coercive or cooperative within these layers, or the principles by which other important behaviours (such as using paramilitary forces) are placed in relation to these categories. Such issues make the specification and identification of motivation-related strategies more difficult and increases the potential for contested analyses.

Further, the existing structured works to define characteristic strategies have focussed on militarised behaviours. This limits the use of available data and may skew test results, as such strategies apply more in tense situations where states may act more coercively than usual. It also misses a key normative purpose: identifying state motivations by broader behaviours *before* crises, rather than waiting until such events arise.

#### Conceptual and Practical Testing Efforts

The various issues described above could of course be addressed by the development of a broad (multi-strategy), structured, coercion-cooperation framework based on clearly defined principles. Then, Peaceful and Revisionist state preferences could be mapped upon it and tested against large datasets, to identify consistent patterns of behaviour and reduce the impact of outliers.

But despite this potential, such works have been lacking. Instead, the limited strategy-focussed efforts have mainly fallen into one of two categories.

Firstly, authors have focussed on defining broad expectations of behaviour, notably on issues of enhanced cooperation and costly signalling, but without conducting testing. Such efforts include those by Taliaferro (2000), Glaser (1994, 2010), and



Kydd (1997b); and generally describe the levels of cooperation that Peaceful states can seek to achieve or propose a handful of escalating ad hoc types of costly signals.

Distinctive among such efforts is Shiping Tang's *A Theory of Security Strategy for Our Time: Defensive Realism* (2010a). Tang provides perhaps the most developed, structured and hence valuable work describing the motivations and strategy preferences of Peaceful<sup>81</sup> and inherently aggressive/OR states. These are focussed respectively around increasingly cooperative behaviours and costly signals, and on gaining power at the expense of (i.e., by harming) other states, and doing so with highly aggressive behaviours. Tang maps these concepts to a self-developed continuum of more- and less-coercive strategies, providing an avenue to identify Revisionist and Peaceful states in the real world. While Tang's work is discussed in more detail in Chapter Three, his important contribution is ultimately constrained through remaining entirely conceptual. Further, Tang's hierarchy focusses on military strategies, mainly ignoring other state activities that could identify motives.

Secondly, many authors have not described expected strategies carefully, yet attempted to identify states' motivations in various situations regardless. Such efforts have typically focussed on qualitative single-nation case studies examining handfuls of behaviours, and associated coercion with OR and cooperation with DR(GS) (rather than Peaceful nations as such). While the results of such work might be considered a useful proxy for testing for OR versus DR(GLS) states, in fact substantial problems exist. Due to the limited datasets, that DR(GS) behaviours are largely undefined (making it unclear whether any identified Status Quo state should in fact be classed as a Peaceful nation), and that DR(GS) and OR both expect countries to engage in degrees of cooperation and coercion, such efforts have produced equivocal and conflicting results. Indeed, authors have simultaneously identified nations as being Revisionist or Status Quo depending on the views and evidence they used. For example, numerous works (including Rapkin & Thompson, 2003; Noguchi, 2011; de Castro, 2015; Lim, 2014; Topping, 2015; Chang, 2012; Li,

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<sup>81</sup> Tang refers to these as simply DR states, reflecting in fact Peaceful nations operating under a DR(GLS) world view of a reduced impact from relative gains.

2016; Mearsheimer, 2010b) have identified OR as best describing actions taken by states (notably China) in the SCS. Others, also focussing on China, find DR(GS) equally well explains such activities (Blazevic, 2012; Raditio, 2015) and better explains China's broader international behaviour (Rong, 2013; Tang, 2003, 2008).

Even fewer efforts have sought to deliberately identify Peaceful states, notably by costly signals. This may reflect the challenges that authors would face, as to judge such signals' existence and impact would require difficult access to senior decision makers, who may not represent their motivations honestly (Kim, 2016, pp. 5–7). Hence a paucity of efforts at testing such signals exist (Kim, 2016, p. 6), and those that do, focus on the credibility of *aggressive* costly signals where nations seek to demonstrate the sincerity of threats so that other states submit short of war (Post, 2019).<sup>82</sup>

Distinctive among the practical efforts is Russell Leng's *Interstate Crisis Behavior, 1816–1980: Realism Versus Reciprocity* (1993a). Leng conducts a structured investigation of thousands of interactions between 40 states engaged in Militarised Interstate Crises<sup>83</sup> aiming to identify whether Realism (in effect OR) or what he terms as “psychological” approaches better describe nations' behaviour. While Leng did not seek to test for Peaceful or Revisionist nations, he did identify patterns of behaviour that align with what would be expected from so-motivated states. Further, this work was based on a strategy framework from Goldstein (1992) that classifies diplomatic, economic and military actions into 61 different levels of increasing cooperation and coercion, and a bespoke military power model.

Leng's effort provides an important contribution to the strategy assessment field and is used as a point of comparison to this dissertation's analysis in Chapter Seven. However, his work has important limitations. By focussing on crises, this clearly has the potential to skew results. Also, Leng does not aim to propose or seek to identify

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<sup>82</sup> To avoid confusion, in this dissertation the term “costly signal” refers to cooperative measures unless otherwise specified.

<sup>83</sup> Situations where disputes had already led to the reciprocal demonstration, threat or use of force.

motivation-associated behaviours outside of such instances, limiting identifying intent outside of fairly dire circumstances. Further, Goldstein's framework does not support the ready consideration of actions outside its 61 scenarios, or the escalation level of actions within them. Finally, Leng's model of power is opaque, using simply "capability indicators ... drawn from the accounts of diplomatic historians" (1993a, p. 48).

### **Tests of *When States Will Be Aggressive*: Balance of Power and Power Transition**

Finally, various studies have attempted to examine whether power parity or disparity is more conducive to aggression. Such efforts are typically referred to as tests of power concentration and essentially relate to whether BOP or PTT is correct. It should be of no surprise that a definitive answer has not been obtained, not least noting the poorly defined nature of power used throughout Realism, and that neither theory proposes any "amount" of conflict that would prove it. But it is worth emphasising the diversity of results, reflecting issues of measuring military power, different datasets, means of counting wars, and interpretation.

So, as previously noted, Vasquez's (1998) meta-review of several thousand studies of power disparity and conflict found no compelling correlations, contrasting with the findings of others who found a positive relationship (Valeriano, 2009; Bell, 2017; Pearson et al., 1994). But in turn, proponents of PTT have found the same positive correlation for power *balance* and war (Organski & Kugler, 1980; Lemke, 2002, 2010; Liao, 2014; Rapkin & Thompson, 2003).

Further, yet others have found variable relationships, with PTT better describing the 20th century and BOP the 19th century, an outcome that contrasts with either's claim to have wide explanatory power. And other meta-reviews of the literature have found that neither BOP or PTT has compelling statistical evidence, or that the actual relationship between power concentration and war is a combination of both (Mansfield, 1992; James, 1995).

## **Section V: Achieving an Improved Approach Through the Structured Assessment of State Strategy Preferences**

It is clear that despite extensive efforts by hundreds of scholars across thousands of research efforts, great debate remains around Realism's answers to the questions of *if, how, and when*. However, such efforts are far from being in vain. Through analysing and building upon them, potentially more fruitful paths of investigation can be developed to support a novel, broadly applicable and strong test. And indeed, it is precisely this approach that is used in this dissertation.

In particular, it was recognised that existing approaches for testing *if* and *when* appeared largely exhausted. Due to DR(GS) and OR generating common predictions for violence, and ill-defined terms existing for general and specific strategies, let alone for military power, a new means of testing for *if* was required and a new, ideally structured means to define and measure military power.

However, Tang's identified alignment between OR and inherently Revisionist strategy preferences prompted several insights. Firstly, while Motivational Realists made no forecasts as to whether Revisionists (of either type) should predominate, if a state's actions are assumed to be motivated principally by the international system (in alignment with SR), then the presence of these patterns would allow for the testing of Mearsheimer's theory. The more that such behaviours were observable, the greater OR's explanatory power.

Secondly, if strategy preferences differentiable from OR were developed for DR(GS)-driven nations, this would then allow for comparative theory testing. After all, even with the defined Revisionist preferences, the presence or absence of OR versus DR(GS) motivated nations in any sample could not be identified until Status Quo states' preferences had too been described, to provide a point of comparison. Indeed, if an SR-aligned basis could also be developed for the predominance of Peaceful states (noting that none exists under Motivational Realism), and these

preferences too be differentiable from those predicted for DR(GS), then in fact three different visions for the nature of the world could be tested.

Further, if such preferences were to include the resort to war, describe how they would be affected by the balance of military power, be proposed against a structured framework of strategies, and be supported by an improved measure of military power, then all the key questions could be efficiently addressed together in a best practice way. That is, testing for theory-aligned and power-effected patterns of behaviour in peace and conflict would address *if* and *when* many nations are inclined to violence. Also, logically, any structurally driven motivations should equate to those shown by states inherently motivated in such ways. Hence, the defined strategy preferences would still be usable to address *how* to identify inherently Peaceful, Revisionist or Opportunistic states.

Finally, such an approach would also bring several other benefits, including that it would be novel, both due to using a structured approach and an improved measure of military power, but also in practical application. Various efforts have attempted to test DR(GS) and OR by defining general and specific foreign policy and strategy preferences. But this does not appear to have been attempted in terms of seeking patterns of behaviour – not least as these have previously not been well defined, perhaps due to Waltz's injunction and the lack of an appropriate framework.

Indeed, only one effort appears to use strategies to test core OR and DR behavioural predictions. This work, by Kim (2016), sought to test the potential for cooperative "reassurance" signals to work between states, and to use this to test whether Motivational Realism's core proposals (i.e., intentions matter and can be deduced to allow cooperation) were stronger than those of OR/DR(GS), where structure trumps intent. The outcomes of Kim's research are mixed. He finds that costly signals do matter to some degree, supporting the Motivational Realists. But mainly, aggressive signals matter more than reassuring ones, making the potential for genuine cooperation questionable, and in such instances the OR/DR(GS)

position is more correct (Kim 2016, pp. 1–27).<sup>84</sup> And even so, Kim’s work clearly does not seek to develop, or test, theory-specific structurally developed strategy preferences, let alone to test the specific questions of *if, how, and when*.

Also, by seeking patterns of behaviour, particularly across large datasets, this would reduce the focus on the debateable relevance of costly signals. It would also still harness using patterns of escalation and motivation-associated highly coercive and cooperative strategies as mutually reinforcing means to identify state-types.

Further, using patterns assists to circumvent debates on whether it is possible to predict nations’ general or specific foreign policies or associated strategies, and how matters such as balancing or buck-passing are even defined. This is because the broader coercive or cooperative *ways* in which nations seek objectives provide more insight into their motivations (and thus the explanatory power of various theories) than the *what* of the common ends that they pursue, such as security. For example, a state may engage in a foreign policy of balancing (however defined) by gaining allies. But if it does so through bullying other nations to join its cause, it is much more likely to be a Revisionist than one that seeks the same end by offering mutually beneficial cooperation. This point is noted by Tang who argues: “The fundamental difference between OR and DR<sup>85</sup> lies ... in their different preference over strategies even when [states] are moving toward the same set of goals, such as power, security, and prestige” (2010a, p. 29).

Finally, by proposing patterns of preferences rather than specific strategies, the approach does not seek to contradict Waltz’s assertion that DR cannot make specific forecasts. This makes such a methodology theory-compatible with Waltz’s work – an important virtue for strong testing.

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<sup>84</sup> In fact, Kim uses slightly different terminology, grouping OR with Waltz under general SR. When Kim refers to DR he uses the term to capture the concept of the potential for inter-state cooperation – aligning with what would here be considered a Motivational Realist inspired approach.

<sup>85</sup> In this quote, by OR and DR Tang refers to states with a Revisionist vice Peaceful world view.

## Defining a Structural Basis for DR(GLS) and DR(GS) Strategy Preferences

To realise these benefits, the basic tasks were to define, at least conceptually, the structural basis for Peaceful states' strategy preferences (ideally using assumptions common to the other two theories, to maintain parsimony and commensurability), and such preferences themselves for DR(GS). Also, with this done, a set of broad behavioural preferences would exist for DR(GLS), DR(GS), and OR states, providing a basis for the subsequent more detailed definition of testable strategy predictions. These tasks (and broad preferences) were achieved and defined as follows:

- *Peaceful/DR(GLS) States.* DR(GLS) describes a world operating under the theoretical assumptions that most states are satisfied with a "sufficient" degree of security (based on DR(GS)), and also see a reduced danger from relative gains. These considerations, in fact, logically provide a structural basis for Peaceful nations to predominate. That is, if most states subscribe to such views, then the benefits of cooperation are potentially so high, and risks so low, that most nations should seek it as a means to gain power. And logically they should do so as proposed for innately Peaceful states: by fairly persistently escalating cooperative strategies, seeking high-level collaboration. As such, inherently (or structurally driven) Peaceful nations are hereafter referred to as DR(GLS) states.
- *Opportunistic/DR(GS) States.* Despite Waltz's argument that DR(GS) cannot predict states' behaviours, ironically he proceeds to do just this in terms of patterns of strategy. So, Status Quo nations should prefer "mid-range" strategies that are neither too collaborative or conflictual, flexibly vary which they prefer to use, and be content to allow some opportunities to pass by. Reflecting this, such states are also referred to hereafter as Opportunistic nations.

This position arises from the DR(GS) assumptions of states being satisfied with a "sufficient" degree of security and thus manageable concerns over relative gains. So, Waltz notes that he expects states to use mixed strategies of

cooperation and coercion to pursue their goals, and these should not often involve overly cooperative or coercive acts (1971, pp. 461–470). This reflects that as nations will respond to strategies in various ways, mixed approaches are the most rational means for states to achieve their aims, via blends of tailored costs and benefits. However, the scope of coercion should be constrained to avoid major war (and, logically, even more minor military actions); and cooperation will be limited by states' sensitivity to relative gains (Waltz, 1979, p. 105). And of course, such nations will have spells of inactivity due to the lack of need to seize every opportunity.

- *Revisionist/OR States*. Such nations align with the preferences described previously, for persistently escalating and preferably high-level coercive strategies. These will arise from theoretical assumptions of nations having greater security sensitivity and associated high concerns over relative gains.

### **Original Contributions and Considerations**

The above descriptions contain three key novelties. Firstly, they define a structural basis for Peaceful states, with this described around assigning different theoretical weightings to the assumptions of security and relative gains already common to DR(GS) and OR. Secondly, they define behaviour preferences for DR(GS) nations. Thirdly, the various theories' different behaviour preferences are based on the notion of strategies being differentiable into highly cooperative, mid-range and highly coercive strategies.<sup>86</sup> While this may appear obvious, in fact behaviours are rarely so described, perhaps reflecting Waltz's injunction and the lack of a suitable framework. Yet, if the notion of an increasingly cooperative and coercive continuum of strategies is held in mind, then, logically, there must be relatively highly cooperative, mid-range, and highly coercive strategies within it. And based on their SR assumptions, DR(GLS), DR(GS) and OR states should favour the equivalent sections as the best means to rationally meet their respective objectives of gaining

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<sup>86</sup> Of note, the development of competing predictions also, of course, allows comparative rather than unilateral testing, and hence this is the approach pursued.



power without causing harm, maintaining power at minimal cost and risk, and gaining power rapidly at the expense of (i.e., by damaging) others.

When these predictions are added to the various mechanisms for strong testing described in Chapter One, many of the key causes of indeterminacy afflicting previous analyses are addressed. This hence resulted in the chosen methodology to conduct a novel, broadly applicable and strong test of *if how* and *when*. That is, a large dataset mixed focussed comparison and statistical-correlative analysis of state behaviour in resolving territorial disputes supported by an operational model of military power,<sup>87</sup> using the predictions as per Table 2.2 below (from Chapter One).

Of note such a test should only be conducted on (and the results be generalisable to) nations that meet the criteria for DR and OR to apply to them: Great Powers and “insulated” smaller nations. Also, the causes of states’ behaviour (inherent or structural) in any such a sample cannot be determined. However, logically, to the degree that OR, DR(GS), or DR(GLS) can claim strong explanatory power, then actions preferentially should be considered as being driven by structural forces – as indeed is the very basis of SR (and as noted in the relevant assumption in Table 1.1).

Table 2.2: Theory Predictions to Research Questions

	<u>DR(GS)BOP</u>	<u>DR(GS)PTT</u>	<u>DR(GLS)</u>	<u>OR(BOP)</u>	<u>OR(PTT)</u>
<u><i>If states are expected to be aggressive</i></u>	Rarely	Rarely	Almost never	Yes	Yes
<u><i>How should states engage</i></u>	Mid-Range Coercive & Cooperative Strategies	Mid-Range Coercive & Cooperative Strategies	Increasingly (Ideally Very) Cooperative Strategies	Increasingly (Ideally Very) Coercive Strategies	Increasingly (Ideally Very) Coercive Strategies
<u><i>When states are likely to initiate war</i></u>	Weak Correlation to Power Superiority	Weak Correlation to Power Parity	Almost Never	Strong Correlation to Power Superiority	Strong Correlation to Power Parity

<sup>87</sup> Certain further benefits from using territorial disputes are also discussed in Chapter Three.

## Conclusion

Further to the above, this chapter has conducted a broad literature review of Realism, notably OR and DR, together with PTT, BOP, and the works of the Motivational Realists. It has further examined key issues with existing testing approaches that have hampered the resolution of the key research queries.

In particular, the chapter commenced with a review of OR and DR, and demonstrated how, based on a handful of common assumptions, these two theories lead, at least notionally, to very different expectations for how states should behave – in particular on the key issue of whether nations should look to initiate wars. Further, it discussed how the work of the Motivational Realists enables, at least initially, the development of broader behavioural preferences for inherently Peaceful and inherently and structurally motivated Revisionist states. Finally, it demonstrated how OR and PTT provide a Realism-compatible means to assess different notions of when conflict should be most likely in terms of power conditions.

While these issues provide optimism for testing the various theories empirically, the chapter then reviewed how the key indeterminacy issues of uncertain and overlapping predictions, and undefined terms, have in fact vexed thousands of previous efforts to test the theories under investigation, including on the research questions. The result of these indeterminacies has been that a vast amount of notionally equally compelling yet contradictory answers exist.

For example, for *If*, evidence exists that states are both driven to aggression and moderation by structural forces, or inherent motivations, but with no answer being clear as both OR and DR notionally predict the same outcome. For *how*, differently motivated nations arguably have certain behavioural preferences, yet these cannot be distinguished from one another as no guidance exists, in particular, for the ways that Status Quo nations should behave. Finally, for *when*, poor measures of powers have indicated that BOP and/or PTT are concurrently correct, incorrect, or serve to

explain different outcomes in different periods of time – undermining their universal explanatory power.

However, informed by these limitations, the chapter outlined a methodology that promises to concurrently, strongly, and efficiently assess the various theories while answering *if*, *how*, and *when*: via the development of (and testing for) structured state strategy preferences. This methodology is not only promising but also novel for a variety of reasons, including that efforts to conduct strategy-led testing have been rare, that little work has been conducted to define DR preferences, and that best-practice structured frameworks are largely absent in the literature.

In turn, to lay the foundations to address these issues, this chapter has developed a number of original contributions relevant to IR theory. These include:

- proposing broad expected behavioural trends for inherent and structurally motivated Peaceful, Opportunistic and Revisionist states;
- identifying a structural basis for the existence and predominance of Peaceful nations; and
- defining the notion of differently motivated states' strategy preferences as being assignable to highly cooperative, "mid-range", and highly coercive sections of a suitably organised behavioural framework.

While the above methodology holds promise, as noted at the beginning of this chapter, to progress it requires three things. These are the further development of carefully defined (and hence testable) expected behaviours; the generation of an operational and measurable definition of military power; and then the assessment of these predictions on a dataset. To conduct the first task in a best practice way requires defining a detailed structured continuum of highly cooperative, mid-range, and highly coercive strategies and then proposing theory-specific strategy preferences against it. This work is now done in Chapter Three.

## Chapter Three – Developing Testable Patterns for State Behaviour in Territorial Disputes

As discussed in Chapter Two, this dissertation aims to address the research questions by testing for patterns of state strategy preferences in territorial disputes. To achieve this task in a best practice (i.e., structured) way, it is necessary to establish a framework against which patterns of behaviour can be proposed. Then, differentiable patterns must be developed for each theory under investigation to allow observational testing.

This chapter addresses these requirements in four parts. Firstly, to provide necessary background concepts that inform the development of the framework, it presents a more detailed description of various concepts of “strategies”. Secondly, it introduces a principles-based escalating strategy continuum, including highly cooperative, mid-range and highly coercive behaviours, against which theory specific preferences can be laid out. This represents a novel approach broadly applicable to assessing state behaviours in various scenarios. Thirdly, it defines DR(GS)BOP, DR(GS)PTT, DR(GLS), OR(BOP) and OR(PTT) associated general strategy preferences on the continuum. Fourthly, building on these preferences, it proposes more specific guidance on how nations motivated by these theories should behave in territorial disputes, and translates this into tools and concepts that assist in the conduct of the focussed comparison in Chapter Seven. The work the third and fourth sections is also novel and represents the most detailed description in the scholarly literature of such preferences to date.

### Section I: Defining Strategies

While strategies were touched on in Chapter Two, given the concept is the focus of the proposed research approach then further discussion is useful. The meaning of key terms and decisions is intended to be clear in the text, but for the interested reader, selected ***bold italicised*** issues are explained in more detail in Table 3.0.

## A Primary Meaning: Strategy as a Coherent Path of Action to Pursue a Set Goal

As an initial point, strategy is mainly defined as in Chapter Two: *a deliberate path of action that a state undertakes to utilise its means to influence other nations to achieve specific foreign policy ends*. In this definition, the term “strategy” refers to the concept of the deliberate path of action.

To explain the above in more detail, the path itself is practically executed by a state through a series of intentionally chosen cooperative or coercive individual actions, with these being efforts by it to influence (i.e., change) the way that nations behave with respect to a policy end it seeks (Holsti, 1994, pp. 117–129). While the specific goal sought will vary, it usually is the gaining of power (measured by increasing a state’s share of economic or military resources), as this supports the general Realist foreign policy ends of power acquisition and survival.

Under Realism, rational states (i.e., ones that are sensitive to costs and benefits) can influence each other by threatening costs or promising benefits – and so altering their respective calculus of how to behave on any particular issue. In turn, the “means” that nations have to affect this change are broadly considered<sup>88</sup> to be the diplomatic, economic and military resources available to them. As such, these terms can refer both to a type of resource and (as discussed below) a strategy using such means.

Finally, each “strategy process” of using actions to reach a goal can be understood as a pattern of behaviour initiation and reaction. In this process, nations ***exchange information*** on the costs and benefits they are willing to impose and accept, and so seek to most rationally achieve their aim (i.e., at minimum cost and maximum benefit).<sup>89</sup>

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<sup>88</sup> Based on the differences that these avenues bring to how states can affect the core Realist goal of survival. For various examples of, and views on, these means, further subsets, and how they are used in strategies, see Freedman (2013), Holsti (1995), Regan (2000) and Melin (2015).

<sup>89</sup> For a broad discussion of various patterns of influence attempts, assessments, and then determination of succeeding actions see Leng (1993a), particularly pp. 66–90.

### **A Secondary Meaning: Strategies as Primary Types of Behaviour**

The second main way the word “strategy” is used is to describe *particular paths* (i.e., types of strategy) that are defined by states’ ***principally preferred means*** when pursuing their goals. So, if a nation mainly relies on cooperative diplomatic means when it engages another nation, it can be described as using a cooperative diplomatic strategy, and so on for economic and military measures.

When the term “strategy” is used in this dissertation, which of the two meanings intended is meant to be clear from the context. For example, the second meaning was used when referring to the three key “grand strategy” types (diplomatic, economic and military) in Chapter Two.

Of note regarding grand strategies, within these three classes any number of subtypes exist, defined by their specific actions. So, a trade sanctions strategy could be a subset of economic strategies, and so on. Also, for the sake of clarity, any actions undertaken by a state that are associated with a grand strategy type by harnessing its means of effect are considered part of that grouping. For example, threats of armed action, while often sent by diplomatic channels, are considered part of militarised vice diplomatic strategies; and so on.

### **A Tertiary Meaning: Strategies as Recognised Approaches**

A “strategy” can also describe a ***recognised approach*** in the scholarly literature for general (such as balancing) and specific (such as “deterrence”) strategies, with these frequently comprised of elements from various grand strategies. Recognised approaches are not used further when describing or assessing behaviour due to various definitional issues, lack of state-type specificity, and since their descriptions can be captured in the coercive-cooperative framework approach used here.

## General Supporting Considerations

Under Realism, rational states influence one another by threatening costs or promising benefits. This produces a binary coercive-cooperative spectrum along which strategies can be *classified* based on their use of means that have increasing (diplomatic, economic and military) impact on the goal of survival. On this spectrum, purely confrontational strategies rely on causing harm, purely cooperative strategies rely on benefits, and mixed or engagement strategies, combine elements of both (Edelstein, 2002; Tang, 2010a, p. 20). Since states respond to costs and benefits, all nations use strategies that are somewhat mixed.

## **Identifying Strategies and Strategy-Relevant Actions**

States' strategies can be identified and defined (as coercive, cooperative, and so on) through considering their component actions (i.e., what is it that states actually *do*). However, nations can engage also in any number of international interactions not related to achieving specific goals and hence not being part of a strategy. The challenge thus is to identify *relevant* actions and reactions. This problem can be addressed by a two-part process that helps exclude irrelevant behaviours.

Firstly, better identifying relevant actions can be achieved by defining expected behaviours – for example, what military or diplomatic activities are logically and historically associated with territorial disputes. Practically, this is usefully conducted with reference to specific dataset(s) being investigated, to support analysis; and this is done in Section III and IV for both general scenarios and territorial disputes.

Secondly, once appropriate action types are defined, individual real-world instances of such (or similar) behaviours relevant to a particular strategy must be identified.

This can be done by seeking logical *explicit (direct) and implied (indirect) causal connections* between various actions and the object of a strategy. As is discussed further in Chapter Seven, as the objects under investigation in this dissertation are disputed territories, such connections were sought based on actions' *geographic proximity* and *contextual applicability* to such sites.

Table 3.0: Strategies – Expanded Key Definitions and Commentary

<b>Key Terms and Selected Commentary (Listed in the Order That They Appear in the Text)</b>
<p><b>Strategies as information exchanges.</b> The process of information exchange reflects that when State A attempts to influence State B; the latter may use its own strategies to resist such efforts (by raising costs for State A) or to seek greater rewards. Based on this information, State A considers its next steps, and so on, until a resolution is reached. Via this process nations aim to efficiently identify the correct balance of costs and benefits to achieve their goals.</p>
<p><b>Strategies as principally preferred means.</b> A strategy can be defined in terms of the main means it uses to pursue a goal. For example, if a nation mainly relies on cooperative diplomatic means when it engages another nation, it can be described as using a cooperative diplomatic strategy, and so on for economic and military measures. Of course, various means within and across grand strategies can be used in combination to achieve outcomes. And a state may pursue a particular strategy in one instance (such as a coercive military one), while in general favouring others.</p>
<p><b>Recognised approaches.</b> Recognised approaches refer to combinations of various individual grand and specific strategies which have an established standing in the scholarly literature. For example, recognised approaches include “deterrence”, which is a specific strategy that uses diplomatic elements, to communicate threats, and military ones, such as deploying armed forces, to deter aggression (Danilovic, 2002; Morgan, 2003). Similarly, reassurance strategies combine various cooperative elements to signal benign intent (Stein, 1991). Such approaches are not used reflecting the definitional issues with general strategies discussed in Chapter Two and that, for specific strategies, few have been associated with state-types; their definitions too are often contested (Elman, 1996); and various approaches (e.g., deterrence) can be used by all state-types, adding indeterminacy. Finally, selected state-type predictions that have been developed (principally by Tang (2010a, pp. 106–111)) can be subsumed in the approach used here: describing patterns of highly cooperative, middle range, or highly coercive strategies. So, a proposal that DR(GLS) nations prefer reassurance strategies is captured in a prediction for using escalating cooperative strategies.</p>
<p><b>Classifying strategies.</b> The process of classifying strategies simply refers to considering their position on a coercive-cooperative spectrum. Purely confrontational can be competitive, aiming to forestall growth in other nations’ power, or coercive, which threaten or impose costs (Edelstein, 2002). Coercive strategies are of particular interest as they are more applicable to specific disputes: they aim to raise the costs for another state such that they outweigh the benefits it seeks from the issue, causing it to acquiesce (Carlson, 1995).</p> <p>Purely cooperative strategies mainly occur where two (or more) nations work together to create greater mutual benefits than either could alone (Jervis, 1978) but do include “bribes” where nations provide aid or gifts in exchange for specific ends. Cooperation can also occur if nations provide aid not tied to goals, to build goodwill, but as this does not align with the definition of strategy used here (i.e., the pursuit of specific ends) it is not further considered.</p>



**Explicit (direct) and implied (indirect) causal connections.** Practically, once strategy-appropriate behaviour-types have been defined, individual instances of such (or similar) behaviours relevant to a particular strategy must be identified in a state's activities. This can be achieved by seeking a logical causal connection between the coercive or cooperative impact of an action and the goal of a nation's strategy. Such links can either have an explicit basis (such as a nation declaring that an action relates to some issue) or an implied one, such as a nation deploying its forces "for exercises" near a disputed territory – and thereby menacing it. Such considerations in turn identify direct and indirectly relevant actions (those with clear or implicit causal links, respectively), with both sensibly considered part of a state's strategy.

**Proximity and contextual applicability.** Ultimately, the basis of causal links must be defined by the analyst, with these usefully tailored to the strategy and dataset under consideration. With this dissertation's focus on territorial disputes, the key principles used are geographic proximity (i.e., an action's closeness to a disputed area) and contextual applicability (various forms of logical thematic connection, including by explicit statements). These principles are discussed in more detail in Chapter Seven, together with rules for applying them consistently to the SCS dataset.

## **Section II: A Two-Dimensional Principles-Based Continuum of Strategy Choices**

With strategies now better defined, it is possible to discuss how they can be used to identify whether states behave as forecast by the various theories, and thus which have more explanatory power. As noted by Waltz (1986) a key means of doing so is through seeking both patterns of behaviour that are perhaps not entirely unique but should be persistently visible if a model is correct, together with theory-specific distinctive behaviours that likely occur infrequently.

Either type of behaviour can be defined in idiosyncratic or structured terms. The former term here refers to the practice of authors developing (from a range of assorted principles) strategies that they propose as more associated with one theory than another. This includes, for example, many costly signals.<sup>90</sup>

While useful, due to their ad hoc and variable nature, idiosyncratic behaviours provide a weaker basis for identifying theory-characteristic strategies. A more robust and best practice means of doing so (and the one used here) is defining theory-associated general patterns and distinctive behaviours in a structured (i.e., common and repeatable way). The key requirement for this is that strategies be organised coherently, thereby providing the “structure” that allows the *structured* proposition of theory-relevant behaviours against such a framework.

### **Desirable Qualities in a Continuum**

The vital task then is developing the framework. To do this, certain concepts are clearly applicable and various desirable qualities can be identified. The binary nature of strategies as coercive or cooperative, and their ability to be arranged in

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<sup>90</sup> As noted in Chapter Two, such signals in particular have doubts about their utility and are generally not used here as a type of action that provides any special insight into motivation; however, certain costly signals are harnessed as examples of cooperative behaviours in the frameworks below.

escalating degree of impact on survival, provides a ready organising principle. Arranging strategies in this way also supports testing for the presence of the theories using the logic developed in Chapter Two. That is, since OR, DR(GS) and DR(GLS) motivated states should prefer increasingly (ideally highly) coercive, mid-range and increasingly (ideally highly) cooperative strategies respectively, strategies must be organised in this way to test for the presence of the behaviours.

Also, any continuum should ideally harness the full scope of strategies (i.e., diplomatic, economic and military) to maximise the use of data and enable identifying motivations in diverse situations. It should also support identifying granular differences between theories' preferred strategies, to help distinguish dissimilarities in patterns when the theories predict similar results.

Further, as a practical step, the continuum should rank strategies based on their *inherent* individual ability to harm or support survival rather than by proportionality. That is, for mixed strategies<sup>91</sup>, it is possible to assess their level of coercion or cooperation by considering what proportion of the overall approach is comprised of actions of either type. But a better framework focusses on inherent escalation, as once this is defined, tallies of actions can be more effectively weighted as part of proportional assessments, leading to richer analysis.

Finally, and particularly importantly, any continuum must also be based on clear, broadly applicable and well-defined principles. This reflects that a framework can only be a conceptual tool to allow states' endlessly varied real-world actions to be considered and placed in terms of their coercive or cooperative impact. So, no fixed ranked list of all such strategies is possible; instead they must be dynamically arranged as required. Using clear principles supports considering and ranking *all* of states' possible actions in a framework (or situation-specific variants) that provides increased transparency and inter-rater repeatability, in alignment with social science best practice, and makes compelling assessments of inherent escalation.

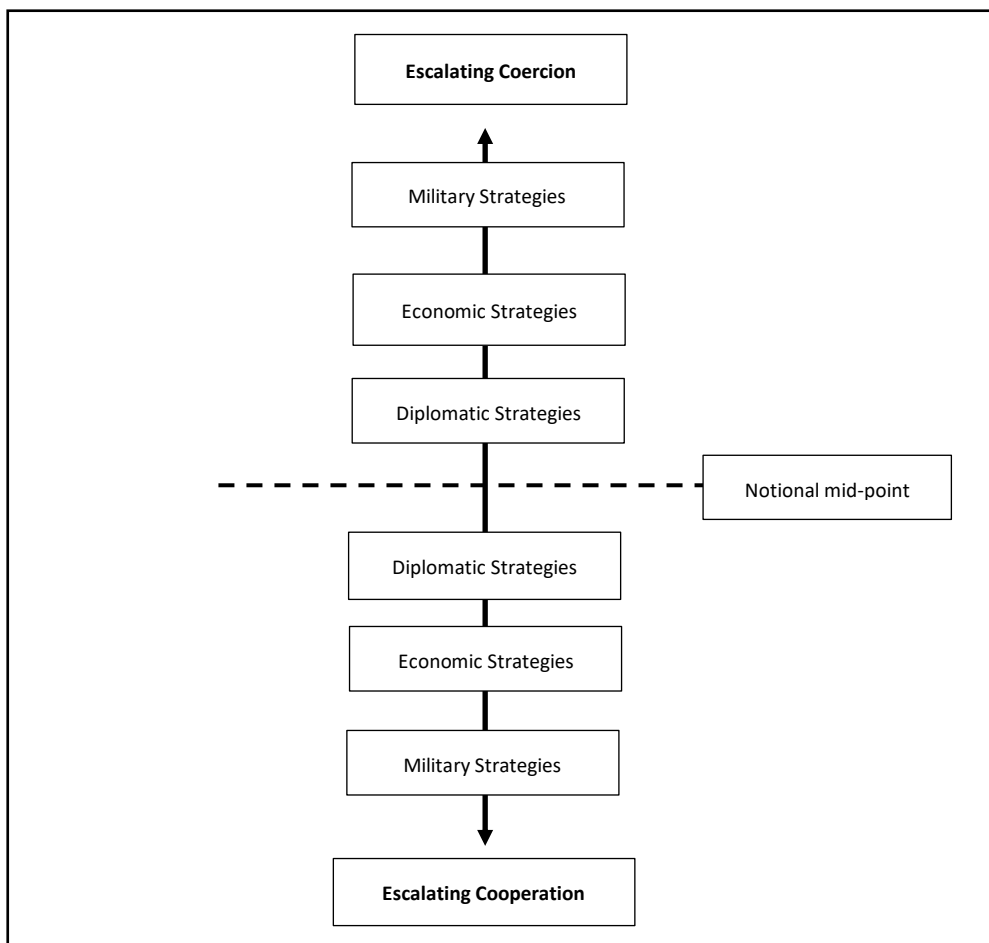
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<sup>91</sup> Recall that all the theories under investigation expect states to mainly use mixed strategies.

### Possibilities and Limitations with Existing One-Dimensional Approaches

Based on the above, a suitable type of framework might appear to be one where the grand strategies are organised along a binary (one-dimensional) axis in their degree of increasing coercive/cooperative impact based on their potential to impact state survival. An example of such an approach is illustrated below in [Figure 3.0](#). Such an approach is logical, and a range of frameworks have been proposed that seem to use this type of ordering, hence providing existing potentially fit-for-purpose continuums.<sup>92</sup> Most notable is work by Tang (2010a) that also overtly assigns OR and DR strategy preferences.

Figure 3.0: A One-Dimensional (Binary) Escalation Strategy Framework



<sup>92</sup> See Copeland (2000, pp. 36–41), Tang (2010a, p. 104) and Jones et al. (1996) for principally military-focussed strategies; and Melin (2015) for a broader set of strategies ranging from “verbal” through to diplomatic, economic, and military.

Unfortunately, neither this straightforward means of ordering of strategies or the utilisation of existing frameworks meets the needs of the dissertation. This reflects conceptual and practical limitations with both.

### **Constraints on Differentiating Strategies and Theory-Associated Preferences**

Notably, the coarse ordering above does not support the sensitive proposal of theory-associated preferences or defining “mid-range” strategies. On the first matter, as all state-types are forecast to use each grand grouping in some way, their theory-associated strategy preferences on this continuum overlap – leading to predictive indeterminacy. For example, OR states’ preference for major war, DR(GS) nations’ openness to minor violence, and DR(GLS) states’ potential to threaten military action to deter attack, all simply sit within the coercive military grand strategy. Secondly, despite being intuitively different in their level of impact, none of these strategies can be differentiated as more or less “mid-range” than another.

To address this, it is necessary to define within the grand strategies more specific types of actions with differing degrees of inherent escalation, and these can be used to propose the types of means that different state-types should logically prefer. But in order to do so, the notion of “impact on survival” is too imprecise a principle to differentiate actions in any detail. After all, it does not define how “impact” can be measured or quantified. This does not allow for the ordering of different means within the grand groupings, or the placing of additional groups such as paramilitary measures: where should these be placed among the grand types, and why?

### **Concerns with Existing Approaches**

This issue of providing for the more precise delineation of strategy types, especially via clearly defined principles, is also not addressed in existing frameworks. In practice such continuums are both rare and provide incomplete answers.

For example, several authors use hierarchies that notionally apply to multiple strategy types. Yet these tend to only roughly differentiate cooperative and confrontational strategies and then focus only on confrontational militarised behaviours, with these arranged in degrees of “toughness”, “hostility” or being “hardline”. But the principles that govern how such severity was determined are not defined. At most, by inference, more coercive strategies are those that initiate greater scales of violence (such as war), with more cooperative ones having greater proportions of collaborative behaviours, and/or using more “costly” diplomatic, economic and military means – but without defining how “cost” was determined.<sup>93</sup>

In turn, Carlson (1995) does define escalation, based on the principle of the scale and immediacy of the costs that a strategy imposes on the target.<sup>94</sup> Applied to military strategies, Carlson argues that the escalation ladder is comprised of threats (no immediate costs), demonstrations (prospect of immediate cost), use of force (immediate costs), and then war (large immediate cost). While Carlson’s work is an important development that provides the unspoken underpinnings to works by others,<sup>95</sup> it makes no attempt to differentiate the impact of *different* grand groups. More broadly, all the above continuums fail to address in detail the diplomatic or economic strategies that can identify motivations in the periods outside conflict. Indeed, while the analytical benefit of including wider strategies is well recognised,<sup>96</sup> it remains uncommon (Hensel, 2001; Owsiak, 2014; Melin, 2015).

Of course, some authors *have* developed broader hierarchies that address many grand strategy types, but these too have limitations. For example, Goldstein (1992) uses a non-principles-based approach (intuitive judgement) to organise 61 diplomatic, economic and militarised actions into a cooperation-coercion

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<sup>93</sup> See Jones et al. (1996), Copeland (2000, p. 36) and Tang (2010a, p. 104). The latter two take a proportional approach to identifying degrees of cooperation or coercion, although Tang also notes that acts become more reassuring (cooperative) as they become more costly (pp. 148–155).

<sup>94</sup> In fact, Carlson focusses on costs to the coercer, but this idea can also be applied to the target.

<sup>95</sup> Jones et al. (1996) define the same four levels of escalation in military strategies yet without explaining the underlying principles used to develop this ranking.

<sup>96</sup> For example, Hensel (2012) argues focussing on militarised efforts at resolving territorial disputes ignores the many more attempts by, and greater successes of, states to resolve them peacefully.

framework. Thus, it is essentially a fixed list that does not support ranking new actions or including new grand strategies. In turn Melin (2015) organises an escalating hierarchy of verbal, diplomatic, economic and military strategies based around the principle of the financial cost that they impose *to the coercer*. Yet this measure is unsuitable to assess behaviours that have their main impact in loss of life or financially intangible effects, or to address cooperative strategies.

### **An Improved Approach: Integrated Two-Dimensional Frameworks**

Further to the issues above, there exists a clear analytical gap for a well-defined and broadly applicable framework that can meet the needs defined at the beginning of this section. Various original conceptual and practical developments are required to meet this objective. These are discussed below, with key terms and assumptions ***bold italicised*** in the text and further elaborated on in [Table 3.1](#).

#### **Defining Survival**

As a first step, it is necessary to develop a more refined definition of survival that supports the quantification of costs and benefits and hence the ranking of diverse strategies. Hence, the following three-fold definition is here proposed: survival is a composite of a state maintaining its territorial integrity, political independence, and (as a new addition) protecting of the lives of its citizens. Including lives is logical, as without life the state cannot protect its borders or exist as an entity; normative, as countries claim to value their people's lives and will act in their defence; and useful, since as shown below, it supports ranking diverse strategies. Of note, this definition recognises that nations accept that sometimes lives must be lost, such as soldiers in war, to protect the other goals or save more lives. Also, using this definition to rank strategies by impact will be affected by which of the three components a regime chooses to privilege (Kadercan, 2013). But in this dissertation, territory is treated as the most important goal if a territorial dispute exists – an assumption validated in history by nations' willingness to sacrifice lives (and risk their own political destruction) to gain or defend territory.

## Defining Escalation: Materiality and Intensity

Using this definition, a strategy's overall level of escalation (i.e., its degree of imposed cost or benefit on survival) can be defined through the principles of materiality and intensity. These principles were drawn from various works in the scholarly literature together with the author's own considerations,<sup>97</sup> and offer a method to categorise and rank all strategy types.

The principle of **materiality**, used to rank grand strategies, refers to the directness (shortest causal path) and certainty of a strategy's *potential* impact on a target nation's survival. Increasingly material strategies (diplomatic, economic and then military) have a more direct and certain mechanism of impact on one or more of the three goals that comprise survival. Materiality also allows the placement of approaches such as paramilitary strategies. For example, as these involve the threat of armed force, they are more material than economic means but less so than military actions – which primarily rely on the threat of large-scale destruction.

While the grand strategies have different degrees of potential impact, the *actual* affect will vary with the practical action (i.e., means) chosen. This can be assessed by a composite factor referred to as **intensity** that considers the increasing scale (numerical quantity, such as in currency or lives), immediacy (proximity in time) and credibility (feasibility and rationality) of the effect of an action.

Considering intensity allows for ranking the escalatory impact of actions (and so means and strategies) within and across grand strategies: the more intense the act in one or more of its component elements, the higher the level of escalation. But to be used practically, the endless diversity of states' behaviours must be organised

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<sup>97</sup> In particular, Owsiak (2014) and Melin (2015) organise strategies in escalating orders of impact based on the financial scale of costs that they impose on the coerced. Separately, Carlson (1995) defines escalation in terms of the scale and immediacy of the costs that a strategy imposes, as do, implicitly Jones et al. (1996). Copeland (2000) and Tang (2010a) see scale and immediacy as a key measure of the most coercive strategy (war initiation) but do not state these bases. See Leng (1993a) for extended discussions of credibility.



into categories of increasing effect. Consideration of various scholarly works and datasets<sup>98</sup> showed that most actions can be organised into a common intensifying ordering of declaratory, legal/administrative and practical categories. Here, “declaratory” actions are statements that promise effects but do not enact them (aligning with “cheap talk”). In turn “administrative/legal” behaviours **increase the credibility** of a state’s position by formalising the intent for action but have little immediate impact on the target. Finally, “practical measures” have intensifying degrees of immediate actual effect.

### **Combining Materiality and Intensity**

The concepts described above can be integrated using the principle that any action’s level of escalation (and hence that of the strategy that uses it) is firstly derived from the intensity of the action as then moderated by its level of materiality. This is appropriate as, clearly, less material but practical impacts (such as imposing sanctions or causing diplomatic embarrassment) can affect a nation’s survival more than more material (e.g., military) but declaratory actions (such as announcements of equipment purchases).

To describe this practically, the lowest impact form of strategy is one that uses actions with the least intensity (declaratory) and materiality (diplomatic). Escalation increases with materiality (declaratory-economic, then declaratory-military). Once an intensity grouping “tops out” (such as declaratory military measures), impact continues to increase using the same pattern but from the next highest form of intensity (administrative/legal-diplomatic), and so on for practical measures.

Of note, these descriptions of actions and means also form a useful way to categorise synonymous types of strategies, such as “practical military” and the like,

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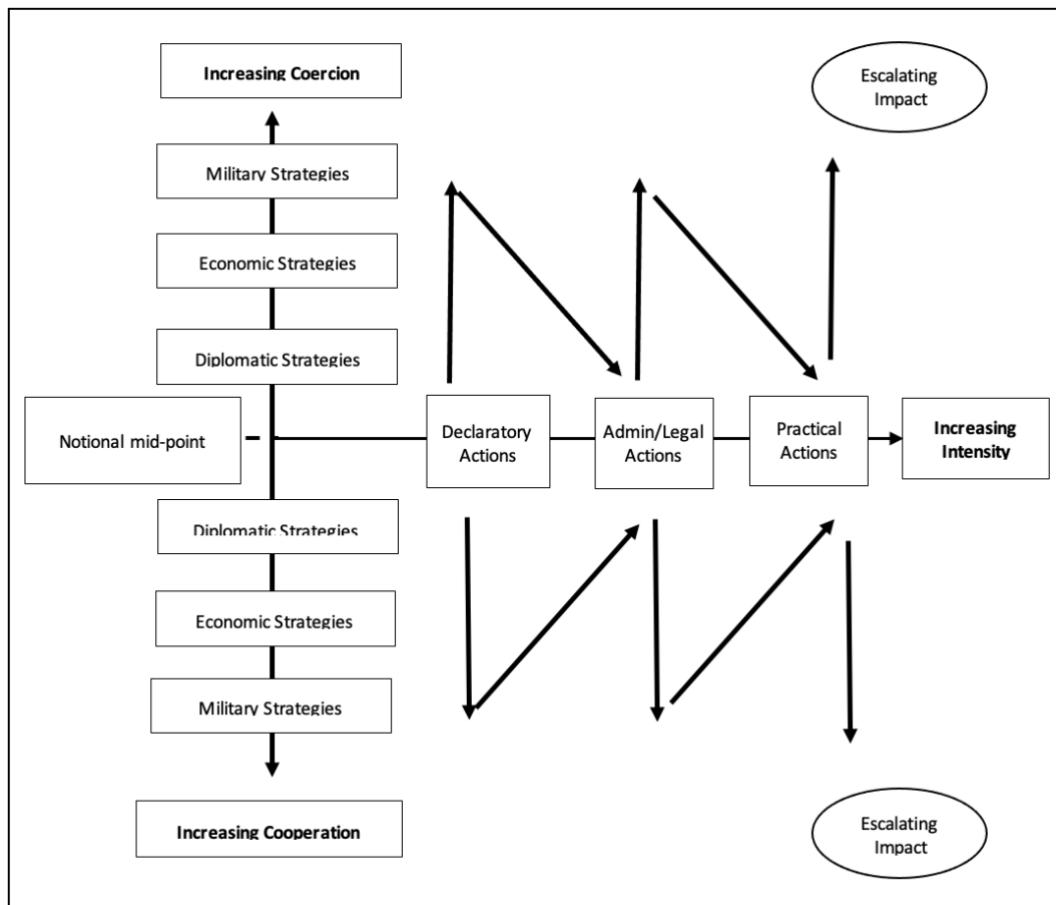
<sup>98</sup> Including the works noted in this chapter and the datasets used in this dissertation. The typology also reflects works such as Melin (2015) who notes differences between “verbal” (i.e., declaratory) actions and “diplomatic” (i.e., administrative/legal) ones, which involve more formal action by governments.

and this approach is used hereafter. Indeed, when comparing real-world actions against the strategy continuums proposed below, each real-world activity is assigned a “category rating” equivalent to the relevant category of action.

### A Two-Dimensional Representation of the Strategy Continuum

To represent the above concepts graphically, a two-dimensional continuum was used, with materiality and intensity on separate axes, and the escalation path shown by a sawtooth pattern. This basic form is shown in [Figure 3.1](#) below, with materiality on the vertical axis and intensity on the horizontal. A two-dimensional approach also brings representational benefits as it maximises the use of available space, allowing the cogent representation of preference differences.

Figure 3.1: A Two-Dimensional Strategy Framework



## Normal and Distinctive Actions: A Mechanism for Defining Mid-Range Strategies

While the above framework provides a cogent conceptual method, there is still the need to address practically similar actions that have a different real-world impact, such as declarations of exercises vice declarations of war. Although such behaviours could be differentiated by the scale of the impact, they would still be represented close together on the framework, hindering the representation of sensitive differences in state-type strategy preferences.

The alternative approach taken here is the concept of normal and distinctive strategies. Normal strategies are those behaviours that do not produce a strong coercive or cooperative effect on their target, while distinctive strategies are the same behaviours that do produce strong cooperative or coercive effects.

Using this definition, such strategies also meet the needs of differentiating escalating strategies into highly cooperative and coercive (i.e., distinctive) vice mid-range (normal) behaviours. This can be further appreciated by noting how normal and distinctive strategies can be conceptually considered, and graphically represented, in differentiable groups, as shown in [Figure 3.2](#) below.

Regarding this figure, the normal and distinctive forms of strategies used are essentially identical, reducing the burden of incorporating yet more types of behaviours. However, a key difference is that distinctive coercive military actions are differentiated firstly into reactive and proactive **coercive diplomacy** – where states credibly threaten or use non-lethal force to cause nations to cease behaviours, while still aiming to control the risk of further escalation to wider violence. Secondly, with more escalation, states may engage in **crisis initiation** – the threat or use of lethal violence to cause a **crisis** (a situation with a real risk of exploding into open conflict).

Of note, since coercive diplomacy and crisis initiation can be applied offensively (proactively) and defensively (reactively), identifying respective instances of each

requires detailed consideration of scenarios and initiators and responders of aggression. This dissertation's qualitative-quantitative approach supports making such judgements by investigating individual instances of state action in detail.

### Incorporating Normal and Distinctive Actions into the Strategy Continuum

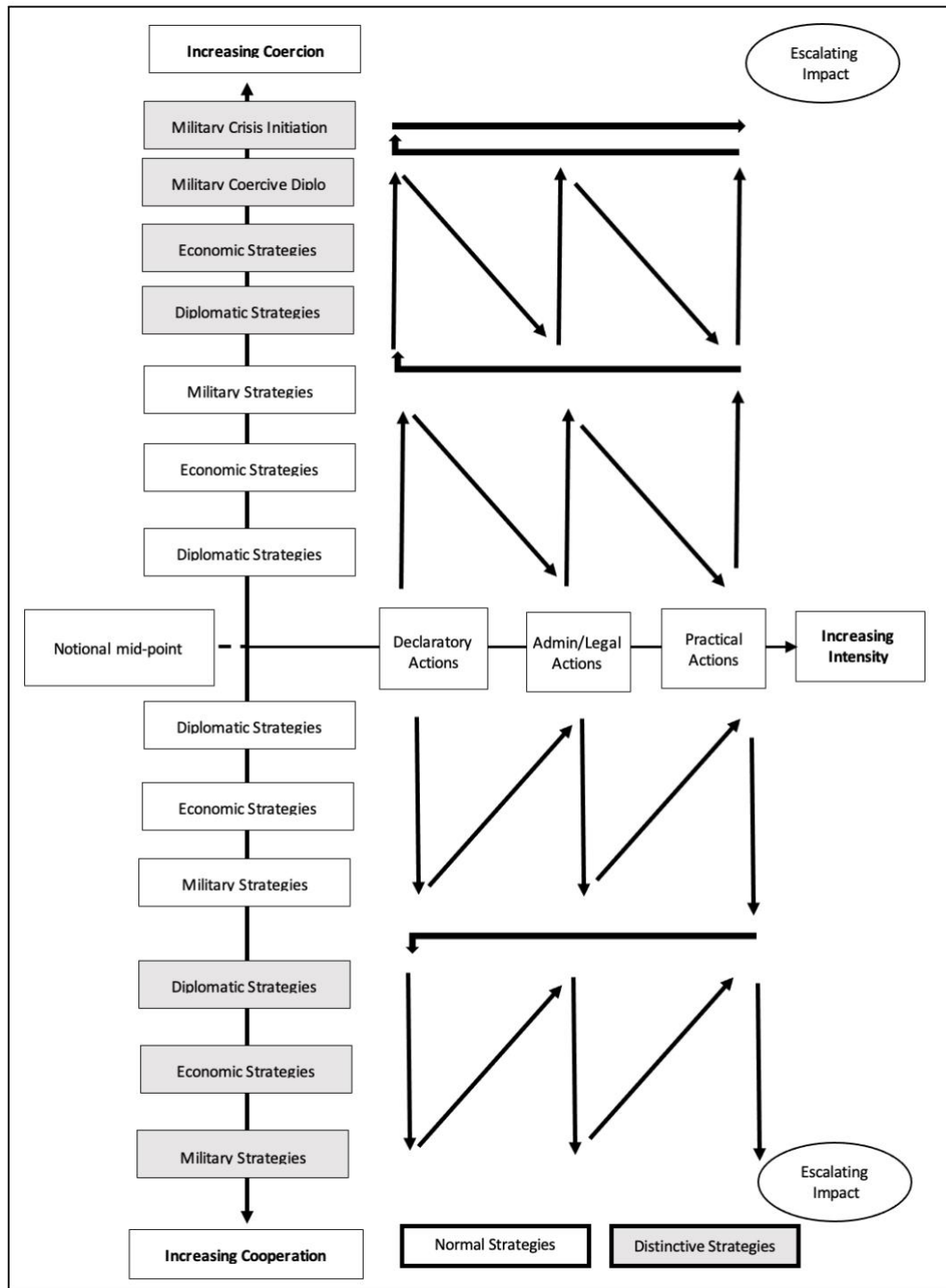
Conceptually, distinctive and normal strategies form largely identical sets of categories but with the lowest class of distinctive action (diplomatic declaratory) having more impact than the highest normal type (military practical). Thus, the escalating impact path is now comprised of two repeated sawtooths through the normal and then distinctive strategies, with an additional step separating coercive diplomacy vice crisis initiation due to the overtly lethal (and higher impact) nature of the latter. This path can be seen in [Figure 3.2](#), with normal and distinctive behaviours shown in white and grey respectively.

Of note, such a model clearly provides more strategy categories for offensive than defensive behaviours. This is considered both logically appropriate, noting the distinctly different natures of crisis initiation vice coercive diplomacy, and theoretically aligned with Realism. Regarding the latter, both OR and DR foresee a dangerous and potentially violent world, and so, inherently, a greater span of coercive strategies aligns with this.

### Classifying Normal and Distinctive Actions

It is still necessary to define how to ***classify actions as being normal vice distinctive***. Here, the principles used were considering an action's intensity, reviews of scholarly literature (to discern arguments on what might be considered normal vice distinctive) and observations of international law, norms and dyads' activity baselines (to achieve the same ends). These avenues help guide classifying actions with increased rigour. The author's judgement of such issues is captured in the examples in the tables and continuums below (such as [Figure 3.3](#) and [Table 3.2](#)).

Figure 3.2: An Expanded Two-Dimensional Strategy Framework



Note: Normal strategies equate to mid-range strategies.

Table 3.1: Strategy Continuum – Expanded Key Definitions and Commentary

Key Terms, Assumptions and Selected Commentary (Listed in the Order That They Appear in the Text)
<p><b>Materiality.</b> Materiality is used to dynamically rank grand strategies via the directness of their causal impact on survival. So, military measures are most material, by capturing territory, overthrowing regimes, and killing (or protecting) citizens via armed force. Economic avenues are less material, through less directly and less certainly causing the deaths (or flourishing) of citizenry via impoverishment (or enrichment), outcomes which only may, yet more indirectly, constrain political independence. Indeed as discussed by Pape (1997), there are various reasons why economic measures often fail to achieve desired results; including that nations can often circumvent sanctions and that leaders are insulated from their impact, preventing the constraining of political independence. Mearsheimer makes similar points (2014, pp. 90–96). Finally, diplomatic strategies are largely immaterial.</p> <p>Materiality also allows the placement of approaches such as paramilitary strategies. These seek to threaten (or impose) and promise (or realise) economic costs by using armed constabulary assets such as police or coastguard units to conduct enforcement actions (Yung &amp; McNulty, 2015). Due to their potential to kill, paramilitary measures are more material than economic means but less so than military actions which primarily rely on the threat of large-scale destruction.</p>
<p><b>Intensity.</b> Intensity is comprised of considerations of scale, immediacy, and credibility. Scale refers either to the numerical (usually financial) value of coercive and cooperative strategy impacts, when such measures exist, or to what broad effects may reasonably be inferred. So, the forgiveness of \$2 billion of debt is more cooperative than \$1 billion. In turn, a full-scale war intuitively threatens a far larger scale of death and destruction than does a minor raid.</p> <p>Immediacy refers to how proximate in time any impact upon a target is from when a strategy commences, with more immediate effects escalating the impact. This has both temporal and geographic aspects. So, a threatened hostile military exercise has lower impact than one that is underway or imminent, which raises an armed force’s potential to immediately harm the target. Likewise, an exercise conducted closer to a target has more immediacy than one conducted farther away. And in turn, an actual attack, which inflicts immediate costs, has the highest impact.</p> <p>Finally, credibility refers to whether threats or promises made by a state appear feasible (a question of technical capability) and rational (in terms of benefits outweighing costs). More credible strategies have higher intensity. So, a nation without atomic weapons cannot credibly threaten nuclear attack. And if it threatens war to defend distant and insignificant territories against much more capable nearby threats, this lacks credibility as the costs of defence outweigh the benefits of the territory – hence such claims may be dismissed as “cheap talk” (Kydd, 1997b).</p>

**Increasing credibility** Nations can improve credibility by making their threats more feasible, such as by deploying military forces, and/or acting in ways that increase their own costs if they do not follow-through. The latter include public pledges of action, called “irrevocable commitments”, that risk nation’s reputations if they do not act (Stein, 1991). Similarly, formalisation enhances credibility; for example, official maps showing a disputed territory as part of a nation, or forming state departments to oversee it, increases the reputational cost (a topic discussed further below) to the coercer of backing down.

**Coercive diplomacy.** Coercive diplomacy generally refers to reactive coercive diplomacy; a well-recognised essentially defensive concept where nations respond to other states’ actions with the credible threat or use of force, aiming to cause them to cease their behaviour (Levy, 2008, p. 539). This dissertation also introduces the notion of proactive coercive diplomacy – an offensive variant defined as the more aggressive threat or use of military force compared to normal day-to-day activities, while remaining deliberately short of being lethally violent. Such actions aim to test the will of an adversary while seeking to control the risk of escalation to a crisis or, within a crisis to maintain pressure while attempting to manage the risk of yet further escalation – although noting the risk remains very real. Of note the focus on the lack of lethal violence is also applied reactive coercive diplomacy and is not overtly recognised in most definitions. Of course, nations will still threaten the use of force without stating that they will aim to restrict themselves to non- or less-lethal measures, but will behave in this way when applying force.

**Crisis.** A crisis is defined as a situation judged to have a real risk of erupting into open conflict, with this being the state where nations deliberately and repeatedly engage in the destruction of adversary assets, notably military forces, as a key part of their strategy to achieve an end. Open conflicts include but are not limited to war.

**Crisis initiation.** This refers to the conduct of actions, including credible threats of lethal violence or such violence itself, to bring about a crisis. This is done with the aim of causing the target to comply (i.e., to back down in the dispute, and deliver the crisis initiator the object of its strategy) or to provide a pretext for an attack, or indeed be the attack itself, which will deliver the desired end (Copeland, 2000, pp. 42–43; Altman, 2017). Crisis initiation is generally offensive (and if done so, is hereafter referred to as proactive crisis initiation). This dissertation also introduces reactive crisis initiation, which are such behaviours when conducted in response to aggression.

**Classifying actions as normal or distinctive.** Intensity helps identify distinctive vice normal actions. So, military exercises a state declares as relevant to a territorial dispute but that are conducted distant from it, have limited immediate impact on the area, no real scale of effect, and little credibility to forcibly resolve the issue, and so may be considered normal. A major exercise in the area itself has greater impact across all the criteria and hence is likely irregular and risks crisis, and so is distinctive

Reviews of scholarly literature also aid in discerning normal and distinctive behaviour. So, one of the largest datasets of state behaviour (the Correlates of War Project), only considers interactions as militarised once a state explicitly threatens, displays or uses force against another; with the caveat (among others) that such actions are not routine (Jones et al., 1996). Hence behavioural baselines assist in determining what is, or is not, routine (normal) and hence distinctive. Thus, North Korea’s nuclear threats to the United States (US) and South Korea (Taylor, 2017) are so frequent as to be essentially normal, yet such actions by Russia would be major escalations.

Finally, observations of international law and norms support differentiating action types. For example, as discussed further below, under the United Nations Law of the Sea nations have exclusive economic rights within 370 km of their shores. So, if another nation subverts such rights, such actions can be considered distinctive.

## **Advantages and Constraints of the Two-Dimensional Integrated Approach**

In summary, the proposed approach offers notable advantages over previous works, reflecting its use of clearly defined principles, applicability to various grand strategy types, integration of normal and distinctive behaviours, and representational benefits. In addition, the principles used provide a robust method to define strategy escalation in IR (i.e., a means to measure cost and benefit) and do so in a parsimonious way. Of course, certain limitations are unavoidable. Notably, a variety of outcomes can be reached when ranking specific strategies; as such assessments are necessarily qualitative. This is particularly so for intensity; no attempt is made to weight the impact of scale, immediacy, and credibility, with an action's rating resulting from an analyst's appreciation of a mix of the criteria. However, the qualitative nature of strategies in terms of their effects makes strict measurements arguably impossible. For example, there is no means to quantify if the immediate and almost certain threat of 100 citizens dying is more or less coercive, and by how much, than the likely prospect of 1,000 dying in a month.

## **An Applied Framework of Strategies**

While the overall continuum above provides a useful starting point, to be practically useful for proposing and assessing theory-associated behaviours it must be populated with exemplars to form an applied framework.<sup>99</sup> This is necessary to both better demonstrate proposed theory scopes (rather than simply describing them in a practical vacuum) and to provide a common reference point for the analyst when seeking to identify patterns in historical data.

To this end, a general applied continuum is presented below that provides a tool applicable to a range of international interactions. Also since, when assessing strategies, relevant actions should be defined with regard to the issues under consideration, a territorial dispute focussed framework is provided in Section IV. Of

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<sup>99</sup> The ones used here are drawn from the various works and datasets mentioned in this section, such as Melin (2015) and Tang (2010a).



course, for any framework, the identification of real actions against any strategy type (to assign them a category rating) is a matter for the analyst's judgement.

### **An Applied General Framework**

The applied framework provided here mainly follows the pattern described previously; it is shown in [Figure 3.3](#) below in a "clean" format, with the escalation path added in [Figure 3.3A](#). This general framework provides 52 strategy categories, 28 coercive and 24 cooperative. A few elements of the continuum bear further description. The vertical axis focusses on diplomatic, economic and military grand strategies as these provide the broadest logical groupings applicable to the most situations.<sup>100</sup> Also, to ease presentation, the distinctive coercive militarised strategies are only labelled once in grey. Within this set, coercive diplomacy actions are left in regular text, with crisis initiation behaviours **bolded** on a dashed line.

Horizontally, the framework represents the usual range of increasing intensity in terms of declaratory, administrative/legal and practical actions. The practical behaviours each have two exemplars as an illustration of within-category (minor and major) intensification. This does not affect the overall escalation path.

Finally, the descriptions of the grand strategies and exemplar normal and distinctive strategies are in [Table 3.2](#), after the applied framework. While exemplars can be understood as both types of behaviours and individual actions, the examples in [Table 3.2](#) are typically written in the sense of the latter. Also, some distinctly cooperative behaviours align with costly signals, such as joint demilitarisation. This does not reflect an acceptance of their nature as a "costly signal",<sup>101</sup> rather that such an action is a highly cooperative act based on its materiality and intensity.

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<sup>100</sup> Many grand strategies can be proposed, let alone specific behaviours, but it is beyond this dissertation's scope to attempt to describe them all. Various descriptions can be found in Copeland (2000), Schweller (1999), Tang (2010a), Melin (2015), Carlson (1995), Owsiak (2014), Kydd (1997b, 2000), and Zartman and Faure (2005b).

<sup>101</sup> That is, an action providing greater evidence of state's peaceful bona fides due to being particularly costly for an aggressive nation.

Figure 3.3: An Applied General Strategy Framework

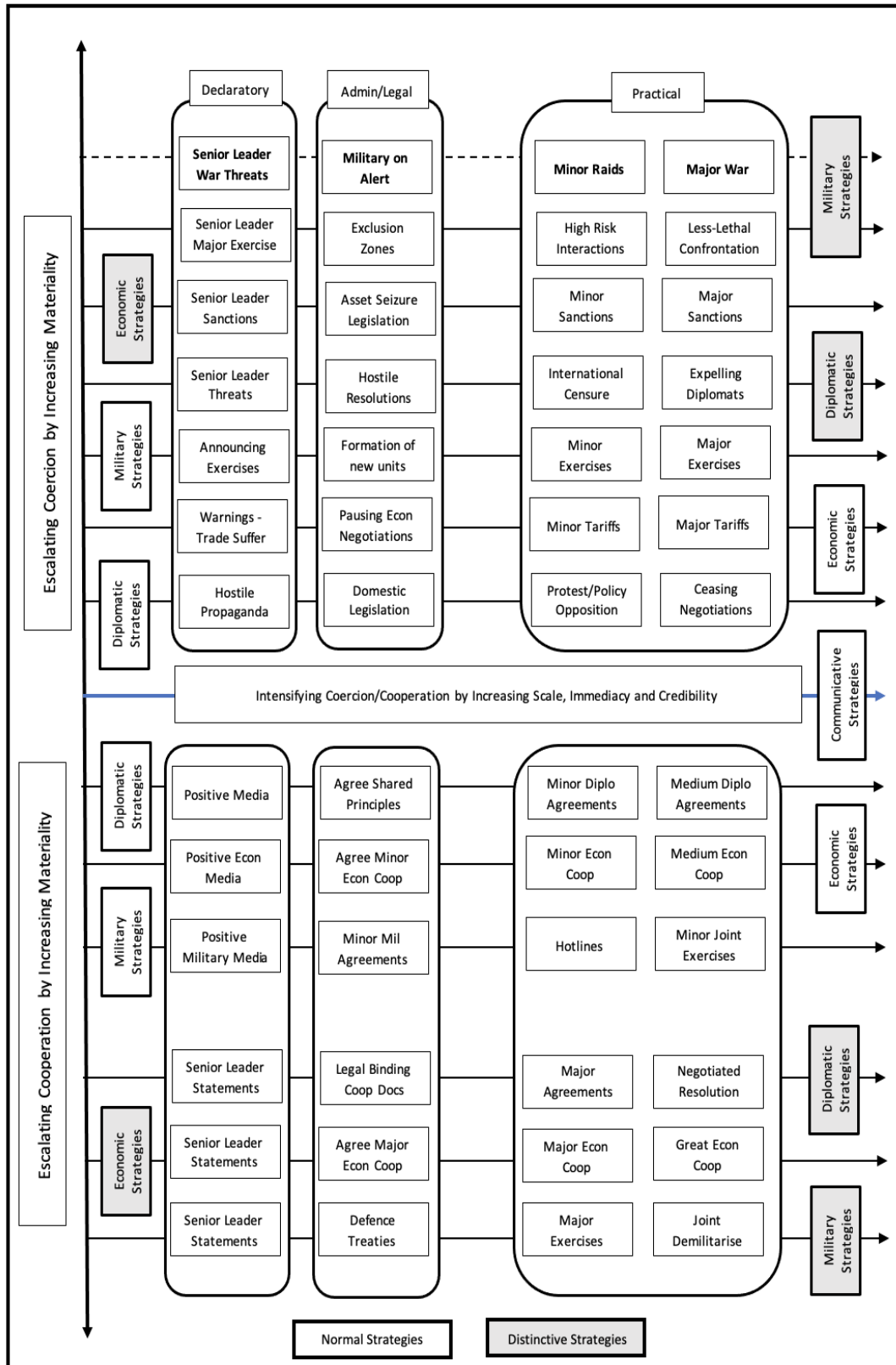


Figure 3.3A: An Applied General Strategy Framework with Escalation Path

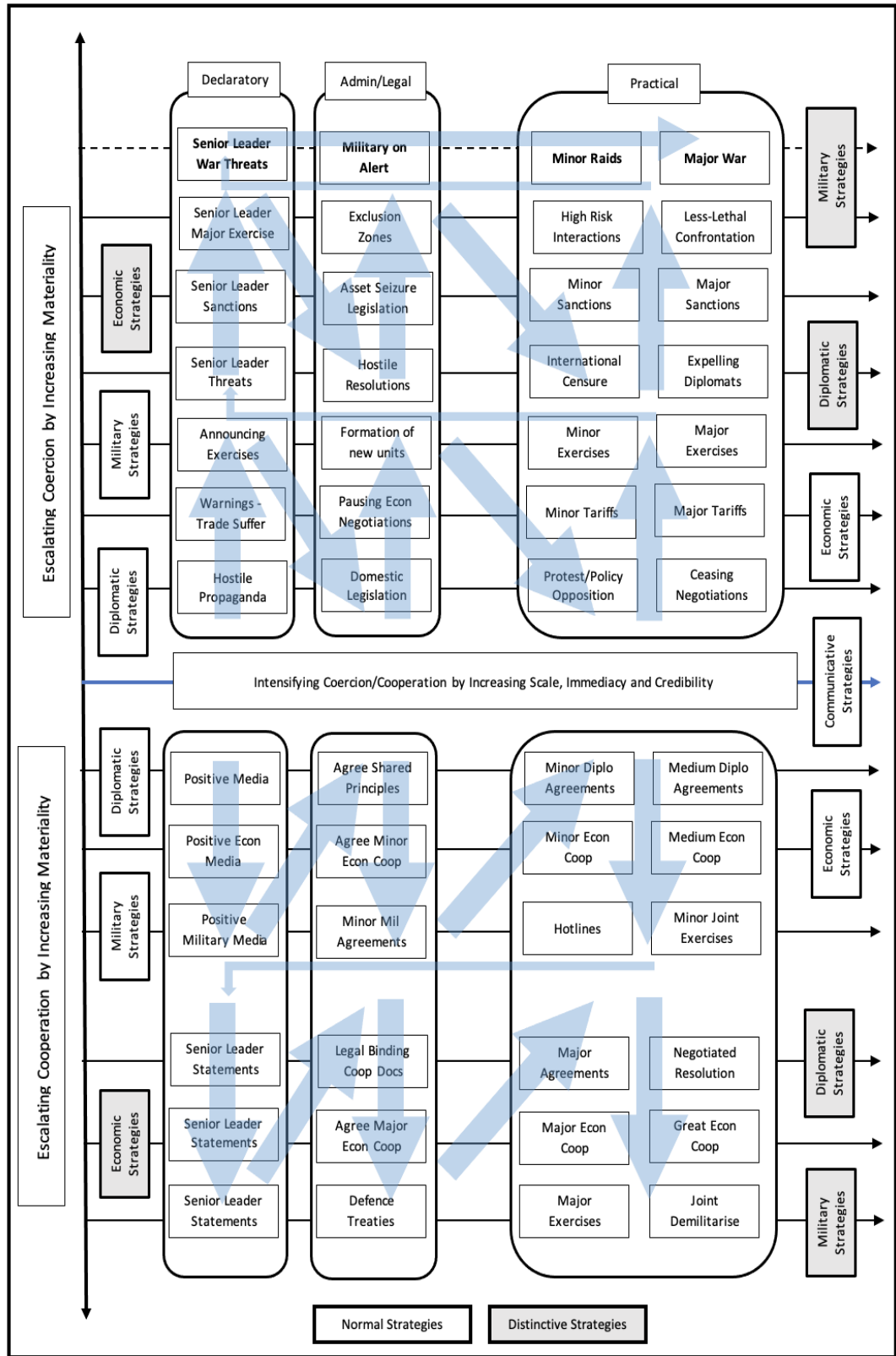


Table 3.2: Grand Strategies and Exemplar Actions

Grand Strategy Type	Description and Exemplars
<p><b>Communicative Strategies</b></p>	<p>While not formally part of the grand strategies, this category serves as a hinge between cooperative and coercive actions. It is comprised of actions that aim to communicate intent between states, or to persuade a target towards a particular path, but without threatening costs or benefits (Johnson et al., 2002, p. 8).</p> <p>Exemplars include diplomatic representations, meetings and media statements that <u>do not threaten costs or promise benefits</u>. It also includes any <u>acts of negotiation</u>, since these are simply mechanisms for contact that do not indicate the nature of the discussions held; although positive and negative statements about negotiations, or their actual outcomes, do have substantive effects listed below. All communicative strategies are treated as having no materiality, intensity, or escalation.</p>
<p><b>Coercive and Cooperative Diplomatic Strategies</b></p>	<p>These strategies seek to threaten or impose costs or benefits by threatening (or promoting) non-material interests, such as issues of reputation. As these do not threaten state survival, they hold the lowest rung in the escalation ladder.</p> <p><u>Increasingly coercive normal actions include (with their justifications):</u></p> <ul style="list-style-type: none"> <li>• <b>Declaratory:</b> hostile propaganda by officials or senior leaders, such as by media releases towards another state (low scale, immediacy, and credibility of harm).</li> <li>• <b>Administrative/Legal:</b> passing of motions or domestic legislation formalising a state’s adverse position on a dispute, (increased credibility).</li> <li>• <b>Practical:</b> intensifying impact from formal protests; through opposing the target’s policies in fora such as the UN; to breaking-off negotiations aimed at resolving the issue (escalating levels immediate, credible, and larger-scale harm).</li> </ul> <p><u>Increasingly coercive distinctive actions include:</u></p> <ul style="list-style-type: none"> <li>• <b>Declaratory:</b> senior leaders’ threats (Or such actions by their spokespersons, a consideration which applies to all distinctive actions), such as to expel diplomats or to seek formal international action against the target state (e.g., seek censure by the UN General Assembly) (low scale, immediacy and credibility of harm).</li> </ul>

<p><b>Coercive and Cooperative Diplomatic Strategies</b></p>	<ul style="list-style-type: none"> <li>• <b>Administrative/Legal:</b> resolutions by domestic legislative bodies urging punitive action; or a state beginning international legal action (increased credibility).</li> <li>• <b>Practical:</b> intensifying impact by censuring in international fora or expelling diplomats (escalating levels of immediate, credible, and larger-scale harm). Of note, an exceptional version of this class is breaking off diplomatic relations, but as this severs all formal contact and is often a prelude to, or result of, hostilities, it is not appropriate to include here.</li> </ul> <p><u>Increasingly <b>cooperative normal</b> actions include:</u></p> <ul style="list-style-type: none"> <li>• <b>Declaratory:</b> positive generic commentary by officials or senior leaders towards another state, peaceful ideals, or proposals or prospects for dispute resolution, such as by media releases, (low scale, immediacy, and credibility of harm).</li> <li>• <b>Administrative/Legal:</b> formal agreements aimed to promote resolutions, such as declarations or shared cooperative principles upon which to resolve a dispute, or developing a strategic partnership (increased credibility).</li> <li>• <b>Practical:</b> intensifying impact from formal agreement(s) which resolve larger matters, or increasing quantities of minor issues, in a dispute (such as procedural concerns) (escalating levels of immediate, credible, and larger-scale benefits).<sup>102</sup></li> </ul> <p><u>Increasingly <b>cooperative distinctive</b> actions include:</u></p> <ul style="list-style-type: none"> <li>• <b>Declaratory:</b> senior leaders' announcements of high confidence in a state's bona fides and the near-term resolution of a dispute (low scale, immediacy, and credibility of harm).</li> <li>• <b>Administrative/Legal:</b> legally binding cooperative documents (agreements) aimed at resolving an issue (increased credibility).</li> <li>• <b>Practical:</b> intensifying impact from agreements which resolve major dispute elements, to a formal total consensual resolution of an issue (escalating levels of immediate, credible, and larger-scale benefit).</li> </ul>
<p><b>Coercive and Cooperative Economic Strategies</b></p>	<p>These strategies seek to threaten (or impose) and promise (or realise) material economic costs and/or benefits on a state, to convince them to resolve a dispute on terms favourable to the initiator. By engaging the lowest rung of material effect, these behaviours have more impact on survival than diplomatic strategies.</p>

<sup>102</sup> Note for diplomacy, agreements are the exemplars for both administrative/legal and practical actions. This reflects that diplomacy's results are often such accords, whereas for other measures (such as economic actions), administrative agreements enable practical actions such as expanded trade.

<b>Coercive and Cooperative Economic Strategies</b>	<p><u>Increasingly <b>coercive normal</b> actions include:</u></p> <ul style="list-style-type: none"> <li>• <b>Declaratory:</b> warnings by officials or senior leaders that bilateral trade may suffer if the target does not accede to the coercer (low scale, immediacy, and credibility of harm).</li> <li>• <b>Administrative/Legal:</b> a state suspending its involvement with developing an agreement aimed at increasing trade with the target (increased credibility).</li> <li>• <b>Practical:</b> intensifying impact from imposing ever-larger tariffs to suspending cooperative economic arrangements (escalating levels of immediate, credible, and larger-scale harm).</li> </ul> <p><u>Increasingly <b>coercive distinctive</b> actions include:</u></p> <ul style="list-style-type: none"> <li>• <b>Declaratory:</b> senior leaders’ threats to impose sanctions (low scale, immediacy, and credibility of harm).</li> <li>• <b>Administrative/Legal:</b> passing of laws enabling seizure of assets on the coercer’s territory that are controlled by the target (increased credibility).</li> <li>• <b>Practical:</b> intensifying impact from ever-increasing bilateral or even international sanctions (escalating levels of immediate, credible, and larger-scale harm).</li> </ul> <p><u>Increasingly <b>cooperative normal</b> actions include:</u></p> <ul style="list-style-type: none"> <li>• <b>Declaratory:</b> positive commentary or proposals by officials or senior leaders on the prospects of low-level/generic economic cooperation (low scale, immediacy, and credibility of harm).</li> <li>• <b>Administrative/Legal:</b> formally agreeing to progress minor cooperative economic arrangements (increased credibility).</li> <li>• <b>Practical:</b> increasing level of actual economic cooperation (escalating levels of immediate, credible, and larger-scale benefit).</li> </ul> <p><u>Increasingly <b>cooperative distinctive</b> actions include:</u></p> <ul style="list-style-type: none"> <li>• <b>Declaratory:</b> senior leaders’ announcements of forthcoming major cooperative projects (low scale, immediacy, and credibility of harm).</li> <li>• <b>Administrative/Legal:</b> formally agreeing to major projects, such as joint oil-field developments (increased credibility).</li> <li>• <b>Practical:</b> increasing degrees of actual economic cooperation of a substantively higher scale than previously (escalating levels of immediate, credible, and larger-scale benefit).</li> </ul>
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<p style="text-align: center;"><b>Coercive and Cooperative Military Strategies</b></p>	<p>These strategies seek to threaten (or impose) and promise (or realise) rapid, certain, and violent costs or benefits using military forces. As the principal mechanism of impact is the threat or use of violence (to the point of destroying a state) these are considered the most material strategies.</p> <p><u>Increasingly <b>coercive normal</b> actions include:</u></p> <ul style="list-style-type: none"> <li>• <b>Declaratory:</b> routine announcements by officials or senior leaders of forthcoming exercises or military acquisitions (low scale, immediacy, and credibility of harm).</li> <li>• <b>Administrative/Legal:</b> forming/expanding a military unit specifically to address a particular issue, such as patrolling a disputed territory (increased credibility).</li> <li>• <b>Practical:</b> intensifying impact from ever larger-scale or more closely approaching exercises or patrols while not distinctly menacing a target, due to insufficient size or proximity (escalating levels of immediate, credible, and larger-scale harm).</li> </ul> <p><u>Increasingly <b>coercive distinctive</b> actions (proactive/reactive coercive diplomacy) include:</u></p> <ul style="list-style-type: none"> <li>• <b>Declaratory:</b> senior leaders’ announcements of the potential for violence to erupt, or of exercises of unprecedented scale or clearly offensive nature aimed at a particular target (low scale, immediacy, and credibility of harm).</li> <li>• <b>Administrative/Legal:</b> in contested territories, declare exclusion zones for military exercises (increased credibility).</li> <li>• <b>Practical:</b> intensifying impact from conducting ever-larger exercises in overtly threatening manners (e.g., via proximity); units using high risk interactions with other nations’ forces, such as risking collisions in games of “chicken”, or using less lethal (i.e., only potentially fatal) measures such as ramming or firing warning shots, (escalating levels of immediate, credible, and larger-scale harm).</li> </ul> <p><u>Increasingly <b>coercive distinctive</b> actions (proactive/reactive crisis initiation) include:</u></p> <ul style="list-style-type: none"> <li>• <b>Declaratory:</b> senior leaders’ direct threats to attack (low scale, immediacy, and credibility of harm).</li> <li>• <b>Administrative/Legal:</b> calling-up of reserves or placing militaries on high alert (increased credibility).</li> <li>• <b>Practical:</b> intensifying impact from actual military operations against another state, increasing from small raids to major wars (escalating levels of immediate, credible, and larger-scale harm).</li> </ul>
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<p><b>Coercive and Cooperative Military Strategies</b></p>	<p><u>Increasingly <b>cooperative normal</b> actions include:</u></p> <ul style="list-style-type: none"> <li>• <b>Declaratory:</b> positive commentary or proposals by officials or senior leaders on prospects of generic low-level bilateral military cooperation (low scale, immediacy, and credibility of harm).</li> <li>• <b>Administrative/Legal:</b> procedural agreements for interaction, such as Memorandums of Understanding (increased credibility).</li> <li>• <b>Practical:</b> intensifying actual military cooperation, increasing from so-called confidence building measures,<sup>103</sup> such as military “hotlines” to prevent misunderstandings, to engaging in minor<sup>104</sup> joint exercises (escalating levels of immediate, credible, and larger-scale benefit).</li> </ul> <p><u>Increasingly <b>cooperative distinctive</b> actions include:</u></p> <ul style="list-style-type: none"> <li>• <b>Declaratory:</b> senior leaders’ announcements of forthcoming major defence arrangements such as treaties (low scale, immediacy, and credibility of harm).</li> <li>• <b>Administrative/Legal:</b> formally agreeing to defence treaties or non-aggression pacts (increased credibility).</li> <li>• <b>Practical:</b> intensifying actual military cooperation of a substantively higher nature than before, with impact heightening with immediacy of danger that cooperation averts. These ranges from major and deeply integrated exercises and mutual demilitarisation of borders, to direct military support in armed conflicts (escalating levels of immediate, credible, and larger-scale benefit).</li> </ul>
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<sup>103</sup> For a broader discussion of such measures see Yasmeeen (1994).

<sup>104</sup> Such as with small numbers of units and having simple objectives that limit exposure to key operational procedures and tactics.



## Investigating Structural Realism Using the Continuum

The framework can now be used to develop theory-characteristic “rare and distinctive” behaviours and “persistent and common” patterns of actions for DR(GS)BOP, DR(GS)PTT, DR(GLS), OR(BOP) and OR(PTT).<sup>105</sup> This is done by describing for each a preferred strategy *scope* and *direction*, terms that are defined below. Through considering a nation’s actions against these criteria, it should be possible to identify its *state-type* – that is, which theory best describes its motivations.

### **Scope**

By *scope* is meant, of the various strategies available, the range that should be preferred by each state-type as it pursues its goals. Through comparing different scopes, theory-specific distinctive strategies can be identified. So, OR states should prefer major wars of aggression in general. Thus, these are included in their scope. In turn, these should be avoided by DR(GS/GLS) nations and so are excluded from their scope. Hence, major wars become a distinctive OR-associated strategy – and one that should be observed rarely, noting that Revisionists should first prefer other options such as blackmail, and even then only attack at opportune moments.<sup>106</sup>

This concept of scope requires three brief caveats. Firstly, preferred scopes do not prevent nations from becoming involved in other strategies unwillingly, as even Peaceful states may be dragged into war if attacked. Secondly, even for seemingly theory-unique scope elements, different state-types might engage in these as outlier behaviours, noting that DR and OR both expect some “anomalous” conduct. Thirdly, preferred scopes may not apply to all states’ objectives. So threats of war may be unsuited (and hence not applied) to goals such as trade treaties.

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<sup>105</sup> As noted in Chapter One, this technique supports stronger testing.

<sup>106</sup> An outcome confirmed empirically: major wars are rare (Jones et al., 1996).

## Direction

In turn, *direction* refers to, within each scope, whether a state-type should prefer principally coercive or cooperative strategies and to what level of escalation (distinctive or normal); and as part of this whether it should seek to actively escalate collaboration or confrontation, including how it should respond to other nations' coercive or cooperative actions. This allows for the identification of theory-characteristic common patterns. So, noting Mearsheimer's prescriptions, OR states should actively threaten conflict (i.e., distinctive coercion) at opportune moments and escalate to attack if warnings fail. In turn, DR(GLS) states should initiate and escalate to distinctive cooperation with trusted partners, action that should be avoided by OR and DR(GS) states.

Here, three further caveats are necessary. Firstly, scope and direction are used to describe state-types' preferences for *strategies in general* for strong coercion, cooperation or neither, as they pursue particular ends. But it is not used to suggest what ends they may seek or to predict preferences for *general or recognised strategies* such as balancing, buck-passing or deterrence. Also, the specific strategies listed in any framework are, of course, only exemplars. Hence any scope and direction preferences developed upon them encompass, but do not comprise firm predictions for, what exact real-world behaviours state-types will conduct.

Secondly, state-types can be expected to show flexibility in pursuing direction, reflecting changing circumstances and their appreciation for how to best achieve goals. For example, while OR states are predicted to seek persistent coercive escalation, they may go from distinctive diplomatic to militarised threats but skip sanctions, to safeguard their trade with the target while maximising pressure increase. Similarly, while "persistent" OR escalation is expected, there may be long periods of inaction, including due to the state simply becoming distracted by other priorities (Huth & Allee, 2003, pp. 48–53).

Thirdly, the direction of responses for state-types (in terms of their reactions to other nations' behaviours) are predictions for *as and when they choose to react*. Often states may not react at all for any number of reasons, such as misinterpreting others' actions or deliberate snubbing, and this generally provides no information.<sup>107</sup> But when countries do react, this can be used to identify motivations.

### **Combining Scope and Direction in Large Dataset Qualitative Analysis**

Once theory scope and directions are defined, the breadth of a nation's actions in pursuing a particular strategy can be considered against them to propose its state-type. In fact, these means provide complementary ways to discern motivation: by seeking theory-distinctive elements of states' preferred scope (such as OR-only strategies), or, when scopes overlap, by examining their direction.

To conduct such an assessment, state behaviours, and trends in them, are considered and qualitatively integrated by the analyst's judgement to propose a best-fit against the predictions. To support a structured approach, guidelines for assessing actions consistently are discussed in Chapter Seven.

Of note, while the diversity of states' behaviours raises the potential for contradictory behaviours or disputable analyses, states' preferred patterns should still be clear in the large dataset qualitative-quantitative approach used here – at least if the theories have strong predictive power. This reflects that large datasets reduce the impact of issues such as outliers, or state-types engaging in overlapping directions for periods. Also, identifying characteristic behaviours is enabled by the qualitative consideration of actions (as is the approach used here) as this allows states' actions to be considered in context – such as whether a state initiated aggressive behaviours in response to major provocation. Being mindful of context allows such incidents to be treated with caution when assessing motivations.

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<sup>107</sup> Although, as discussed in Chapter Seven, in some scenarios a lack of a reaction can provide insight.

Further to the above, to enable state-type testing, proposed scopes and direction for each theory are now defined in the next section. This work is supported by a number of additional key concepts and assumptions briefly discussed below:

- *Assumption of common interpretation.* All nations are considered to assess the cooperative or coercive impact of strategies in a way essentially identical to the framework in Figure 3.3. This reflects a similar inherent assumption by Realism noted in Chapter Two, as otherwise nations could not rationally conduct international behaviour. So, there must be some common understanding of the impact of strategies (actions), otherwise the assessment of costs and benefits becomes impossible.
- *Cooperative, confrontational, and mixed or engagement Strategies.* Cooperative strategies (also called reassurance strategies) are entirely in the cooperative part of the continuum, and likewise for confrontational methodologies. Efforts using both are referred to as mixed or engagement strategies (Edelstein, 2002; Tang, 2010a, p. 102).
- *Costs of distinctive strategies.* Differently motivated rational states should display varying appetites for promising great benefits or threatening great harm in strategies. This reflects that while offering tremendous amounts of either may achieve goals quickly, and so be valuable to nations with short time horizons, doing so potentially incurs unnecessary costs. For example, it may cause otherwise avoidable war (noting even Mearsheimer promotes blackmail over costly violence) or retribution in kind for lesser coercive acts; or may offer enormous relative gains benefits to the target. For nations with long time horizons, a slower information exchange allows more efficient fine-tuning.
- *Escalation and de-escalation.* Escalation occurs when nations repeatedly initiate or react to other's behaviours with escalating or intensified actions, with de-escalation the reverse. This applies to coercion or cooperation.

- *Reputation.* While all Realist nations' principal goal is survival, they also seek to develop and protect their reputations for normative (e.g., their leaders' personal interests) and rational reasons (Holsti, 1995, p. 107). For the latter, a reputation for resolve (i.e., withstanding pressure) is valuable as weak nations should encounter greater and more frequent threats (Sechser, 2010). Logically this can drive escalation, as it creates incentive for nations to respond to coercion with coercion (rather than "submitting" via cooperation) to avoid further coercion now or in the future. Reliability is important, in the sense of following-through on threats and promises and behaving in accordance with international laws and norms, as unreliable nations will find few partners (Leng, 1993b; Gent & Shannon, 2014). And countries seen as innately aggressive are more likely to have coalitions form against them, thus reputations for moderate and peaceable behaviour are valuable (Chan, 2004a).
- *Restraint.* Restraint is when nations do not respond to others' coercive actions or respond with acts that are matched or lower in coercive level, or even overtly cooperative. This may occur in cooperation too – that is, states may restrain collaboration.

### **Section III: General Strategy Preferences under Structural Realism**

This section defines the key general strategy preferences for the theories under consideration in terms of scope and direction for the continuum shown in [Figure 3.3](#). These preferences, then, should be applicable to most scenarios, and are later used to build the situation-specific differences for state-types in territorial disputes.

This section also describes in detail how the conclusions for general preferences were reached. This meets the strong testing guidance for carefully explaining how predictions are developed from core tenets. In summary, predictions were generated by building upon the various theories' behavioural drivers as discussed in

Chapter Two, and also using selected works noted there that define applicable broad concepts and recognised strategy approaches for the various state-types. These “inputs” are now contained within the overall “output” of defining scope and direction preferences for the theories.

Notable among the works drawn on is Tang’s *A Theory of Security Strategy for Our Time: Defensive Realism* (2010a). This offers, perhaps, the most detailed analysis of OR and DR(GLS) strategy preferences. In summary, Tang argues that, noting OR states’ need to maximise relative power, they must always seek to do so at other nations’ expense; or as he puts it, a Revisionist “is a state that seeks security by intentionally harming others” (2010a, p. 31). Hence, they must always prefer coercive strategies, in particular offensive military ones, and effectively never engage in cooperation (Tang, 2010a, pp. 29–30, 106–127). In turn, DR(GLS) states almost always attempt escalating cooperative strategies, as resorting to coercion (except in extreme circumstances) harms their bona fides and chances to gain power through cooperation with like-minded nations. And while for such states coercion is possible, it should be defensive and deterrent, not offensive (Tang, 2010a, pp. 99–127).

Tang develops these drivers into absolute differences in strategy preferences, which are graphically displayed in his own militarised continuum organised by whether strategies are more “hard-line” (coercive) or “soft-line” (cooperative) (2010a, p. 104). In this framework, the only strategy overlap between OR and DR(GLS) states is their common potential to utilise deterrence.

Tang’s work, while very valuable, has important limitations. These include that it focusses almost entirely on military strategies, largely omitting discussion of more common diplomatic and economic approaches, or how various state-types might differently employ these. Further, it does not address Waltz’s DR and pays scant attention to PTT. Finally, his work does not address subtleties in the theories’ preferences, such as Revisionists’ potential to engage in various cooperative acts as a means of deceitful costly signalling or simply elements of mixed strategies.

In contrast, the below descriptions represent a significant conceptual advance on all previous works. Differences *and* similarities are identified in scope and direction across all strategy groupings and as affected by balances of power, including for states' responses to other nations' actions, and the constancy of behaviours.

Finally, communicative strategies are expected to be used by all states regardless of motivation. Being a common factor, they are not further discussed.

### **Offensive Realism, Balance of Power Theory and Power Transition Theory**

In overview, the scope of OR states' preferences encompass the entire coercive end of the continuum and only limited elements of cooperation – with intensity decreasing as the level of collaboration escalates. A relentlessly coercive direction is predicted, aiming to constantly initiate actions at, or rapidly escalate to, the highest level available under the balance of power. Also, OR states should respond with escalating coercion to most gestures from nations.

#### **Scope**

The entire coercive spectrum sits within OR's scope, noting Mearsheimer's observation that war (i.e., the most coercive strategy) is the main means by which states should seek to gain power (2014, pp. 138–165). This reflects the imperative to gain power quickly, requiring the most coercive available strategies.

There is little scope for cooperation, with the acceptable intensity decreasing as the level of collaboration escalates. Low-level normal diplomatic cooperation is possible, to maintain communication and Revisionists' reputations as reasonable actors.<sup>108</sup> This can include various formulaic agreements, likely with no intent to realise cooperation. But any *practical* normal economic collaboration is constrained

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<sup>108</sup> Mearsheimer (2014) notes that Revisionists can cooperate more strongly in the face of imminent danger from a greater threat, or to support one nation to make it a more attractive target for another.

by concerns over relative gains, with this being even more so for military activities; and yet further reduced for any practical distinctive cooperation. However, Revisionists may engage in cooperative declaratory and even administrative/legal actions across all the grand strategies, including distinctive ones, as a part of mixed strategies to efficiently gain their ends and as deceitful “costly signals”. Further, Revisionists will of course accept major agreements or negotiated resolutions to issues. However, they will ensure that these are disproportionately in their favour, to maximise their power gain.

### **Direction**

Revisionists should relentlessly pursue almost entirely coercive strategies, aiming to initiate at, or rapidly escalate to, the highest levels available – including by favouring crisis initiation. This outcome of *constant* and *rapidly escalating* coercion is not well recognised by other authors but arises from OR’s behavioural drivers and is reflected in Mearsheimer’s point on the utility of war.<sup>109</sup> That is, noting the need to gain power as quickly as possible (before others attack), an OR state is driven to constantly exert the greatest coercive effect when pursuing goals, rarely missing opportunities to exert pressure. This, rationally, provides the best chance to rapidly affect another nation’s perceptions of costs and benefits, so that it quickly accedes.

In turn, cooperative strategies risk relative gains (and the potential to reduce the pressure felt by another nation) and should be avoided. This is reinforced by, in an OR-world, such behaviours likely being perceived as weakness – inviting pressure on the coercer (Leng, 1993a). Thus, OR states should not initiate nor respond positively to offers of practical cooperation; although they may engage in less intense forms and will be open to agreements that finalise disputes – as long as it on their terms. But due to the risks, even declaratory or administrative/legal efforts should be rare.

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<sup>109</sup> These points are arguably noted by Tang (2010a), who writes that an OR state “consistently thinks of adopting and often does adopt offensive strategies against other states in order to further its goals” (p. 31) and that such nations should aggressive militarised strategies – that is, the most coercive available (2010a, pp. 99–127).



A counter to this intensively coercive direction is Mearsheimer's point that states think strategically about both the short and long-term impact of their actions (2014, p. 31). Hence it might be argued that nations would hold-off from strong coercion, fearing that it might lead to an immediate or longer-term countervailing reaction. However, this position is undermined by Mearsheimer's point that nations must seek to gain power as quickly as possible and cannot allow opportunities to slip past. Hence, states have short time horizons and must focus on immediate benefits, particularly so if the prize is territory – *the* source of power under OR.<sup>110</sup> Further, as is discussed in Chapter Seven, when comparing the results developed in this dissertation with work by other authors, in many instances of crisis assessed by Leng (1993a) nations precisely did engage in this intense coercive direction.

### **General Effects of the Balance of Power**

The key determinant of a state's highest (and thus preferred) level of coercion is the balance of power and a nation's alignment with BOP or PTT. For the former, superiority enables military aggression – hence at such “opportune moments” the state should rely on highly distinctive militarised strategies. At other times, the nation should focus on no more than distinctive economic strategies, aiming to avoid distinct military actions that raise the threat of conflict; however, all normal strategies, including military ones, are permissible. This ordering is reversed for PTT.

A corollary of this is that OR states should act differently depending on the balance of power with different nations. As is discussed in Chapter Four, power is relative – notably so for military power, which is much affected by geographic location. So, an OR state should act the same way towards nations where it has a common position in the balance of power; and differently towards countries that are more or less powerful than it, or even towards one state at various locations as the balance of power shifts. Such variations provide a way to identify OR states and, for them, to

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<sup>110</sup> For a broader discussion of short time horizons under OR, see Lee (2002).

test BOP and PTT without war: examining what coercive behaviours are favoured at which balances should indicate if BOP or PTT is favoured even without conflict.

### **Reactions to Other States**

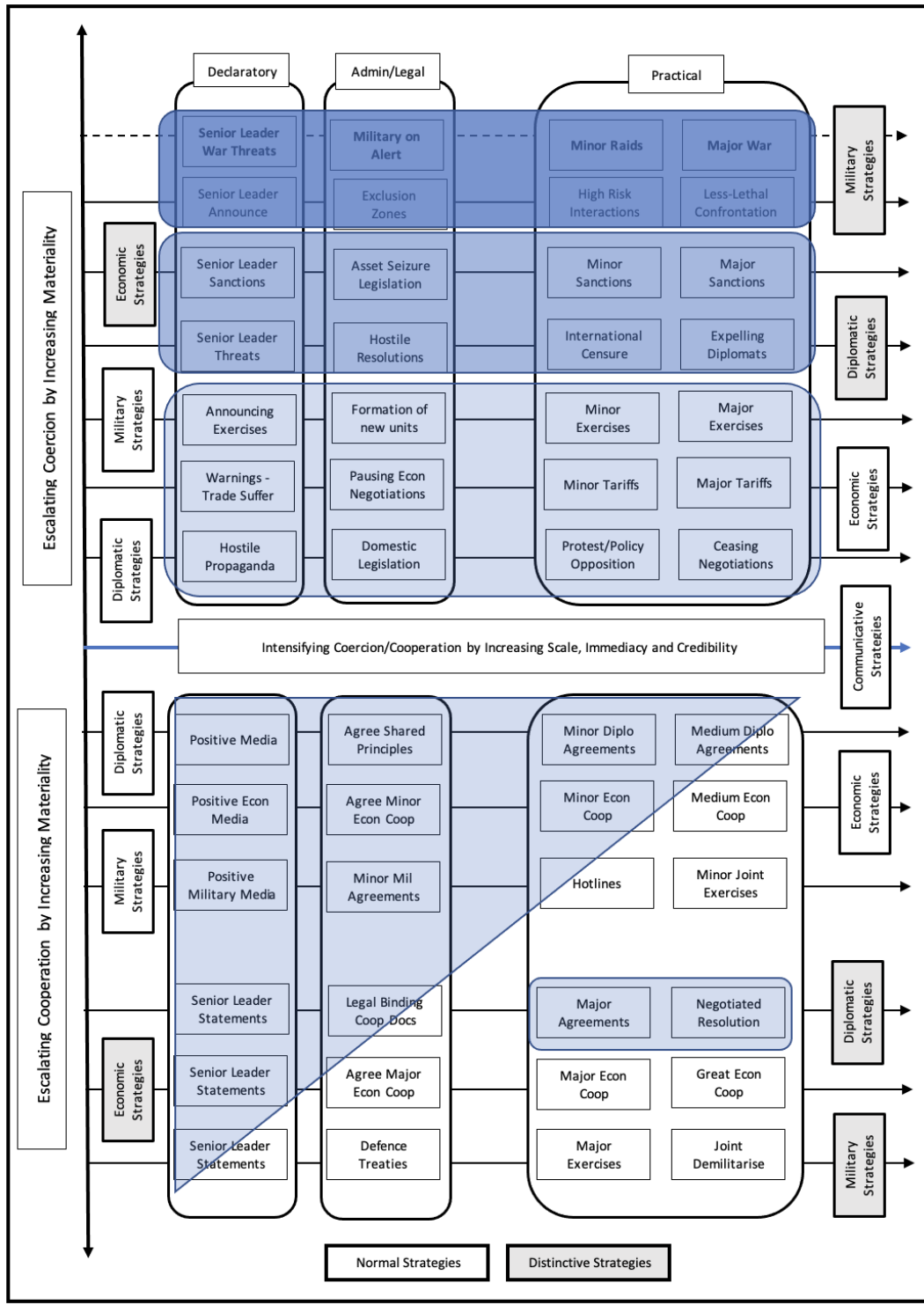
Revisionists should generally respond to cooperation or coercion with escalating coercion, reflecting needs to gain power rapidly, not be perceived as weak, and to avoid cooperation allowing relative gains. If the balance is opportune, the OR state may even respond with distinctive militarised threats or actions. But if the situation is inopportune, the Revisionist will still escalate but seek to remain below distinctive military actions; although if threatened by such it will generally aim to match this behaviour, so as not to show weakness, but still not be the first to initiate violence. However, if actually attacked first, then it will respond in kind and with escalation. Also, the Revisionist (like all states) might frequently not react to other nations at all (notably for normal actions). But this is more likely for cooperative behaviours than coercive ones, as not reacting to the latter might be construed as weakness.

Finally, these preferences particularly apply to regional nations competing for, or that may affect each other's chances to gain, the key OR prize: regional hegemony. Greater cooperation (such as trade) is possible with distant states as the Revisionist can thereby at little risk expand its power to use against its neighbours.

### **Strategy Preferences Diagram**

These considerations are captured for an OR(BOP) state at power superiority in [Figure 3.4](#). Scope is shown by the shaded areas, with direction indicated by darkening shading: the more preferred strategies are darker. In this instance distinctive militarised strategies are most favoured, followed by economic and diplomatic distinctive strategies, and then normal coercion and cooperation. If the balance was unfavourable, distinctive military strategies would be excluded. Finally, these preferences would be reversed for PTT states: distinctive militarised strategies are preferred at power parity, and vice versa.

Figure 3.4: OR General Strategy Preferences



## Gains-Sensitive Defensive Realism

In overview, the scope of DR(GS) states' preferences is the entire normal section of the continuum, with the intensity of distinctive options decreasing as the level of coercion or collaboration escalates. For direction, this will be opportunistic, resulting in strongly mixed strategies with a greater use of cooperative and coercive measures compared to Revisionist or Peaceful states. Strong mixing will manifest by the concurrent use of many coercive and cooperative strategies, or potentially favouring mainly cooperative or coercive ones for periods but alternating over time and between states. Direction will be generally restricted to the normal suite of behaviours, and not be so relentless in pursuing power. Further, DR(GS) states should generally respond in kind to coercive or cooperative gestures.

### **Scope**

The key elements for DR(GS) states are mid-range (i.e., normal) cooperative and coercive behaviours. This reflects Waltz's observation that nations should pursue engagement strategies to most efficiently identify the mix of costs and benefits that they should offer to achieve their goals (1971, p. 470). The normal range of strategies provides means to achieve this without exposure to the types of excessive costs or risks that DR(GS) states should wish to avoid, as these are unnecessary to achieving their main goal of maintaining their security via keeping or slightly improving their position in the international balance of power (Waltz, 1979).

As such, Waltzian states should shy away from the most intense examples of distinctive practical cooperation in the economic and military spheres, as these risk great relative gains. However, declaratory, administrative, or legal acts may be necessary, such as alliances that Waltz expects as weaker states "balance" against stronger ones. Also, some practical distinctive economic and military cooperation may occur in some instances, as Waltz notes this is enabled (but not certain) between "loosely associated" states or "consumers" of security, situations where

the risks associated with relative gains are reduced<sup>111</sup> (1971, pp. 460–462). Indeed, for such states Waltz notes that they will both be “unwilling to use major military force [against one another] or to [strongly] strengthen their relations” (1971, p. 461). Further, as with Revisionists, Opportunists will accept major agreements and negotiated resolutions to issues; however, they should be more willing to accept an “even split” of results so as to not too substantively affect the balance of power.

Distinctive coercion should too be avoided as it risks unnecessary costs: expelling diplomats or imposing sanctions invites the same in turn, and threatening or initiating conflict risks escalation to costly wars. But Waltz notes that states may still attack first out of fear, or strong nations may do so to try to gain power at low risk (1979, pp. 126, 132, 201). So, aside from major wars, which should be avoided so as to not gain too much power too quickly, all other forms of coercion are open to DR(GS) states.

### **Direction**

A DR(GS) state’s direction will be opportunistic (hence why they are also referred to here as “Opportunistic nations”), based on its assessment of how best to achieve its goals with a particular nation. To maximise flexibility, it will use a strong mixture of both coercive and cooperative elements. This may manifest by concurrently using many cooperative and coercive behaviours, or by mainly (but not exclusively) harnessing a cooperative or coercive strategy for periods, but varying this across targets, and if one strategy is not successful, changing its approach over time. Such patterns are overtly noted by Waltz for loosely associated nations in particular, which he expects to “appear as both antagonists and partners, sometimes skirmishing in a test of wills, sometimes probing to expose weaknesses, sometimes moving towards agreement on specific issues, sometimes simply drawing apart”

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<sup>111</sup> Loosely associated nations are those that use each other for goods or services but are not dependent on one another, and are either unable to impose their will militarily or would face unacceptable risks in trying to do so. In such a situation, if a nation gains an advantage it would be unable to effectively threaten its partner (Waltz, 1971, pp. 460–469).

(1971, p. 461). Further, due to the lack of need to constantly pursue power, the DR(GS) nation may frequently allow opportunities to lie fallow.

When Status Quo countries pursue a concurrent strongly mixed strategy, their behaviours will encompass a diverse selection of normal collaborative and conflictual actions and so lack a clear coercive or cooperative direction. In turn, if the state determines that it will proceed with a predominantly cooperative or coercive strategy, it should begin with lower level (i.e., less intense) actions and then more slowly escalate and vary these over time. Using any of these approaches, the DR(GS) nation seeks to identify the optimum mix of normal strategies to achieve its goals, and do so by escalating or de-escalating within these as it sees fit while aiming to avoid exposure to the costs associated with distinctive measures. This willingness to explore different strategies and change over time is reinforced by the lack of need to gain power quickly – there is little benefit in rapid solutions achieved through offering great benefits or costs.

While distinctive behaviours are within Opportunistic nations' scope, they should avoid initiating and escalating to such strategies or responding positively to similar cooperative offers from others, although they will match coercion with coercion. Of note, initiating and escalating distinctive actions are not forbidden to DR(GS) states, but these should be rare compared to general actions.

Specifically, extensive cooperation should be avoided due to risks of relative gains or other costs such as, for alliances, entrapment in unwanted conflicts. And for "loosely associated" or "security consumer" states, cooperation is enabled rather than necessarily preferred. To the extent that Status Quo nations do engage in such behaviour, it should be sporadic and ad hoc – they do not seek to deliberately build up to and expand upon distinctive collaboration. Indeed, in the world of mutual fear and suspicion repeatedly described by Waltz (1979, 1988), distinctive cooperation must be judged a particularly unlikely or infrequent resort for DR(GS) states.

Similarly, initiating distinctive coercion should be rare, as diplomatic and economic measures risk unnecessary losses, and violence should be among the least preferred strategies. The latter reflects not only the “status quo bias” against major power gain, but that more minor attacks offer a poor cost-to-benefit return, as noted in Chapter Two.

However, in the dangerous and anarchic international order, distinctive coercion clearly still has its place, and there are two ways that it is most likely to manifest. Firstly, the nation engaging in a concurrent strongly mixed strategy may still resort to distinctive coercion on an infrequent (compared to an OR state) using odd instances of such strategies among its core span of normal behaviours to see if they deliver its desired result. Alternatively, Status Quo states pursuing a deliberate coercive path may commence at lower levels and then, after steadily increasing pressure over time, begin to initiate and escalate distinctive coercion. Through this method, they aim to provide the target with repeated opportunities to concede, and thereby allow the DR(GS) state to avoid having to use the costliest strategies.

Under either approach, while a Waltzian state might use various forms of distinctive coercion regardless of the balance of power, it should avoid militarised strategies unless at an opportune moment for armed victory. This is because military superiority means that should the other party react violently, the Opportunistic state is already well placed – and likewise if it decides itself to attack in due course.

Finally, if a DR(GS) state is threatened or attacked first, it is likely to respond with matched distinctive coercion in-kind. This prevents a reputation for weakness. But here too it should ultimately begin to work to reduce tensions.

### **General Effects of the Balance of Power**

Status Quo states should be little influenced by the balance of power. Such nations will simply pursue those strategies that they believe will work and do so broadly regardless of their position in the balance. The main impact of power is that when

the balance is not opportune, DR(GS) nations should be unlikely to initiate distinctive militarised coercion.

Similarly to when considering power effects under OR, these expected responses allow for some investigation of BOP vice PTT. But due to the weaker correlation between power and strategy preferences, any results are more equivocal.

### **Reactions to Other States**

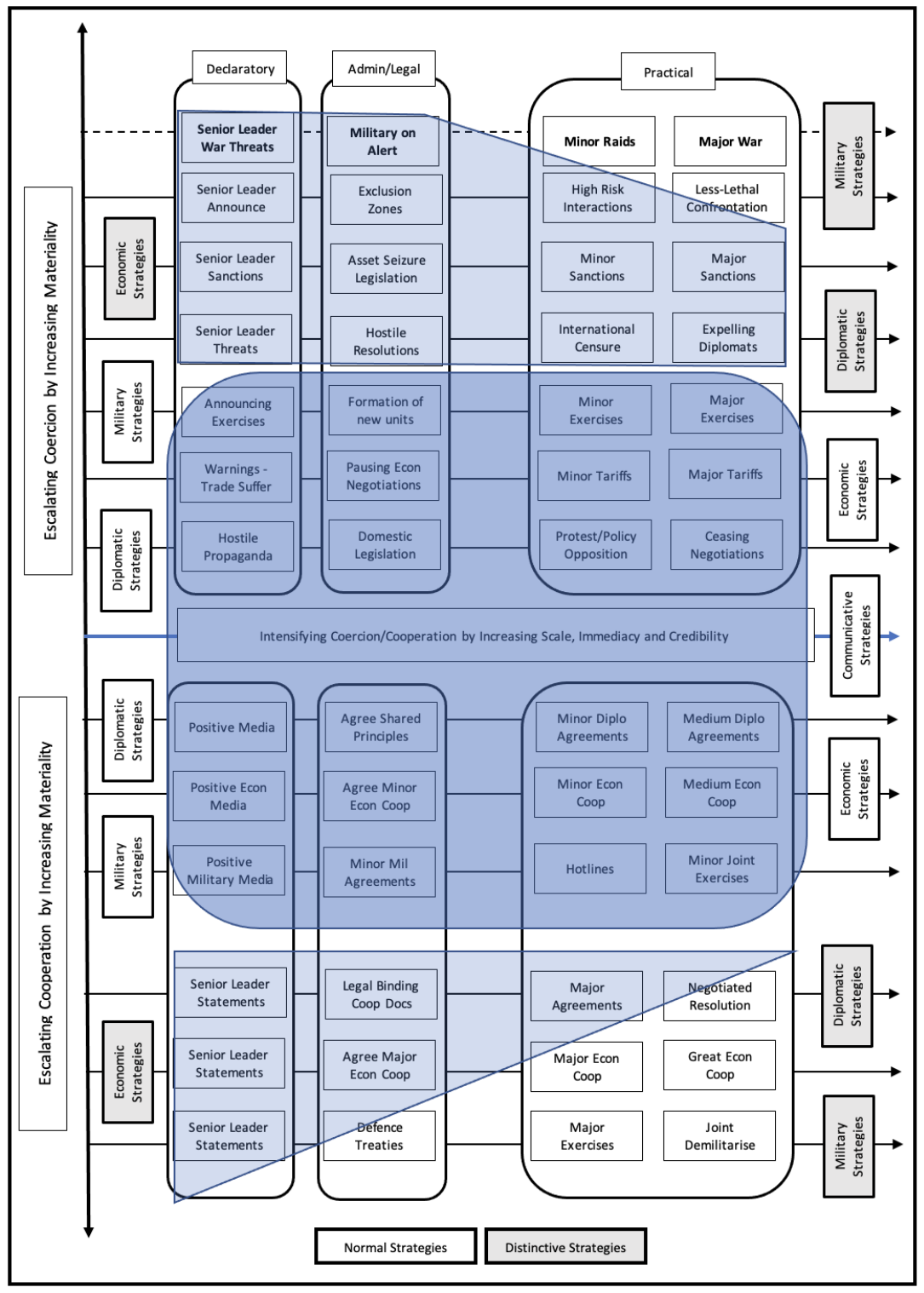
Opportunistic states should, when choosing to react, largely respond in-kind to the treatment they receive from others. Cooperation should be met with cooperation since, otherwise, other nations would be more inclined to attempt coercion. And confrontation should be met with the same, lest the state develop a reputation for weakness. Regardless of what it is responding to, the DR(GS) state may show restraint or escalation for normal actions, depending on its assessment of what response will best serve its goals. But it generally aims to avoid escalating to distinctive actions, restrain further escalation if it finds itself in such territory, and ultimately work to return to the normal span of strategies. This applies even to the Waltzian nation that engages in ad hoc distinctive coercion – after all, it ultimately seeks an efficient way to gain its strategic ends, rather than to be ensnared in costly escalation. But the exception is those rare instances when the DR(GS) state has determined to deliberately consistently react with escalating distinctive coercion, including to military measures if it is at an opportune balance of power.

### **Strategy Preferences Diagram**

The above considerations are captured graphically for a DR(GS) state in [Figure 3.5](#) below, following the schema from [Figure 3.4](#).



Figure 3.5: DR(GS) General Strategy Preferences



## Gains Less-Sensitive Defensive Realism

In overview, the scope of DR(GLS) states' strategy preferences is effectively the inverse of Revisionists. It encompasses the entire cooperative end of the continuum with limited coercion elements – the intensity of which decreases as confrontation escalates. For direction, this should be consistently cooperative, likely commencing at a low level but escalating to the highest available based on the state's assessment of another's motivations. Yet, the persistency of cooperative initiation will vary with conditions. Further, DR(GLS) states should respond with escalating cooperation to like gestures and show restraint in response to coercion.

### **Scope**

Clearly the entire cooperative spectrum sits with DR(GLS)'s preferences. As long as a state is certain of another's bona fides, it should logically seek the maximum degrees of benefit: the most escalated and intense collaborative strategies, particularly military ones. This is noted by many Motivational Realists including Tang (2010a), Kydd (1997b) and Glaser (1994). As part of doing so, it may even accept unfavourable agreements and negotiated resolutions as a means to demonstrate its genuinely cooperative intent.

There is little scope for coercion in DR(GLS) preferences, with the level of intensity decreasing as confrontation escalates. Coercive options exist at all for two reasons: firstly, even Peaceful states will pursue mixed strategies, using the occasional adverse measure to achieve ends efficiently. Secondly, when facing potentially (or definitely) aggressive states, DR(GLS) nations may well need to resort to increasingly coercive measures (notably, military deterrence) to secure themselves from threats or attack (Tang, 2010a).

However, the Peaceful state wishes to avoid coercion, both to prevent it being misidentified by potential partners (i.e., other states observing it) and to avoid the costs such measures bring. So, while normal coercive behaviours are open to the

DR(GLS) state, it should minimise using those with an escalating practical impact. It should particularly avoid initiating distinctive practical economic and especially militarised coercion, although it may engage in credible threats of sanctions or war to head off grave threats. Finally, while even the Peaceful state might initiate attacks, these circumstances are so unusual that they may be held separate from the main scope of DR(GLS) behaviour.<sup>112</sup>

### **Direction**

Regarding direction, DR(GLS) states should reasonably consistently pursue cooperation, beginning at what they perceive is a safe level and then initiating conditional (i.e., reciprocity-based) escalation to the highest options. This is because reciprocated cooperative behaviour is the surest path to demonstrating peaceful intent and thus, safely, gaining the greatest benefits of cooperation. Further, Tang argues that cooperative gestures should be occasionally directed even to apparently committed Revisionists. This is because they may be DR(GLS) or Status Quo states acting aggressively out of fear or misunderstanding of the Peaceful nation's intentions; or even if truly OR, in time their regimes may change and the new government be open to cooperation (Tang, 2010a, pp. 119–123). However, if the Peaceful state assesses its actions are not well received, or ineffectual, it may simply focus its efforts elsewhere. So, cooperative behaviours need not be displayed relentlessly, due to the lack of necessity to gain power quickly, although Peaceful states should be alert for and often initiating opportunities to demonstrate their nature.

Coercion should be utilised reluctantly (particularly for distinctive actions), at the lowest possible levels, and only in response to other nations' coercion. This is because while it may be necessary to drive off Revisionists, such actions risk being

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<sup>112</sup> Tang proposes that a DR(GLS) state should only initiate aggression when it is absolutely sure it is faced with an OR state, that this Revisionist is imminently attacking, and that the Peaceful nation's first-strike advantage is enormous (2010a, p. 90). Tang argues such a concordance of factors should be rare and finds this supported by Reiter (1995) who finds of 67 wars from 1816 to 1980, only three were pre-emptive.

directed at a potentially friendly but fearful nation (Tang, 2010a, pp. 99–127). Hence the DR(GLS) state may deprive itself of a partner and needlessly gain an adversary. Further, coercion may be misconstrued by other observers and hinder broader cooperation. Despite this, Tang recognises that as a DR(GLS) nation becomes sure of another state's OR nature, it must likely resort to increasingly coercive strategies, potentially ceasing cooperation almost entirely. This is because committed Revisionists will only be stopped by the threatened imposition of costs, and may indeed perceive cooperation as weakness (Tang, 2010a, pp. 99–127).

### **General Effects of the Balance of Power**

Peaceful states should act alike to most nations regardless of the power balance. Unless faced with aggression, the DR(GLS) state is willing to cooperate with nations showing a propensity for the same. Due to the lack of correlation between power and changing of strategies, DR(GLS) states provide little means to test BOP vice PTT.

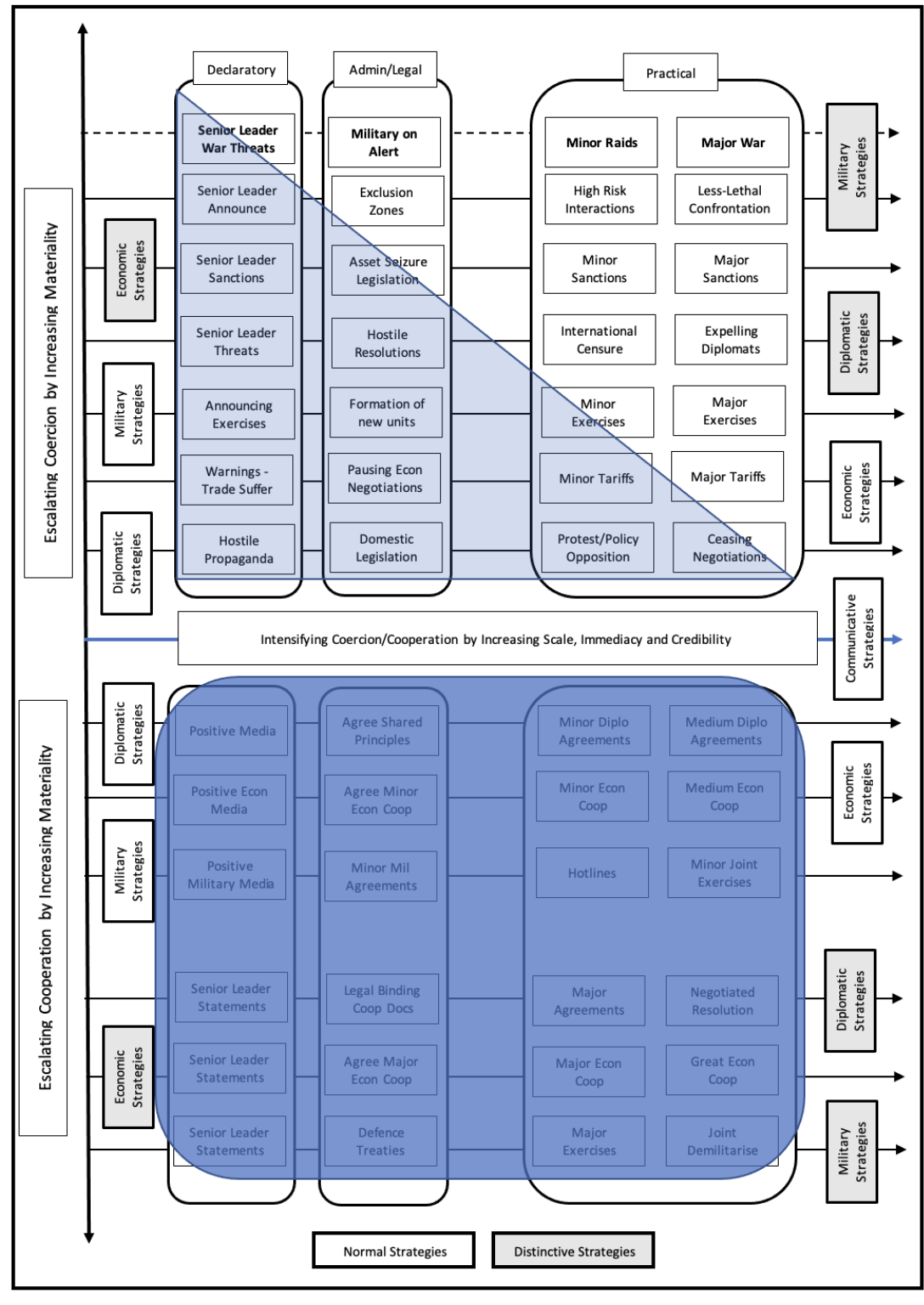
### **Reactions to Other States**

Peaceful states should respond to cooperation with escalating reciprocation, and to coercion with restraint, and generally with a decreased level of confrontation (or at most a match). They may infrequently respond to non-militarised coercion with increased coercion, such as escalating to a formal protest in response to some declaratory action – but such behaviour should be rare overall. By these restrained measures, Peaceful states seek to build cooperation with friendly nations and avoid spoiling relations with potential partners. Also, they should not initiate distinctive coercion, although they may respond in kind to ward off significant danger.

### **Strategy Preferences Diagram**

The above considerations are captured for a DR(GLS) state in [Figure 3.6](#) below. The distinctive suite of cooperative behaviours are most favoured, followed by normal cooperation and then coercion.

Figure 3.6: DR(GLS) General Strategy Preferences



## Weak and Irrational States

Of note, the above preferences can, practically, only be used to assess (for theory testing purposes) the behaviours between states of not too dissimilar power. This is because when weak states (regardless of their motivations) face powerful ones, they should rationally behave as DR(GLS) nations to avoid antagonising stronger ones. So, for weak nations, such behaviours reveal little about their state-type; and indeed as discussed in Chapter Seven such results were typically set aside.

Finally, a frail country could choose to initiate or escalate distinctive aggression towards a powerful nation. But this would be irrational under OR and DR (as it could bring severe retaliation) and so falls outside the theories' scope and cannot be assessed. In fact, various domestic drivers may cause such outcomes,<sup>113</sup> and in some instances irrational behaviour may in fact be logically justifiable (such as a bluff) or to build reputation. However, for counting purposes when assessing the prevalence of various state-types, such behaviour is classed as irrational.

## Summary

This section has defined strategy preferences for DR(GS)BOP, DR(GS)PTT, DR(GLS), OR(BOP), and OR(PTT) states in scope and direction, thereby meeting Waltz's guidance to provide both theory-associated, more-unique behaviours that should be observable more rarely (reflected in differences in scope) and general patterns that should be persistently visible (reflected in differences in direction).

Regarding differences in scope, only OR states should be willing to initiate major wars, with these still occurring only rarely as it is more efficient for Revisionists to simply threaten violence. And only DR(GLS) states should engage in highly escalated and intense military and economic cooperation, but this too should occur more

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<sup>113</sup> Waltz (1971) notes that any number of domestic drivers may cause a state to act "irrationally". But as these internal drivers fall outside of SR's core assumptions, they cannot be encompassed by the theory – and neither can irrational behaviour writ large.

rarely as time is required for trust to bloom. Further, DR(GS) states should, over time, be identified through their unwillingness to engage in either type of behaviour.

In terms of direction, Revisionists should seek relentless coercive escalation, readily initiating at, or rapidly escalating to, the most distinctive levels of confrontation available moderated by the balance of power. This suits their goals of the quickest possible power increase.

In turn, DR(GS) states should use strongly mixed strategies, either with no clear cooperative or coercive bent (instead using much of both), or favouring one but slowly changing, and escalating or de-escalating over time within the normal range of strategies. They should also not be as persistent in their pursuit of outcomes as OR or DR(GLS) nations. This suits their goals of the most efficient increase in power, while focussing on survival and maintaining their position in the world order.

Finally, DR(GLS) countries should constantly aim to escalate cooperation, including by initiating distinctive behaviours and responding to collaboration in kind, and show restraint in response to coercion. This suits their goals of increasing power safely by cooperation with like-minded states.

### **Allowing for a Stronger Test**

These descriptions provide, together, the basis to address the research questions: the respective patterns can be sought out, and their prevalence observed, to address *if, how, and when* – including in situations short of conflict. But to test these forecasts, it still remains necessary to apply these to a thematically narrow area, allowing more determinate predictions. This is now done in the section below, with these predictions then used to assess nations' behaviours in specific circumstances in Chapter Seven.

## **Section IV: Structural Realist Strategy Preferences in Territorial Disputes**

While the framework above can be tailored to many situations, this dissertation focusses on territorial disputes. This reflects their benefits including being core Realist concerns, driving substantively different behaviours from states motivated by the various theories, and being of key normative interest. This section discusses territorial disputes and their utility to strategy assessment, provides a refined territorial-focussed strategy framework, develops and maps the theories' preferences to this continuum, and supplies an assessment tool aligning state-type behaviours with national objectives and balances of power.

### **Territory and Territorial Disputes under Realism**

The maintenance of territorial integrity is arguably the key survival requirement for modern states – being geographically defined units of political control (Holsti, 1995). Without territory, the state ceases to exist; hence why citizens' lives are expended in its defence. But territory is also associated with gaining and maintaining power and security – explaining why countries seek expansion. New territory can remove enemies via conquest, provide improved defence barriers or buffer zones (Fravel, 2010, p. 517), and new resources that generate the wealth that sustains military power (Markowitz, 2014, pp. 11–12). Further, a territory's possessor denies such benefits to adversaries (Mearsheimer 2014, pp. 147–151).

Hence, maintaining and gaining territory is a key concern under Realism, with Mearsheimer noting that “conquering and controlling territory [is] the paramount political objective in a world of territorial states” (2014, p. 43). Nations thus have strong motivations to enhance their abilities to harness resources in territory that they control, to be able to defend it, and potentially take territory from others.



As a key concern of Realism, territory, and in particular territorial disputes, are a promising topic for testing the paradigm. Such disagreements are conflicting claims by two or more states over the ownership and control of a piece of land or maritime territory.<sup>114</sup> Due to structural factors mentioned above, and also historical grievances, there are many such disputes spread across history. Indeed, one quite recent study showed 244 extant examples: 122 land-based and 122 river- or maritime-based (Hensel et al., 2008).

While such disputes bring a range of practical benefits to testing Realism, as discussed below, understanding such issues also has major normative, policy and scholarly importance. This reflects that, of the major causes of violence, they are *the* main reason that states fight wars (Vasquez & Henehan, 2001) and hence “political science ... treats the potential for territorial conquest as the most important international security problem” (Christensen, 2002, p. 8).

Before examining the utility of such disagreements to assessing Realism, it is useful to briefly discuss the differences between maritime and land-based disputes, since both are relevant to the SCS dataset analysed later in this work. Land-based quarrels occur when two or more nations claim an area of land over which they seek to exert sovereign control. In such disputes, a nation either may de facto occupy the land and defend it, may contend with others for unoccupied ground (although typically one state or another will exert more control and can be considered the notional occupier), or may seek territory occupied by another. Simplifying matters in land-based disputes, the areas are normally broadly well defined, and the presence there of military forces other than that of the de facto controlling state can clearly be identified as distinctive coercion.

Maritime disputes are more complex. Under the UN Convention on the Law of the Sea (UNCLOS, 1994), the governing document for global maritime territorial issues,

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<sup>114</sup> This definition is developed from that proposed by Fravel (2014), which differs in that while land includes islands, it excludes any maritime demarcation disputes.

sovereignty over ocean territory stems from sovereignty over land. Under UNCLOS nations can claim essentially two key maritime zones.

Firstly, as measured from their mainland shores and those of any rocks<sup>115</sup> over which they have sovereignty, states are allowed a 12 nautical mile, or 22 kilometre (km), Territorial Sea (TS). In this area a state has exclusive law enforcement, military and economic rights, and foreign vessels (including military ones) can only pass through with prior approval or under the restrictions of “innocent passage”.<sup>116</sup>

Secondly, again from their mainland shores and those of any islands<sup>117</sup> over which they have sovereignty, nations can claim an up to 200 nautical mile (370 km) Exclusive Economic Zone (EEZ) (UNCLOS, 1994, pp. 40–49). Beyond the TS but within this EEZ, while a sovereign state has sole rights over natural resources, most (but not all) of the world’s nations interpret UNCLOS as allowing foreign vessels (including military ones) to transit, loiter or conduct exercises in it at their discretion as long as they do not harm the economic interests of the sovereign.<sup>118</sup> Beyond this area are the “high seas” where no nation has jurisdiction. This arrangement of zones (together with others less relevant to the dissertation) is in shown in [Figure 3.7](#).

Such legal arrangements clearly allow for substantially more grey in terms of the borders of disputed areas and how actions are interpreted. For example, nations may dispute the legal nature (rock or island) of the territory that they control and hence the size of the associated maritime zone they have rights to; and where zones overlap, they may debate where borders should actually lie. Further, within their zones, any of a range of military and other activities by other nations may be

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<sup>115</sup> Defined by UNCLOS as landmass naturally and permanently above water but that cannot sustain human habitation or economic life on its own (UNCLOS, 1994, p. 66)

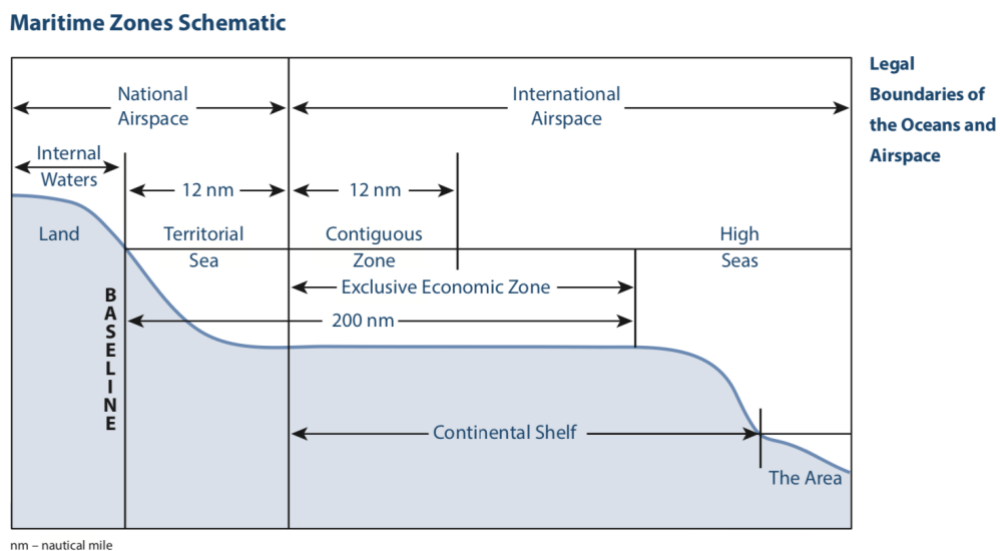
<sup>116</sup> Meaning that vessels travel continuously and expeditiously while refraining from a diverse range of activities such as fishing, using weapons or conducting spying (UNCLOS, 1994, pp. 27–33).

<sup>117</sup> A landmass permanently above water that can sustain human habitation or economic life on its own that is naturally occurring rather than artificially constructed (UNCLOS, 1994, p. 66).

<sup>118</sup> Only 27 nations argue that UNCLOS allows them to regulate military vessels in their EEZ (O’Rourke, 2018, p. 30).

entirely legal – although the de facto sovereign itself may wish to apply different interpretations of maritime law and seek to rule out such behaviours. Such concerns, and means to address them, are briefly discussed below and in more detail in Chapter Seven.

Figure 3.7: Maritime Territorial Zones



Source: *The Fletcher School of Law and Diplomacy* (2017, p. 11). Graphic used with permission of Tufts University.

### **Advantages and Disadvantages of Using Territorial Disputes to Investigate Realism**

This dissertation’s approach to testing the theories’ answers to *if, how, and when* is to define theory- and power-associated strategy preferences and seek evidence of their occurrence. Territorial disputes, conceptually and as datasets, provide a range of advantages when practically attempting such a method, including:

- *Clear goals and simplified behavioural prediction.* States’ specific foreign policy ends are clear: they seek to defend territory that they hold and gain what they claim, although they may be forced to accept otherwise. This narrowing allows countries’ predicted behaviours to be tightly specified and so better tested for.

- *Easier identification of strategy-relevant actions.* With specific territorial goals defined, it is also easier to identify actions associated with states' strategies to gain or retain these areas. For example, as nations seek to resolve such matters, they will often specify when behaviours (such as press releases) relate to it. Other relevant acts can be identified by proximity: those near or in a disputed area have more relevance than those elsewhere.
- *More unique (i.e., differentiable) predictions.* As OR demands constant power accumulation, ideally through conquest, while DR drives nations to avoid such behaviour, this should manifest in very different actions by OR and DR states, allowing stronger testing.<sup>119</sup> Noting the importance of rapid territorial gain to Revisionists, their use of deceitful high-level cooperation to gain territory (such as by joint demilitarisation) is logically less likely – such actions are a long-term strategy that risks relative gains advantages to their adversary.
- *More certain predictions.* Noting the vital importance of territory, states are logically more likely to engage in actions to secure it, making forecast behaviours more likely to be observed. Also, territorial disputes are uniquely susceptible to military resolution since, as observed by Rasler and Thompson: “The seizure and defense of specified pieces of real estate are what armies do ... [so] states know exactly what to do about territorial claims” (2006, p. 147). This should enable militarised OR behaviour, making its observation more certain and enabling stronger testing.<sup>120</sup> And as balances of power shift over time, then for such states strategy preferences should change too, allowing for testing PTT.

Separately there is the novelty of the approach, providing a more substantive contribution to the scholarly literature. While there are hundreds of investigations

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<sup>119</sup> Aligning with Van Evera's (1997) note that stronger testing is enabled when theories make more unique (i.e., clearly differentiable) predictions.

<sup>120</sup> Aligning with Van Evera's (1997) note that stronger testing is enabled when theories' predictions are more certain (i.e., likely) to be observed.

of territorial disputes, the vast majority do not focus on comparatively testing OR and DR, let alone by the detailed investigation of strategies.<sup>121</sup>

Of course, all approaches have disadvantages, and a key one for territorial disputes is that they generate dynamic and highly context-specific predicted behaviours, complicating the predictive process and analysis of results. This reflects that, firstly, behaviours will depend on national goals at individual locations (defensive or offensive). Further, state behaviours will vary based on balances of military power at each contested location, reflecting the potential to achieve quick, cheap victory. And as is discussed in Chapters Four and Five, these balances are specific to the armed forces available to contending nations and their particular objectives at locations and times. So, predictions must be developed for particular dyads, for each dispute location (as the balance can vary), for a specific time; and then redone as power superiority shifts. Indeed, nations can be expected to have different behaviours at the same location(s), or vice versa, or combinations thereof, depending on who they are competing with, when and where.

Also, nations can be expected to undertake a range of self-initiated behaviours on disputed territories to be able to better enforce their control (such as by deploying patrols), or economically exploit the territory (such as engaging in fishing). Such actions may have no direct relationship to other states (and so any balance of power), and simply reflect the rational aim of a country to harness the benefits of a territory and to be prepared to defend it (regardless of any specific threat) in an anarchical world order. Further, actions such as the printing of maps covering broad areas also encompass such locations by default. Hence, while all such behaviours are coercive under the framework, such “control-enforcing” acts need to be treated sensitively rather than as evidence in particular of specific motivations.

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<sup>121</sup> There is a vast literature examining territorial disputes. Overviews can be found in Vasquez (1998, 2012), with specific examples of analyses including Rasler and Thompson (2006), Hensel (2001), Huth (1996), Huth and Allee (2003) and Frederick et al. (2017).

Further, additional judgements are required in maritime disputes to describe *where* and *when* certain physical actions should be considered defensive vice offensive and hence normal vice distinctive. Physical actions are defined as those that principally physically occur in and thereby affect a particular area,<sup>122</sup> such as military deployments, vice intangible matters such as new maps or sanctions that may refer to an area but do not occur in it. Physical actions can sensibly be considered as defensive and normal if occurring where a state controls territory, as they maintain the status quo, but are potentially distinctly coercive if conducted where another nation is the occupier – as they threaten its control and risk escalation. They may also be considered distinctly coercive, in some instances, when they substantially change the physical nature of the status quo even in areas controlled or claimed by a state, or in international waters, such as building a structure where none existed, or substantially increasing the size of a feature by major land reclamation.

These issues are addressed here firstly by considering the inherent escalation of such actions. So, distinctly coercive actions (such as those threatening loss of life) are always so, although they may be defensive or offensive depending on their location. But, secondly, normal actions (such as those in [Figure 3.3](#)) may become distinctive depending on where they occur and a state's broadly recognised rights there under international law, and/or if they substantively impact the status quo.

Specifically, UNCLOS grants nations maritime zones stemming from their mainlands and features over which they have de jure sovereignty. So, normal actions that states take within their own zones (and those arising from de facto control, discussed below), such as enforcement against poachers, are classed as defensive and normal. Actions on the High Seas are considered in terms of whether the state is acting offensively to impose rights that it does not have. For example, a nation attempting coastguard enforcement against another country's vessels would be classed as offensive distinctive coercion; but acting to protect itself against the same would be defensive normal coercion. And any such coercive actions by one

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<sup>122</sup> Such actions can be proposed as relevant to a given strategy both due to proximity to its target (such as a disputed area) or thematic linkage. This is discussed in Chapter Seven and Annex B.

nation conducted in another country's maritime zones are offensive and distinctive. Also, as noted above, if a state takes actions where it has de jure or de facto control (or in international waters) and these are considered to substantively impact the status quo, then this too can be judged distinctive.

Finally, where de jure sovereignty is contested (which includes all SCS features considered in this dissertation) a nation may still have de facto control, with the rights of claimants still needing adjudication to determine whether actions are defensive or offensive, and normal or distinctive. Here the rule was used that once nations had longstanding (12 months or more) de facto control of a feature, they were treated as having the rights of a de jure sovereign.<sup>123</sup> Until this point, their actions were treated as offensive and distinctive. Also, since the borders of maritime zones can be contested, using the above approach may also require adjudicating borders. This issue, and a broader question of how actions are assessed, is addressed in Chapter Seven for the SCS.

### **A Territorial Dispute-Focused Strategy Framework**

As the prediction and assessment of territorial dispute actions must be informed by specific national objectives and balances of power, it is not practical to define how the various state-types will behave in all possible scenarios. Instead, it is necessary to draw upon their general strategy preferences and apply these to a bespoke framework that contains the types of behaviours observed in territorial disputes, generating more precise predictions of scope and direction. These predictions can then be applied to specific disputes, with states assessed on a case-by-case basis.

Further to this, an updated framework is discussed below and shown in [Figure 3.8](#), with the escalation path at [Figure 3.8A](#). This framework provides 72 strategy categories, 40 coercive and 32 cooperative. The continuum was developed from the behaviours in the dataset analysed in Chapter Seven and can thereby address the

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<sup>123</sup> A notion that would doubtless be debated by other claimants.

bulk of the information it contains. The key differences, retrospectively applicable concepts, and changed interpretations from the general strategy framework are:

- An additional layer of grand strategies, paramilitary actions, with exemplars discussed in [Table 3.3](#) below. The addition of this layer reflects paramilitary units' (including coastguards) applicability to controlling territory and their repeated use in the SCS dataset.
  - Due to their armed nature paramilitary units can conduct coercive diplomacy and crisis initiation. As a result, a double-recursive crisis initiation escalation path exists, with such paramilitary behaviours located between military coercive diplomacy and military crisis initiation (see Figure 3.8A). This position reflects that paramilitary crisis initiation actions directly threaten human life and have a real chance of spiralling into open conflict.
- Concepts described in the paramilitary layer also apply logically to retained exemplars from the original framework. For example, the description of paramilitary coercive diplomacy includes actions not in alignment with international law, such as coastguard vessels loitering in other nations' TS, which is disallowed under UNCLOS. These descriptions logically also apply to similar military behaviours.
- Similarly, military units can conduct paramilitary activities, such as enforcement actions catching poachers. Such behaviours are assigned paramilitary categories when they occur.
- The inclusion of different exemplars to address territorial disputes. Namely:
  - military raids are replaced with “land grabs” ([para]military attempts to seize minor areas of unoccupied or lightly defended territory<sup>124</sup>);

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<sup>124</sup> Following the definition by Altman (2017), expanded to include the use of paramilitary units.



- major wars are replaced by wars of conquest;
- domestic legislation is replaced with the publishing of maps claiming territories or submitting relevant data to multinational bodies;<sup>125</sup>
- hostile resolutions are (for maritime disputes) replaced with seeking compulsory adjudication (also called arbitration) by UN courts, noting that while such bodies can judge cases<sup>126</sup> they cannot impose decisions (Talmon, 2017); and
- asset seizure is replaced with exclusionary deals, where nations organise to exploit territories while excluding other claimants, or the declaration of resource bans, such as unilateral fishing bans in contested areas.<sup>127</sup>

Various retained exemplars can be applied in territorially focussed ways. So, agreements would relate to resolving a dispute, economic cooperation would relate to the disputed area, and military actions would focus on gaining or defending territory.

Of note, to ease the representation of scope and direction in a single figure, the exemplars in [Table 3.3](#) and [Figure 3.8](#) have been framed so as to apply to both defensive and offensive situations. So, a land grab can be offensive or a reconquest in response to an adversary's attack. The continuum's specific application to the SCS is detailed in Chapter Seven and Annex C.

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<sup>125</sup> For example, the UN's Ocean Affairs and Law of the Sea Division, which considers matters such as the extent of nations' claimed maritime borders.

<sup>126</sup> In particular, under UNCLOS while UN courts cannot determine sovereignty; they can rule on features' nature and thus their maritime zones. And if a feature is ruled a low-tide elevation (i.e., it is submerged at high tide) sovereignty defaults to the nation in whose EEZ it falls (Beckman, 2013).

<sup>127</sup> Such actions remain coercive but normal in disputed zones controlled by the imposing state; however, they become distinctly coercive if attempted in zones controlled by others. These actions' immediacy, in comparison to laws that might invoke similar ends, provides the increased intensity that escalates them to distinctive coercion.

Table 3.3: Paramilitary Grand Strategy and Exemplars

Grand Strategy Type	Description and Exemplars
<p align="center"><b>Coercive and Cooperative Paramilitary Strategies</b></p>	<p>These strategies seek to threaten (or impose) and promise (or realise) material economic costs by using constabulary assets such as police or coastguard units. Such units conduct enforcement using means that are non-lethal (such as chasing away targets), less-lethal but still risking fatalities (such coastguards using warning shots), and deliberately likely lethal (such as firing on a vessel). Of note military units can conduct paramilitary missions, and when they do so their activities are assigned paramilitary category ratings.</p> <p><u>Increasingly <b>coercive normal</b> actions include:</u></p> <ul style="list-style-type: none"> <li>• <b>Declaratory:</b> routine announcements of forthcoming exercises or equipment acquisitions by officials or senior leaders (low scale, immediacy, and credibility of harm).</li> <li>• <b>Administrative/legal:</b> forming a new paramilitary unit specifically tasked with addressing a particular issue – such as patrolling a disputed territory (increased credibility).</li> <li>• <b>Practical:</b> intensifying impact with ever-larger scale or more regular non-violent exercises or patrols while aligning with international law. For maritime disputes, defensive normal coercion (i.e., in locations where states have de facto or de jure control) may include forces conducting increasingly aggressive non-lethal enforcement in their maritime zones (such as escalating from calls for compliance using radios to using water cannons); or offensively, repeatedly travelling through another nation’s disputed zones without attempting enforcement activities. Where states have offensive objectives, the intensity of coercion also increases with proximity to land masses claimed or controlled by other states (escalating levels of immediate, credible and larger-scale direct harm).</li> </ul> <p><u>Increasingly <b>coercive distinctive</b> actions (proactive/reactive coercive diplomacy) include:</u></p> <ul style="list-style-type: none"> <li>• <b>Declaratory:</b> senior leaders’ announcements of exercises of unprecedented scale, or enforcement patrols, directly aimed at a particular disputed location, such as announcing enforcement patrols targeting a particular island, rather than stating they will occur somewhere in a disputed sea or large area of ocean; or warnings of units being authorised to use force (low scale, immediacy, and credibility of harm).</li> <li>• <b>Administrative/legal:</b> declare exclusion zones for paramilitary exercises or patrols in contested areas (increased credibility).</li> </ul>

<p style="text-align: center;"><b>Coercive and Cooperative Paramilitary Strategies</b></p>	<ul style="list-style-type: none"> <li>• <b>Practical:</b> intensifying impact from conducting actions not aligned with international law, ever larger exercises or more violent enforcement patrols. Offensively, proactive coercive diplomacy includes actions such as deliberately loitering in other states' TS (disallowed under UNCLOS), and non-lethal and less lethal enforcement tactics (such as distanced or increasingly close-in warning shots) conducted in contravention of international law, such as on the High Seas or in other nations' maritime zones. Defensively, less lethal and even occasional lethal enforcement retain their distinctive reactive coercive diplomatic nature (escalating levels of immediate, credible and larger-scale harm).</li> </ul> <p><u>Increasingly <b>coercive distinctive</b> actions (proactive/reactive crisis initiation) include:</u></p> <ul style="list-style-type: none"> <li>• <b>Declaratory:</b> senior leaders' announcements that forces targeting a particular area will use lethal force if needed (low scale, immediacy, and credibility of harm).</li> <li>• <b>Administrative/legal:</b> the placing of large quantities of units on high alert (increased credibility).</li> <li>• <b>Practical:</b> offensively, intensifying impact from enforcement patrols using repeated instances of lethal (or likely to be lethal) force in the High Seas or other nations' maritime zones. Defensively, the conduct of repeated instances of lethal (or likely to be lethal) enforcement (escalating levels of immediate, credible, and larger-scale harm).</li> </ul> <p><u>Increasingly <b>cooperative normal</b> actions include:</u></p> <ul style="list-style-type: none"> <li>• <b>Declaratory:</b> positive commentary or proposals by officials or senior leaders on prospects of low-level paramilitary cooperation (low scale, immediacy, and credibility of harm).</li> <li>• <b>Administrative/Legal:</b> procedural agreements for interaction, such as Memorandums of Understanding (increased credibility).</li> <li>• <b>Practical:</b> intensifying actual paramilitary cooperation, ranging from "hotlines" to engaging in minor joint exercises (escalating levels of immediate, credible, and larger-scale benefit).</li> </ul> <p><u>Increasingly <b>cooperative distinctive</b> include:</u></p> <ul style="list-style-type: none"> <li>• <b>Declaratory:</b> senior leaders' announcements of major forthcoming cooperative arrangements (low scale, immediacy, and credibility of harm).</li> <li>• <b>Administrative/legal:</b> formally agreeing to extensive paramilitary cooperative arrangements, such as sharing patrol responsibilities for an area over time (increased credibility).</li> <li>• <b>Practical:</b> intensifying actual paramilitary cooperation of a substantively higher nature than before, increasing from major and deeply integrated exercises to the overt reliance on partnering nations to provide constabulary services in the disputed area (escalating levels of immediate, credible, and larger-scale direct benefit).</li> </ul>
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Figure 3.8: A Territorial Dispute Focused Strategy Framework

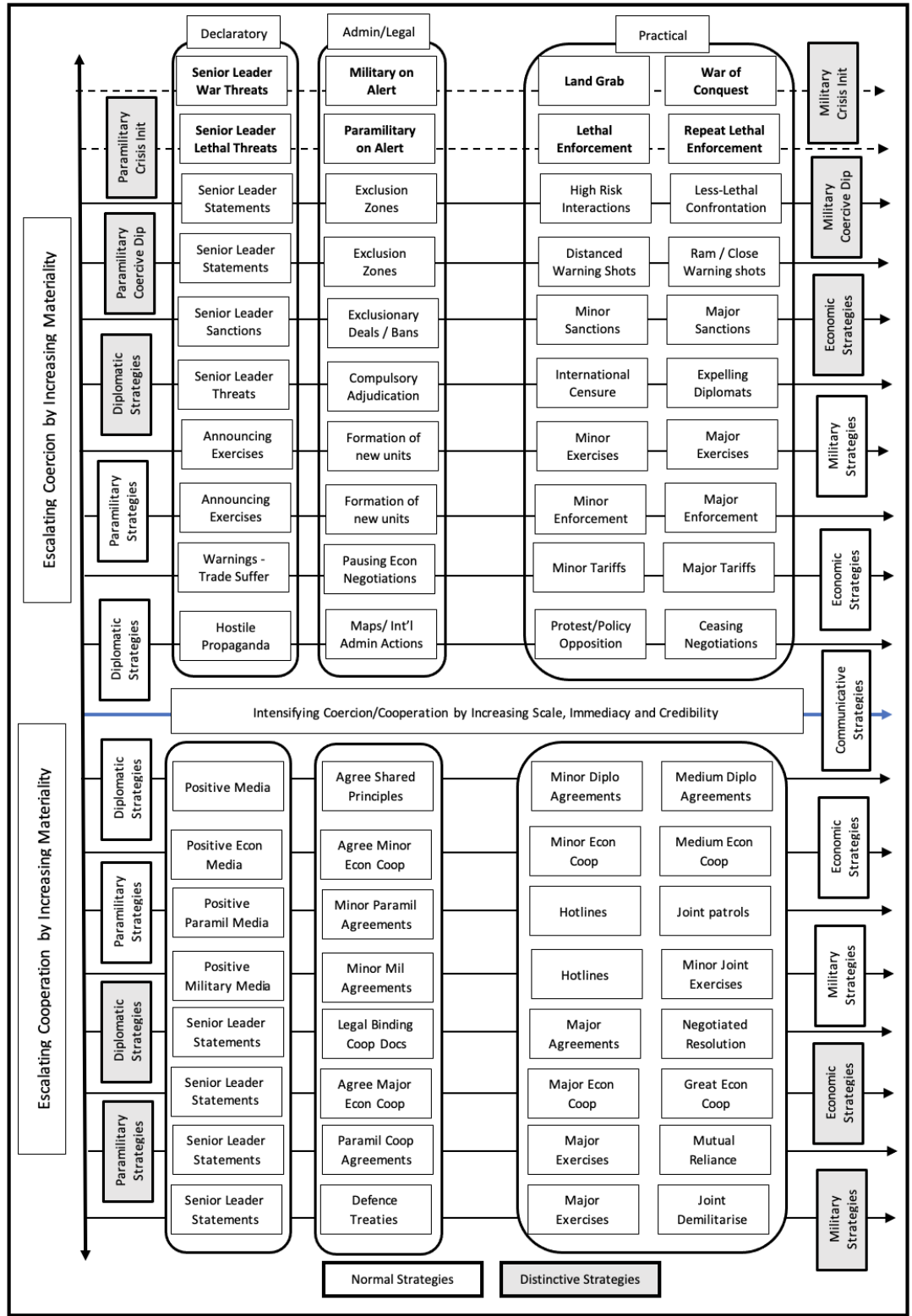
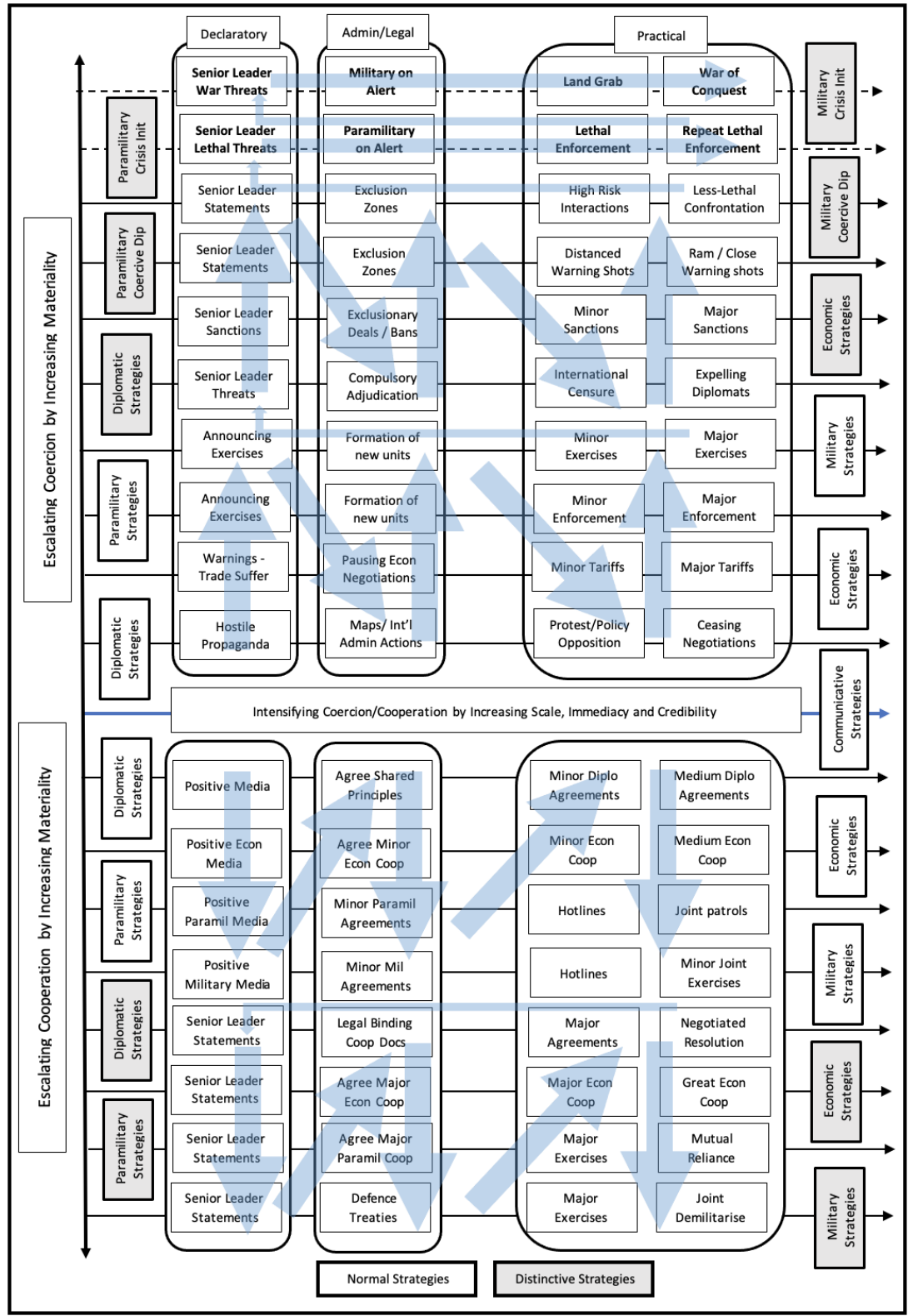


Figure 3.8A: A Territorial Dispute Focused Strategy Framework with Escalation Path



## **General Considerations of Territorial Dispute Strategy Preferences**

While detailed descriptions of the theories' preferences are provided below, as an overarching rule (and to avoid repetition) the previously discussed general scope and direction preferences are in effect unless noted otherwise.

Further, states' aims in territorial disputes are understood as being to keep their possessions and gain what they claim but do not hold. So, any actions that they undertake (relating to a specific piece of territory) can be understood as seeking to either maintain control of it, and maximise the degree of benefit obtained; or acquire it, and maximise the degree of benefit obtained short of this. Further, states are presumed to view other nations' actions through the above lens.

However, states are also understood to be rational, strategic and power-seeking. Thus, countries may offer to or actually rescind some of their control of territory (or their exclusive access to related benefits, such as resources) to, overall, gain power. states' motivations for this may include bolstering their peaceable international reputations, assessing that sharing access will enable them to exploit the area unmolested, or a true willingness to share resources and build collaboration.

## **Strategy Preferences: Offensive Realism, Balance of Power Theory and Power Transition Theory**

Before examining Revisionist behaviours in disputes, it is useful to describe such states' preferences for pursuing existing claims or fomenting new ones.<sup>128</sup> Due to their relentless need to quickly gain power at others' expense, which by Mearsheimer's analysis they can best do by literally gaining ground, such nations should (unless already regional hegemons) consistently initiate new disputes. This should occur regardless of the balance of power as staking a claim provides the pretext for subsequent action. Further, they should not allow existing disputes, where they seek conquest, to lie fallow. But for territory that they control, unless

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<sup>128</sup> Referring to disputes that are novel or appear to have little basis in the historical record.

provoked they are likely to allow such issues to abide rather than needlessly “pick fights” (potentially costly ones) to have others formally accept their de facto control.

### **Situations with Offensive Objectives**

Revisionists will seek to initiate at, or rapidly escalate to, the most coercive means available, aiming to resolve the dispute most quickly in their favour. This notably includes military coercive diplomacy and crisis initiation at opportune moments for violence, including by threatening (blackmail) or actually attempting conquest.<sup>129</sup> Since more territory provides greater power benefit, OR states will seek to conquer entire countries if this appears feasible, potentially using minor territorial disputes as pretexts for attack.

Regarding paramilitary options at opportune times, coercive diplomacy and crisis initiation should be preferred, notably including warning shots and lethal violence; and with maritime disputes such actions should occur close to other nations’ shores. This allows the aggressor to both portray itself as restrained (by not initiating military deployments), protecting its reputation, and allows any escalated reaction from the defender to justifying subsequent military action.

When the balance is not opportune, no more than distinctive practical economic coercive actions should be used, aiming to apply pressure while controlling the risk of an escalation to conflict. If a target nation responds with escalating distinctive paramilitary or militarised coercion, the OR state should then aim to match but not exceed such measures, eventually even being the first to de-escalate, such as by allowing the matter to lie fallow, and the Revisionist should not be the first to initiate violence. The OR state behaves in this way to showcase its peaceful nature

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<sup>129</sup> Of note an immediate resort to force is not uncommon. Altman (2017) observes that between 1918 and 2016, states gained small areas of territory 112 times by engaging in a land grab with no warning – that is, immediately using the most coercive means available, compared to only 13 where some threat of military coercion was used first. Likewise, Huth and Allee (2003), found that in 61 of 348 territorial disputes, the challenging state moved directly to the use of force.

while also seeking to show strength but avoid conflict. But if it is the target of actual violence it will respond in kind, and as strongly as possible.

Regardless of the balance of power, the OR state is unlikely to seek compulsory adjudications (in offence or defence) as such measures limit its ability to control outcomes, and indeed it should actively work to stymie a defender's efforts to use such mechanisms. Further, in all power scenarios distinctive coercive efforts are likely to be matched with extensive lower-level coercion.

The extent of cooperation should be strictly limited. The Revisionist should neither offer (to get its way) or accept (in return for decreasing its pressure) distinctive administrative or practical cooperation in the economic, paramilitary, or military spheres; particularly if such measures are proposed by the defender as a way to produce an enduring compromise. Such outcomes only reduce pressure on other claimants and raises risks of relative gains. Instead, Revisionists should demand exclusive privileges, and protest or even interfere with other claimants' efforts to economically harness the disputed area.

Of note, the Revisionist may, as part of a mixed strategy, initiate various entreaties to peaceful cooperation, or even engage in low-level agreements with a view to "enabling" future cooperation. But such measures are mainly to protect the OR state's reputation. And any practical cooperation is likely to be conditional on the dispute being resolved in the OR state's favour. Also, if the balance is not opportune, Revisionists may engage in limited cooperation in the area to gain *some* benefit from it. But they will not accept these as a way of indefinitely postponing the final resolution or in exchange for decreasing much pressure – they will always mix any cooperation with maintaining strong coercion.

### **Situations with Defensive Objectives**

In terms of actions that they initiate, Revisionists will engage in generic practical economic exploitation and control-enforcing behaviours such as building civilian, paramilitary or military infrastructure, or despatching patrols and conducting



exercises. As part of such control enforcement, the OR nation will also utilise the full range of coercive administrative and declaratory actions, such as declarations of sovereignty and printing maps claiming the area. Such self-initiated behaviours will span the full range of normal and distinctly coercive activities (including militarised strategies) and will occur regardless of the actions of other nations – the Revisionist is comfortable engaging in distinctive militarised coercion prophylactically, to ward off expected aggression from other states.

Being self-initiated there is no particular correlation between such actions and the Revisionist's position in the balance of power. Similarly, the state should also (regardless of the balance) readily engage in violence, including via lethal force, when protecting its territory against civilian poachers. However, the state may very well also initiate low-level cooperation, in the sense of declaring its interest in the peaceful resolution of disputes, or raise the prospect of future resource sharing – once the dispute is formally resolved in its favour.

When responding to other nations, if the OR state is being coerced, but not with distinctive paramilitary or military strategies, it should still rapidly escalate to the most distinctive coercive means available under the balance of power. That is, economic and diplomatic measures if the balance is inopportune, or (para)military means (that is, military and/or paramilitary) if it is. It should also seek to exceed the costs being threatened or imposed upon it, to demonstrate strength and that intimidation will not be tolerated.

Of note, if the OR state is responding to a threat (or action) that is of a distinctive paramilitary or military type, the state will respond in kind and with escalation even if the balance is unfavourable, to head off further threats. It will also seek reconquest of the territory (even years later) should it lose control.

Any response to offers of even normal practical cooperation from other claimants will generally be dismissive and coercive, to minimise the other's power gain and to not appear weak. At most, the OR state may, over the course of many negotiations, engage in cooperative diplomatic statements and even various administrative/legal

agreements, again “enabling” future cooperation, but with no intent of practical realisation. And the controlling state will avoid practical distinctive cooperation.

### **General Effects of the Balance of Power**

The Revisionist’s strategy will fluctuate with its specific balance of power against other states, potentially leading to varying behaviours where it has multiple claims against many states at one location, one state at many locations, or combinations thereof. Also, there is no benefit to holding back coercion at one area, such as due to fearing it might prompt an attack elsewhere, as under OR all states expect all others to attack as soon as possible. This is particularly so considering the vital nature of territory to OR: opportunities to gain ground must logically be seized even if they increase risk elsewhere. Of course, the power characteristics of opportune moments for aggression are reversed for BOP vice PTT states.

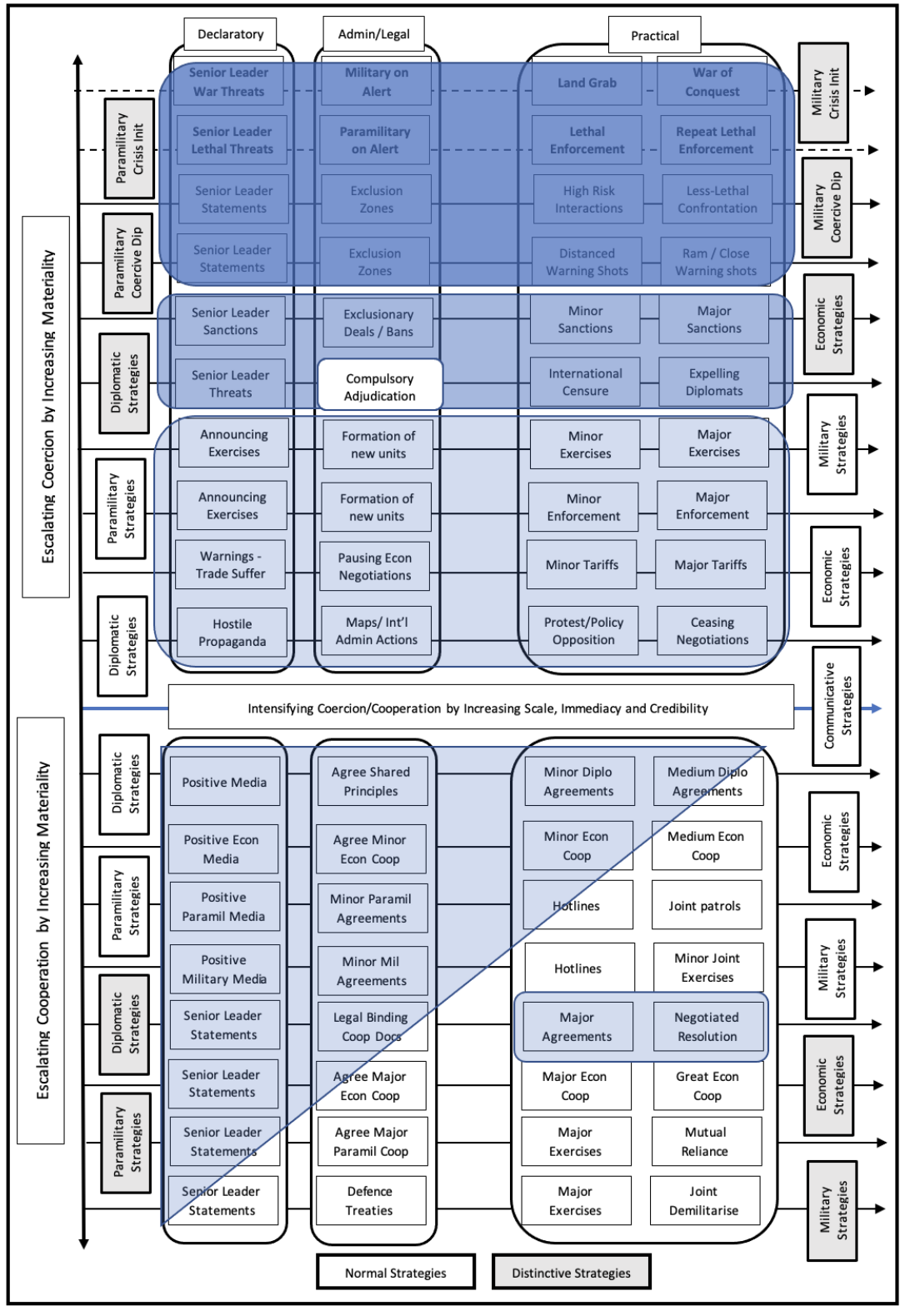
### **Strategy Preferences Diagram**

These various considerations are presented in [Figure 3.9](#) on the following page. The diagram represents the strategy preferences for an OR state in a favourable (opportune) position in the balance of power.

### **Strategy Preferences: Gains-Sensitive Defensive Realism**

Opportunistic states should not constantly initiate new disputes. Since the constant accumulation of power is likely to cause countervailing coalitions, starting new disputes is likely to be counterproductive. Also, due to the lack of a need to gain power quickly, DR(GS) nations can afford to allow existing offensive claims to abide if the prospects for resolution appear inauspicious. Instead, a delay, or a change of direction may provide a more efficient resolution. Likewise in territory that they control, they are likely content to allow disputes to lie fallow unless reacting to other states.

Figure 3.9: OR Territorial Dispute Strategy Preferences



Of note, various authors have argued that DR(GS) states may initiate new territorial disputes and violently pursue them. These include Tang (2010a) and Waltz (1979), who argue that powerful but generally Status Quo nations might still be tempted to violence to gain significant benefits at low cost.<sup>130</sup>

While DR(GS) states can engage in such activities, attempts to do so should logically be rare and limited in geographical extent, due to the factors constraining violence. So, even minor attacks raise the strong risk of a costly reaction<sup>131</sup> and any expansion risks countervailing coalitions – with the more power gained, the more likely the coalition. So, DR(GS) states should minimise the number and extent of annexations.

### **Situations with Offensive Objectives**

Opportunistic states will use strongly mixed strategies to gain their objectives, including concurrent use of many coercive and cooperative strategies, or potentially favouring mainly cooperative or coercive ones for periods but alternating over time. Either way, they will vary their activities and seek to avoid large costs. For coercion, such nations will engage in the various normal means available to them. In maritime disputes this can include their militaries loitering and exercising in waters claimed by others. They will tend to respond to normal coercion from a defender in kind.

Regarding cooperation, they should be willing to initiate, respond positively to proposals for, and engage in some degree of practical normal economic and even paramilitary or military collaboration (such as joint patrols) to gain benefit from the area while it remains outside of their control. And if prospects for a resolution appear unpromising, the DR(GS) nation might engage in cooperation indefinitely.

Status Quo states should generally avoid initiating distinctive coercive or, especially, cooperative behaviours; fearing unnecessary costs and the potential for relative

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<sup>130</sup> For other arguments see also Jervis (1978), Taliaferro (2000), and Elman (1996).

<sup>131</sup> Altman (2017) notes that nearly half of all land grabs between 1918 and 2006 resulted in either retaliatory land grabs or war.

gains. And if the defender offers distinctive cooperation in exchange for the Status Quo country ceasing its pressure, the DR(GS) state should generally demur.<sup>132</sup>

If, instead of cooperation, the controlling nation responds to the Opportunistic state by initiating distinctive non-militarised coercion, the DR(GS) country should first match this, so as not to appear weak, but aim to de-escalate over time to avoid unnecessary costs. Alternatively, if the defender's response is distinctive (para)militarised coercion, the DR(GS) state should promptly seek to restrain further inflammation, such as by allowing the issue to go fallow or responding with less escalated actions.

The exceptions to these predictions are, firstly, the infrequent use of distinctive coercion by DR(GS) states pursuing a strongly mixed approach. And if such acts occur at an propitious power balance for conquest, then they may (but are far from certain to) include paramilitary<sup>133</sup> or even militarised strategies that result in the capture of territory via land grabs.<sup>134</sup> But in such "ad hoc" usages of coercion the Status Quo nation is likely to back down if challenged (aside from where it has captured terrain), as it has not decided definitively to attack.

Alternatively, the state may, having progressed through lower levels of coercion, initiate and slowly escalate distinctive coercion as part of a deliberate path of gradually increased pressure. These acts may potentially include paramilitary and militarised behaviours if the nation is at an opportune balance of power for conquest. In the latter scenario, this approach will include firstly distinctive coercion and then crisis initiation via acts such as lethal paramilitary enforcement actions,

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<sup>132</sup> In general, OR and DR(GS) states' unwillingness to accept offers of distinctive cooperation can be understood in terms of this being proposed by a defender in exchange for their ceasing of efforts to gain control or limit the defender's ability to exploit the location. For the Revisionist or Status Quo nation, such a bargain offers too high a risk of relative gains. Of course, OR and DR(GS) states will propose and accept major cooperation where they cannot influence an area at all; but in such situations it is unclear why a defender would engage with such behaviour. The exception is a DR(GS) nation sure of another's peaceful bona fides, but this too excludes DR(GS) and OR states.

<sup>133</sup> Paramilitary behaviours are included due to their potential for violence and hence crisis initiation.

<sup>134</sup> Noting again Altman's (2017) observation that 112 land grabs occurred from 1918 to 2016 with no prior threat of using military force. Such scenarios would apply to DR(GS) and OR states.

military blackmail, and finally limited land grabs. And as part of this, the Status Quo country may well respond even to distinctive non-(para)militarised or (para)militarised actions by the defender with more escalation in turn.

### **Situations with Defensive Objectives**

As with OR states, Opportunistic nations should initiate the full range of practical normal exploitation and control-enforcing behaviours, including acts such as making declarations of sovereignty and print maps claiming an area. They may also occasionally initiate distinctly coercive acts, but these should be rare and focussed on non-militarised activities, to minimise costs, although paramilitary measures may occur. In the economic defence of their territory from civilians (such as poachers) such states should also generally avoid potentially lethal or lethal actions but be willing to escalate to them after using less dangerous measures initially, to send a strong defensive message. Again, being unrelated to actions by other states, such behaviours shed little insight into such nations' BOP or PTT leanings.

The DR(GS) state may also initiate offers of cooperation. This can be motivated for reasons ranging from reputation to enabling its exploitation of the territory without being pestered by other claimants. But the extent of any eventual collaboration will be limited over concerns for relative gains.

In responding to other nations, the DR(GS) state will use mixed strategies, showing restraint or escalation for normal actions, depending on its assessment of what response will best serve its goals. But in general, if being coerced it should aim to match confrontation with confrontation. Yet it should avoid being the first to initiate escalation to distinctive strategies, instead matching its adversary, and once in this realm it should not be the first to escalate further, ultimately seeking a decrease in tensions.

Despite the above, if pursuing an opportunistic mixed strategy, the Waltzian nation may infrequently respond by initiating distinctive non-(para)militarised coercion, or

if the balance of power is opportune, even practical (para)military actions, although it will seek to de-escalate if these strategies do not deliver the intended results. In turn, if pursuing a deliberate strategy of increasing defensive confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if the aggressor matches its coercion, even progressing to militarised strategies if at an opportune balance of power. Of course, under either approach, the state ultimately is using such measures to head off further threats. And regardless of the balance of power, the Status Quo state will defend itself strongly if attacked and seek reconquest of the territory (even years later) should it lose control.

If approached with offers of cooperation, the DR(GS) state should respond in kind to some degree, otherwise states would be more inclined to attempt coercion. The Opportunistic nation should engage in agreements for, and even a degree of practical normal economic, paramilitary, or military measures. But distinctive practical cooperation should be avoided, noting risks of relative gains and the nation's interest in maintaining substantive control.

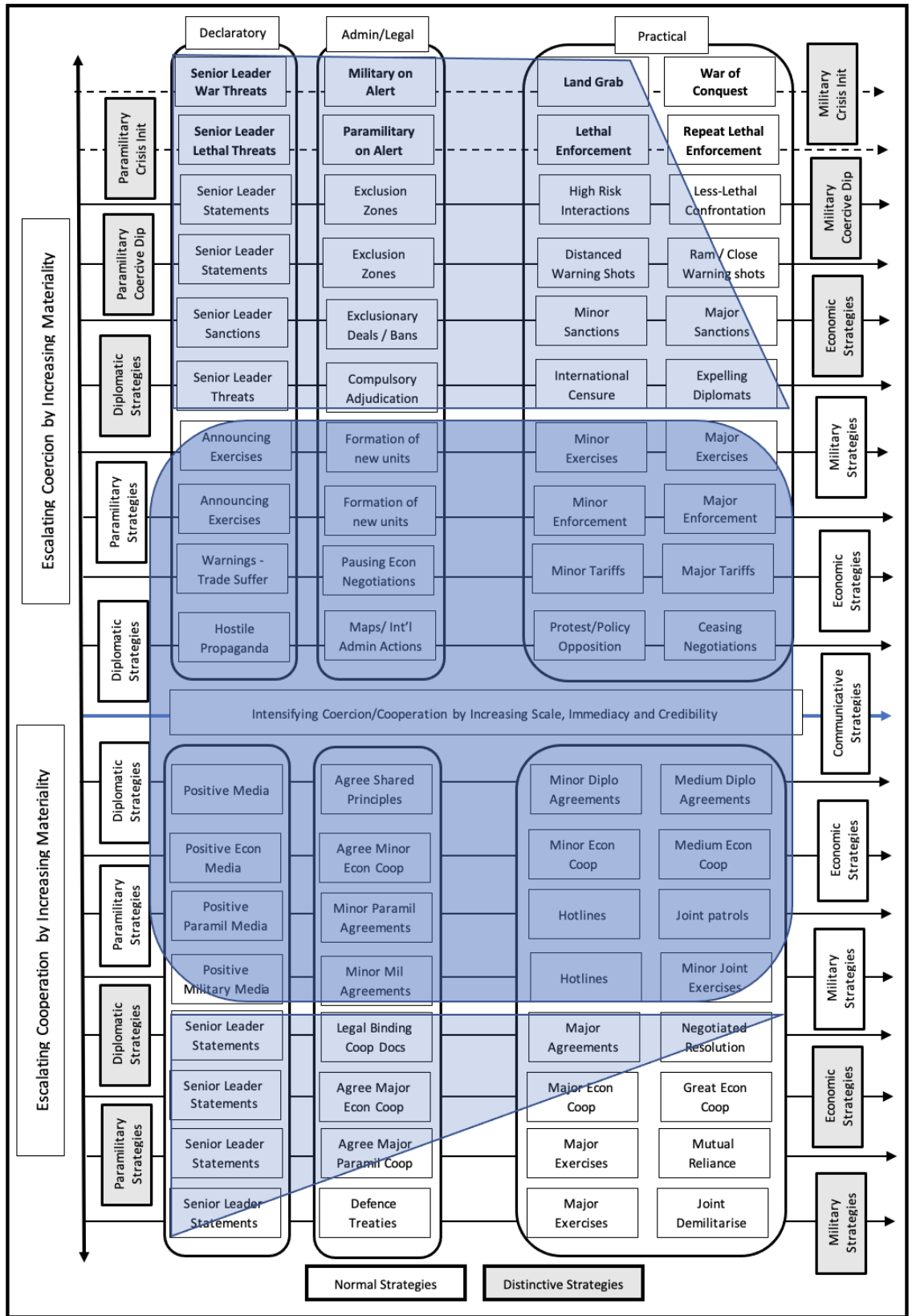
### **General Effects of the Balance of Power**

The DR(GS) state's strategies should be little affected by the balance of power. The main impact is that when the balance is not opportune, DR(GS) nations should be unlikely to initiate distinctive paramilitary or militarised coercion. But even when such behaviours occur, they should be notably infrequent in comparison to their ready use by Revisionists. Status Quo nations should refrain from attacking at one location if this might prompt a (avoidable) counterattack at another: as power does not need to be gained incessantly, there is less urgency of conquest. Of course, the power characteristics of opportune moments are reversed for BOP vice PTT states.

### **Strategy Preferences Diagram**

The various considerations discussed above are shown graphically for a DR(GS) state in [Figure 3.10](#) on the following page.

Figure 3.10: DR(GS) Territorial Dispute Strategy Preferences





### **Strategy Preferences: Gains Less-Sensitive Defensive Realism**

Due to their focus on displaying peaceable behaviours and avoiding coercion, DR(GLS) states should not initiate new disputes. And they will display varying degrees of persistency in initiating efforts to resolve existing ones where they have offensive objectives, depending on whether they assess such efforts are being productively received. For territory they control, they should be content to allow such issues to abide unless reacting to other states.

#### **Situations with Offensive Objectives**

Genuinely Peaceful states are likely to seek to gain territory, where such disputes exist, almost entirely through cooperative measures. This includes offering, and engaging in, distinctive collaborative economic, paramilitary and military behaviours with the controlling nation and/or other competing claimants, and on terms favourable to the other states. They should be willing to engage in escalating cooperation while seeking mutually agreeable resolution.

In turn, any use of coercion should be strictly limited, and DR(GLS) nations should *never* initiate distinctive coercive (para)military threats or attacks for the sake of conquest – the hallmarks of Revisionists.<sup>135</sup> At most, Peaceful states may engage in a degree of normal paramilitary presence in a disputed area, such as to prevent activities by poachers.

Peaceful nations should also respond well to offers of extensive collaboration from the controlling or other claimant states. And if faced with threats or hostile actions they should react with restraint – aiming to decrease the level of hostility.

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<sup>135</sup> As noted previously, DR(GLS) nations may engage in pre-emptive attacks on adversaries in some very rare circumstances for self-defence. However, this should not be done with the aim of achieving conquest; so, an attack to degrade an opponent's military should not be followed by seizing land.

## Situations with Defensive Objectives

Peaceful states should engage generic control-enforcing behaviours (including military ones, if the disputed is militarised<sup>136</sup>) regardless of the actions of other nations, including printing maps and statements of sovereignty, though avoiding initiating distinctive coercion. In protecting their territory against poachers, the state should almost always avoid lethal force, seeking to capture or drive off threats. And DR(GLS) nations may also initiate cooperation in areas they control, motivated by an interest in achieving distinctive levels of genuine collaboration.

When responding to other nations, if the state perceives it is being coerced, it should generally act with restraint, matching coercion with decreased coercion or even conditional offers of cooperation. However, it might infrequently respond to non-(para)militarised coercion with increased coercion, such as escalating to a formal protest in response to some declaratory action. But it should avoid escalating to any form of distinctive coercion, let alone a (para)militarised threat.

More broadly, DR(GLS) nations should favour non-militarised coercion when responding to other forms of coercion in general, if they engage in such measures at all. But if the Peaceful nation decides it faces an incorrigible Revisionist, it may use (para)militarised acts almost entirely, recognising that only force will be effective. But even then, it should almost never initiate distinctive (para)militarised coercion, only using such strategies in response. On this matter, when faced with distinctive (para)militarised coercion, the Peaceful state will respond in kind but generally with a lower level of coercion. But it will, of course, also defend itself strongly if attacked. It will also seek the reconquest of territory (even years later) should it lose control and the occupying state reject its other entreaties.

Finally, in response to cooperation, the DR(GLS) state should willingly engage in and escalate to even distinctive economic, and (para)military measures. But it may not

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<sup>136</sup> That is, there has been a distinctive threat, display or use of military power regarding the dispute.

to do so if it perceives nations only seek to exploit its goodwill and may respond with degrees of coercion, especially if it assesses that an offer of cooperation over a territorial claim (such as a new one) is an attempt by another state to seek benefits.

### **General Effects of the Balance of Power**

The balance of power should little affect the behaviour of DR(GLS) states. They should favour cooperation over coercion, if they have power superiority or not.

### **Strategy Preferences Diagram**

These considerations are shown for a DR(GLS) state in [Figure 3.11](#) on the next page.

### **Further Considerations**

#### **Weak States**

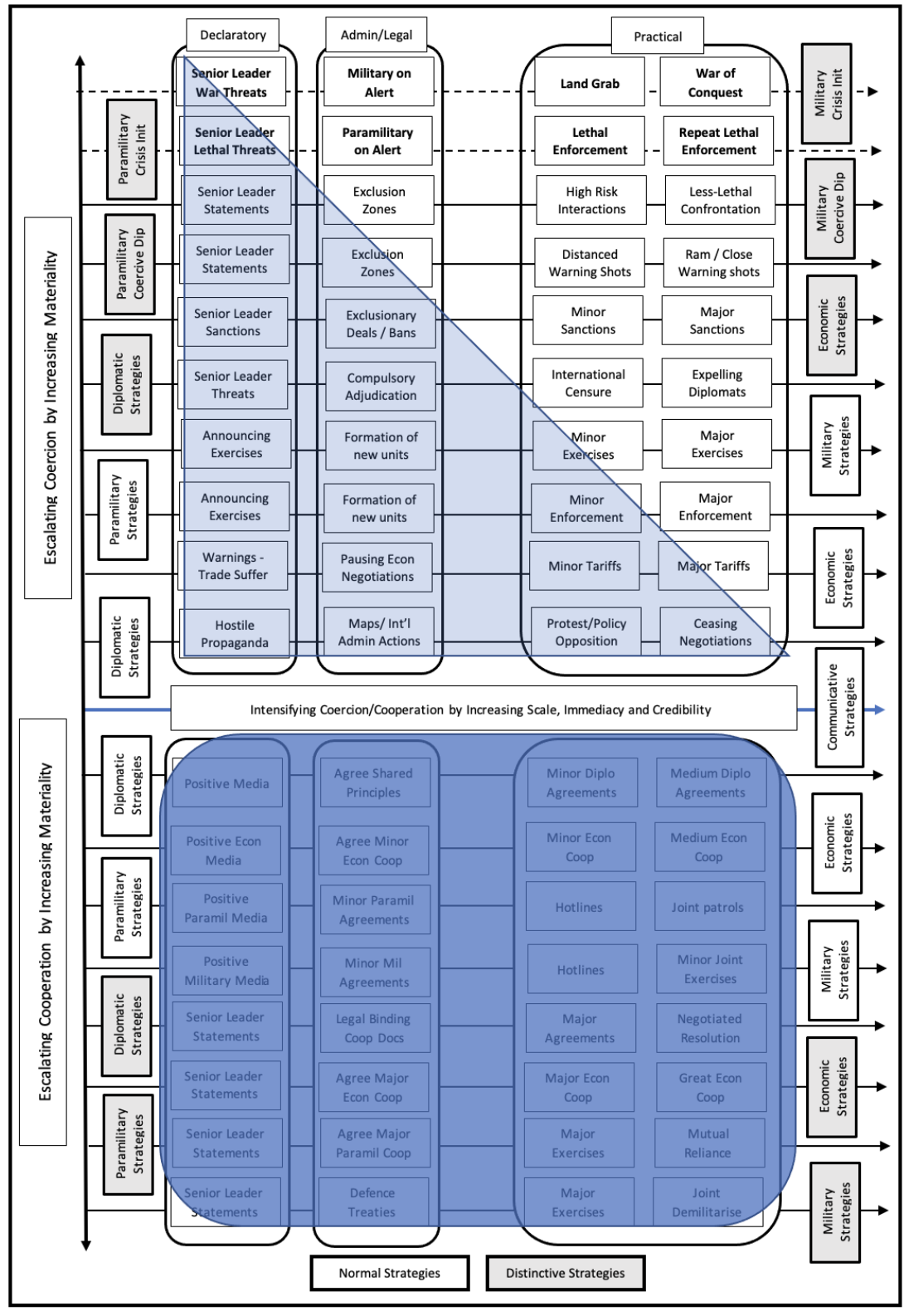
The territorial preferences proposed for state-types apply to nations of not too dissimilar power, defined as those dyads that have at least broad parity in chances for military victory at the location where they may come into conflict.<sup>137</sup> Otherwise, nations are defined as weak, and the predictions are of little use for theory testing since all such states should behave like DR(GLS) nations to minimise their chances of entering unwinnable conflicts. However, such nations should still defend highly salient territory as there is always some chance of success – and the state's survival may depend on it. It is worth emphasising that countries may concurrently have broad parity or weakness with different nations at various locations and times.

Further, weak nations should be willing to favour compulsory adjudication, especially where they have offensive objectives. This reflects that such states have little to lose in these instances, being unable to exert their will in other ways.

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<sup>137</sup> This definition reflects both Realism's focus on military force and the particular applicability of such force to resolving territorial disputes.

Figure 3.11: DR(GLS) Territorial Dispute Strategy Preferences



## **Salience**

Finally, territory can have varying value, which is referred to in the academic literature as salience: the higher the salience, the more valuable the land.<sup>138</sup> A salient territory can be identified by ways including its hosting of a permanent population, the (confirmed or believed) existence of valuable resources, and the economic or military value of the territory (Hensel, 2001, p. 94).

Salience logically affects nations' strategies: if land has low salience, rational states should be less likely to incur cost and risk to gain or keep it. To provide a common baseline, the behaviours described above all relate to situations where land is presumed to have high salience, a presumption realised in practice in the SCS.<sup>139</sup>

### **Model Summary and Assessment Tool for Conducting Focussed Comparisons**

The above descriptions provide a range of scope, direction and activity persistence differences for state-types in territorial disputes as affected by the balance of power. These are summarised in Table 3.4 below, which aligns state-type behaviours with balances of power. Of note, grey cells show where behaviours are insufficiently distinctive to support identifying underlying motivation.

This summary format (and the detailed work it represents) provides a key predictive and assessment tool for the dissertation. When joined with the power assessment method developed in Chapters Four and Five, Table 3.4 allows for the prediction and assessment of state behaviours as, is conducted in Chapters Six and Seven. That is, for any dyad, once a state's relative power and objectives at a particular location are determined, its behaviours can be predicted and then compared to the table to assess its motivations. And the more that behaviours forecast by any theory are correct, the greater the theory's explanatory power for *if, how, and when*.

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<sup>138</sup> More broadly, salience is defined as "the extent to which (but principally, the intensity with which) peoples and their leaders value an issue and its subject matter" (Hensel, 2001, p. 83).

<sup>139</sup> As is discussed in Chapter Six, the area has high economic, military and resource salience.

Table 3.4: Summary State-Type Behaviours in Territorial Disputes

Power Inferiority	Power Parity	Power Superiority
<p><b>Irrational State:</b> Initiate and respond with distinctive coercive actions.</p> <p><b>OR/DR State:</b> Focus on Cooperative resolution.</p> <p><b>OR/DR State:</b> Defend in face of military attack.</p>	<p><b>OR(PTT):</b> Focus on initiating and responding with escalating distinctive coercive <u>(para)militarised</u> strategies, including <b>major conquest</b>.</p> <p><b>OR(BOP):</b> Focus on initiating and responding with escalating distinctive coercive <u>non-(para)militarised</u> strategies.</p>	<p><b>OR(PTT):</b> Focus on initiating and responding with escalating distinctive coercive <u>non-(para)militarised</u> strategies.</p> <p><b>OR(BOP):</b> Focus on initiating and responding with escalating distinctive coercive <u>(para)militarised</u> strategies, including <b>major conquest</b>.</p>
	<p><b>DR(GS)BOP:</b> Focus on initiating, and responding in kind to, normal coercive or cooperative strategies. Will use strongly mixed strategies. Will respond in kind to distinctive coercion in defence; but show restraint in offence.</p> <p><b>DR(GS)PTT:</b> As for DR(GS)PTT at power superiority, but may initiate and respond with escalating distinctive coercive strategies, including <b>minor conquest</b>, in offence should normal strategies fail.</p>	<p><b>DR(GS)BOP:</b> Same as for DR(GS)BOP at power parity, but may initiate and respond with escalating distinctive coercive strategies, including <b>minor conquest</b>, in offence should normal strategies fail.</p> <p><b>DR(GS)PTT:</b> Focus on initiating, and responding in kind to, normal coercive or cooperative strategies. Will use strongly mixed strategies. Will respond in kind to distinctive coercion in defence; but show restraint in offence.</p>
	<p><b>DR(GLS):</b> Focus on initiating and escalating cooperative strategies, including to distinctive levels, and show restraint in response to coercion.</p>	
	<p><b>OR/DR State:</b> Focus on general control-enhancing behaviours in occupied territories.</p>	

*Notes: Offensive Realism (OR), Defensive Realism (DR), Power Transition Theory (PTT), Balance of Power Theory (BOP), Gains Sensitive (GS), Gains Less-Sensitive (GLS). Grey cells are actions unsuited to differentiating state-types. Beyond the actions above, an OR state should consistently initiate new disputes and pursue existing offensive ones. A DR(GLS) state should not initiate new disputes, and may allow existing offensive ones to lie fallow. A DR(GS) state may occasionally initiate new disputes, and intermittently pursue existing offensive ones.*

In this way, Table 3.4, provides the common question (or questions) that are applied to the evaluation of the 1,371 annual case studies of behaviour conducted in Chapter Seven as the focussed comparison part of the assessment methodology. Simply put, for each year of a state's behaviour, which models' predictions does it best align with? Of course, since the contents of the table include the potential to

escalate to war, and are crafted to be sensitive to balances of power, the potential to address all the dissertation's key queries is inherent in them.

Once outcomes are finalised, the research questions of *if*, *how*, and *when* are then assessed quantitatively via the six strong and weak queries in Chapter One. Selected elements of the above work are also able to be incorporated into these, as follows:

- The strong test of *if* asks what proportion of “wars” are initiated by, or conducted consistent with, states behaving in alignment with DR(GLS), DR(GS) or OR. This can now be analysed against [Table 3.4](#), with “war” hereafter defined as either of the practical means of militarised crisis initiation (land grab or major war), reflecting the potential of the former to lead to the latter.<sup>140</sup> This would also be applied if an analyst used [Figure 3.3](#).
- The weaker test of *if* asks what proportion of nations can be positively identified as Peaceful, Opportunistic or Revisionist states. This can now be supported by considering multi-year patterns of state-type results to test for consistency as balances of power shift. Rapid change towards militarisation is predicted by OR, whereas DR predicts more stable and consistent strategy choices, and hence state-type results.
- The strong test of *how* asks what proportion of states' behaviours aligns with various theory predictions; or is instead classed as irrational. Irrationality is hereafter defined as initiating or escalating distinctive coercion when at power inferiority.
- The weaker test of *how* asks whether any states can be identified as irrational.

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<sup>140</sup> Noting again Altman's (2017) observation notes that near half of all land grabs between 1918 and 2006 resulted in either retaliatory land grabs or war.

- The strong test of *when* asks what proportion of instances of war occurred in alignment with BOP vice PTT.
- The weaker test of *when* asks what proportion of aggressive behaviours short of war but risking escalation to it aligned with BOP vice PTT. Such sub-war behaviours are now considered to include all (para)military coercive diplomacy and crisis initiations actions, excluding the practical militarised means already counted under war and control-enforcing actions. This reflects that coercive diplomatic actions still run the risk of escalation in a very real way. Also included are annual patterns of behaviour composed primarily, or persistently, of distinctive economic and diplomatic coercion. Such actions are typical of an OR state *not* at an opportune balance, thus too indicating a nation's appreciation of BOP vice PTT.

### **Conclusion**

This chapter has sought to meet the first key requirement for investigating DR(GS)BOP, DR(GS)PTT, DR(GLS), OR(PTT) and OR(BOP) by examining state behaviour in territorial disputes: the provision of theory-characteristic strategy preferences. These preferences, defined in terms of scope and direction for both strategies in general and those used in territorial disputes in particular, provide the most complete, detailed and structured such representations in the scholarly literature, to the best of the author's knowledge.

To achieve this, the chapter commenced with a review of strategies and a range of key associated terms, reflecting that such crucial concepts both lack scholarly agreement and also remain undefined even in key works in Realism. As noted, in this dissertation strategy primarily refers to the deliberate paths of action that states harness to pursue specific foreign policy goals, but can also be used to refer to the predominant types of actions that nations use in conducting their strategies (such as a diplomatic in comparison to a militarised strategy).



The chapter then examined the desirable qualities for any improved behavioural continuum that could be used to define theory-specific strategy preferences in a structured way. These included that a framework should arrange strategies based on their increasing degree of impact on survival, ideally harness the full scope of strategies (i.e., diplomatic, economic, and military), rank strategies based on their *inherent* ability to harm or support survival rather than by proportionality, and be based on clear, broadly applicable and well-defined principles. The chapter then defined just such a continuum based on the principles of materiality and intensity, supported by a refined definition of state survival (based on territory, sovereignty and citizen's lives). Through this process, the chapter provided several other key conceptual and practical novelties, and indeed as a chapter it contains the largest number of creative contributions in this dissertation. These include:

- new concepts for, and examples of, normal and distinctive strategies;
- a refined principles-based and two-dimensional conceptual approach to organising strategies, allowing for the dynamic and structured use of all grand strategy types, the definition of mid-range behaviours, and the development of situation-specific frameworks;
- a pair of structured frameworks of coercive and cooperative strategies, for both general scenarios and territorial disputes;
- the conceptual approach of mapping and testing theory-specific strategy preferences via scope and direction; and
- mapped predictions against the two frameworks for the five theories under investigation, defined in terms of scope and direction.

With this work, the conceptual portion of this dissertation regarding strategies is now concluded. The succeeding two chapters focus on the next key task, the development of an improved means for measuring the balance of military power.

## **Chapter Four – A Review of the Measurement of Military Power**

As noted in previous chapters<sup>141</sup>, once specific predictions have been developed for the various theories under consideration, the second key requirement for a strong test of these forecasts is an effective means to measure military power. This is vital since such power is the key independent variable under OR and DR (capturing BOP) and PTT, let alone Realism in general. In practice, previous efforts to assess these theories have been hamstrung by use of inappropriate gauges for this factor, which has also hindered Realist theory testing overall.

This chapter investigates these issues and lays the foundation for an improved measure of military power and associated analytical approach. The chapter is divided into three sections. The first examines the importance of military power to Realism and the diversity of conflicting measures used to assess it. It argues for the necessity of a best practice (i.e., structured) and principles-based approach centred on gauging the potential for specific operational successes. The second section is a literature review of key existing means of measuring power, including those used by OR, DR and PTT, to highlight existing efforts and identify contributions to an enhanced approach. The third section develops a list of key operational success factors based on consideration of 24 Net Assessments (NeA) of military power. These form the basis of the practical model discussed in detail in Chapter Five.

### **Section I: Power and Military Power in International Relations**

Before discussing power and military power in detail it is useful to briefly review the reasons for their importance in theory and scholarship, and most importantly in Realism – since this paradigm is the focus of this dissertation a Realist approach will

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<sup>141</sup> In particular Chapter One, Section III.

be discussed hereafter. As in previous chapters, key terms and concepts are ***bold italicised*** in the text, with more detailed exposition for the reader in [Table 4.0](#).

Regarding the importance of power in IR, its prominence is undeniable. It is noted by many scholars (Realist and otherwise) as arguably *the* central concept in studies of world politics while also lacking any universally agreed definition (Stoll & Ward, 1989, p. 1; Mearsheimer, 2014 p. 55; Carus, 1987, p. 17; Wohlforth, 1993, p. 2).

Power is of such great interest due its conceptual meaning: the *capacity* for one party to exercise influence or control over the behaviour of others, or to resist such effects (Holsti, 1995, p. 118; Wohlforth, 1993).<sup>142</sup> States of course use their power in their strategies to pursue their foreign policy objectives. And since IR focusses on such interactions (i.e., where nations attempt to influence one another to achieve certain ends) to a great degree, the concept of power is understandably central.<sup>143</sup>

In turn, power is comprised and measured by a nation's stock (compared to other states) of the diplomatic, economic, and military resources that it can use to exert or resist influence by threatening (or promising) costs or benefits (Mearsheimer, 2014; Waltz, 1979). So, power is relative: two states with roughly even capabilities will concurrently be approximate power peers to each other, more powerful than some countries and weaker than others. And the comparative ability of nations to influence each other describes their position in a particular balance of power.

### **Military Power and Realism**

Under Realism's state-centric focus, discussions of "power" typically relate to "national power", with this describing countries' overall capacity to exert influence over others (Mearshiemer, 2014). Since there are various means available, a

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<sup>142</sup> This meaning, and its measurement by examining resources, is also referred to as the "material" definition. A separate so-called relational definition and measure of power also exists but is little used in Realism and hence not discussed here. For a brief examination, see Wohlforth (1993).

<sup>143</sup> For a discussion see Dunne et al. (2010).

country's national power is generally considered the summation of its potential across these various components (Wohlforth, 1993; Carus, 1987). But of the many avenues, arguably the most important is military power. Indeed, Mearsheimer proposes that "For realists [sic], international politics is synonymous with power politics ... [and] power is mainly a function of ... military assets" (2010a, p. 78).

The ***primacy of military power*** to Realism reflects both the aims of the Paradigm (to explain and predict the acts of rational, survival-seeking states in an anarchical world) and that such power forms the primary threat to survival. This is based on militaries' unique ability to directly (and hence rapidly) and certainly destroy or conquer the vital assets nations need to exist: their territory, industry, militaries, and citizens. Indeed, military power can be defined as the potential for one state to exert (or resist) coercive influence on another by threatening (or withstanding) violent action against its vital assets.<sup>144</sup> As a result, military power provides, firstly, the most direct and certain means to extinguish states' very lives.<sup>145</sup> And beneath this drastic outcome, violence offers the only means to impose such great, rapid, and certain costs that nations may rapidly *choose* to change their behaviour or can be *forced* to – including by destroying the assets they use to pursue some path of action. Further, the chance of conflict is ever present in an anarchical system: almost all nations have some military capability, and so retain the option of force.

These impacts help explain military power's role as Realism's key variable in understanding important elements of nations' foreign policy behaviour that relate to force.<sup>146</sup> So, firstly, all nations should be concerned about armed threats to their survival in general, and act in explicable ways to address these. Such concerns help explain broad patterns of activity, such as the pursuit of alliances, engaging in arms races, or the occurrence of wars (Waltz, 1979; Mearsheimer, 2014).

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<sup>144</sup> A definition based on the author's considerations and reflecting related discussions and definitions including Biddle (2004), Tellis et al. (2000) and Carus (1987). Mearsheimer in particular considers military power to be states' potential for offensive armed action (2014, pp. 30–32, 56–57).

<sup>145</sup> In the sense of being self-governing entities with defined boundaries, the survival of their citizens, or both.

<sup>146</sup> In the sense that behaviours related to military power inherently involve matters of life and death, at times for millions of people, and the investment of vast sums of resources in armed forces.

Further, states' positions in military balances of power (i.e., their own potential to successfully apply force) can explain rational nations' actions in specific situations. For example, as noted in Chapter Three, Mearsheimer (2014) argues nations should pursue violent conquest when "cheap and easy" victory is possible, or work to weaken other nations when it is not. And Waltz too argues that power superiority can tempt otherwise Status Quo states to aggression (1979). In such instances, states' relative military power is logically the key variable that influences whether using force is rational. More broadly, such concerns should influence nations' strategies on a range of issues. Countries should be careful about how bellicose they are, and the risks they run in escalating to conflict, if they believe their chances for armed success are low. In turn, they may be tempted to just such behaviours if they assess their chances are high; after all, armed power should be a prime mechanism to obtain or force compliance. Such considerations help explain Waltz's observation that the potential for the (successful) use of force holds a position of pre-eminence in determining how states pursue their objectives (Waltz, 1979).

Further to the above, *measuring military power* is key to Realism's aim to explain and predict the behaviour of states. For nations to survive in general (or pursue specific foreign policy goals successfully) they must use military power rationally, to maximise benefits and minimise costs. And to do so, nations must somehow predict if they will likely succeed in applying or resisting violence,<sup>147</sup> with this potential expressed in their position in any particular military balance of power. Thus, to act sensibly, states should seek to constantly assess their rankings in various balances; and to accurately predict their behaviour, Realism must do likewise.

### **Militarily Relevant Objectives**

As noted in Chapter Two, and reflecting its focus on military power, Realism already centres on and claims particular explanatory and predictive power for Security

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<sup>147</sup> Although as noted by Mearsheimer (2014, pp. 58–60), and discussed extensively in this chapter, any military power assessment can have only a rough correlation with the likelihood of actual victory due to the diversity of factors involved in its measurement and the complexity of their interactions.

Studies issues (i.e., on subjects closely related to the use of armed force). This thesis further proposes that assessments of military balances of power, associated Realist efforts to explain and forecast state behaviour, and attempts to test such works, can usefully be focussed on what are termed ***militarily relevant objectives***. These are defined as nations' specific foreign policy goals that are suitable to be directly resolved in whole or in part by armed power's means of affect: the application of violence. For example, a state aiming to degrade another country's atomic weapons program can do so directly and with high certainty in whole or in part by destroying all or some of its nuclear facilities – at least if it assesses such attacks are likely to succeed. Similarly, a territorial dispute can be resolved through an act of conquest.

The focus on such goals is proposed (and indeed used here) because in these instances the use of armed power is more rational. This reflects that for a certain more quantifiable short-term cost (involved with the immediate use of force) a nation can with high certainty (i.e., lower risk) achieve its desired end.<sup>148</sup> Of course, military power can be (and often is) used more indirectly, to achieve some goal not immediately related force – seeking to threaten (or impose) such costs on another nation that it submits on some issue. However, the use of force in such situations is less rational as its costs and outcomes are more uncertain: there is no clear relationship to how much power (and hence cost) must be expended by the attacker to achieve its goal. Also, an aggressor may face further reputational costs if it uses disproportionately coercive strategies, such as threatening violence to convince a nation to sign a trade agreement.

As a result of the use of armed power being more rational when there are militarily relevant objectives, its employment becomes more likely, allowing for the more determinate forecasting (and stronger testing of) Realist state behaviour. This is because in other scenarios, where armed force has lower utility, any predictions for the use of military power (such as by OR states) are simply less likely to be observed – one of the key causes of indeterminacy noted in Chapter One.

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<sup>148</sup> Although, of course, such actions (as do any uses of force) run the strong risk of escalation to further conflict, which should introduce a measure of caution into the willingness to use such means.

## **Military Power in OR, DR, Motivational Realism, BOP and PTT**

These factors explain the centrality of military power within Realism in general, and as discussed in Section II, this pre-eminence also holds for the *theories under consideration*. So, from a BOP view, Mearsheimer (2014) overtly focusses on military power and Waltz (1979) includes it as a key element of national power.

In turn, effectively all Motivational Realists refer to military power as a key consideration for which partners states will cooperate with (Glaser, 1994). Also, while PTT theorists mostly refer to national power, their most common measures (such as the Composite Index of National Capabilities – CINC) have a strong military component (Rauch, 2017). And since PTT assesses correlations between power and the rational use of violence, it hence must focus on states' analyses of their potential for military success.

Due to this focus, the predictions developed under the theories in Chapter Three for nations' differing behaviours based on their positions in the balance of power can be understood as relating to *military power*. And this is of course particularly true for militarily relevant scenarios such as territorial disputes.

### **Measuring Military Power under Realism**

Based on the importance of military power, and power balances, it might be expected that Realist definitions and measures of this factor would be well developed and widely agreed. Unfortunately, this is not so; instead, a plethora of competing and often incompatible definitions and measures exist.

To understand how this situation arose, and to help identify means to resolve it, it is necessary to investigate military power's means of operation, and hence ways balances can be measured. This assists to illuminate the causes of dispute.

## The Operation of Military Power

To successfully apply violence (offensively or defensively), military forces must achieve *operational success*. That is, aggressors will conduct military operations<sup>149</sup> to destroy or capture vital assets; and when defenders seek to protect them, this results in a battle – with the victor being the side that is successful. During a battle, offensive forces seek to destroy or capture their targets, and also to destroy, capture, or drive away any defending forces, while defenders seek to protect the targets (and themselves) via destroying, capturing, or driving away attackers. This contest occurs once in *single battles to multiple times in wider wars*. So, as such victories are central to the successful exertion of military power in any scenario, measuring inter-state *balances of power*<sup>150</sup> can usefully be founded upon assessing nations' potential for individual operational (i.e., battlefield) success (Biddle, 2004, pp. 1–6; Tellis et al., 2000, p. 133; Carus, 1987, pp. 29–41). In turn, this potential should be ascertainable by determining those factors most relevant to triumph in battle and describing how these can be gauged and summed (Carus, 1987). Nations' rankings could then be judged, with the results empirically tested (via the outcomes of battles and wars) to refine and develop a robust model.

## Difficulties and Disputes in Measuring Military Power

Despite this promise, vast amounts of effort have resulted in no consensus (at least in the scholarly domain) on how to measure power, and instead a diversity of competing and often incompatible definitions, gauges, and models. This reflects that tests of measures of military power are in effect tests of theories: such models, after all, are efforts to simplify, explain and predict the outcomes of a complex

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<sup>149</sup> A representative definition of operations is provided by the Australian Defence Force: “A military action or the carrying out of a strategic, tactical, service, training, or administrative mission; the process of carrying on combat, including movement, supply, attack, defence and manoeuvres needed to gain the objectives of any battle or campaign” (Royal Australian Navy, 2010, p. 201).

<sup>150</sup> Military power can also be considered in a “stand-alone” capacity in terms of one nation's ability to conduct certain operations at all (Tellis et al., 2000). However, a state's potential only becomes relevant to other nations (and hence of interest to international politics) in the context of being applied as a means of influence, which of necessity requires consideration of a military balance.



reality, and so can (and do) fall victim to all the causes of indeterminacy that plague theory assessment. While various authors have reviewed these matters in detail,<sup>151</sup> in brief overview there are two key issues.

Firstly, there are difficulties with *assessing key factors*. There exist a great many issues postulated as associated with battle and war success, including direct (on the battlefield) and indirect (supporting) elements that are quantitative (such as numbers of troops) and qualitative (such as morale), as well as random chance. Yet no agreement exists on which factors are most important, or how to measure qualitative aspects, or sum and weigh various selected elements, or to compare national rankings (Carus, 1987).

Secondly, battles are also affected by any number of additional factors, including random luck, and as such are complex and chaotic, so their outcomes cannot be predicted with confidence (Heginbotham et al., 2015, pp. 1–21; Cliff, 2015, pp. 1–9; Wood, 2015, pp. 1–16). Instead, the best that can be achieved are broad assessments of probable victory, defeat, or an uncertain outcome (Lieber, 2011, p. 454)<sup>152</sup> – and such assessments often perform “little better than a coin too” (Biddle, 2004, p. 21). And when various (possibly incommensurable) models make such predictions, determining which was correct, for what reasons, is extremely difficult.

The result of this situation is a *diversity of analyses* using inconsistently applied measures to develop incommensurable military balances that support often contrary conclusions.<sup>153</sup> Further, no measure of power has overwhelming support and often “what satisfied one researcher as a gauge ... [is] considered inadequate by another” (Stoll & Ward, 1989, p. 1). Due to this, Guzzini (2004) argues that all Realist analysis is in jeopardy: with no means to assess power as the independent variable, it cannot be related to any dependent variable such as state behaviour.

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<sup>151</sup> For extensive discussions of the many methods, the various causes of disagreement, and their poor performance, see Carus (1987) and Biddle (2004).

<sup>152</sup> For examples of such assessment see Heginbotham, et al. (2015), Cliff (2015), and Shlapak (2009).

<sup>153</sup> Reflected in the poor outcomes in empirical testing discussed in Chapter Two.

Table 4.0: Military Power – Expanded Key Definitions, Supporting Concepts and Commentary

Key Terms and Selected Commentary (Listed in the Order That They Appear in the Text)
<p><b>Primacy of military power.</b> Realism’s focus on military power reflects the explanatory and predictive aims of the paradigm and that such power forms the primary threat to survival. This latter element is based on the unique mechanism of effect offered by militaries: the application of direct violence (via destruction or conquest) against states’ vital assets (i.e., those necessary for existence), with these logically being their territory, industry, military, and citizens.</p> <p>Within these understandings, the centrality of military power (and balances of power) to Realism becomes clear. Firstly, as noted by Mearsheimer, force is the <i>ultima ratio</i> (the final and decisive arbiter) of disputes in international relations (2014, p. 56). This reflects that in a world where states’ first concern is survival, military power provides the most material (i.e., rapid and certain) means available to fully endanger this: violence can extinguish states’ lives.</p> <p>Armed force is also the only means that can threaten such great and direct costs that one state can <i>force</i> another to promptly change its behaviour. This can include by destroying assets the target is using to conduct objectionable acts, such as its military units, or even by the total defeat of the victim state (Mearsheimer, 2014, pp. 86–90). Further, the possibility of conflict is ever-present in an anarchical system: all nations have some military capability, and all always retain the option of force. Hence the potential for violence is not only the “final arbiter” of international disputes (and relations) but also the “first and constant one” (Waltz, 1979, p. 113) – with this potential being the constant background to inter-state interactions and thus driving nations’ international strategies, in the sense of how they engage other states to pursue their goals (Waltz, 1979, pp. 113, 153, 180). This places probabilities for the <i>successful</i> use force in a preeminent position when states choose strategies.</p>
<p><b>Militarily relevant objectives.</b> States can and do apply military power for any of a range of specific foreign policy ends. Yet certain goals are logically more suitable to be resolved by the use of force (“militarily relevant objectives”), and for these the use of armed power is more rational, and hence more appealing, and thus more likely.</p> <p>Such goals are defined as those where armed power can directly (in a causal sense, through the application of violence) and certainly, in whole or in part, achieve the desired result, and notably include the conquest of terrain. In contrast, other goals, such as achieving a change in policy by the target on some issue, rely on military power more indirectly – aiming to inflict such costs overall that, at some point, the target complies. The use of force is a more rational strategy (i.e., seeking to maximise benefits, while minimising costs and risks) for the former, as it offers a more certain (lower risk) outcome for a more quantifiable immediate cost. Of course, the fact that some objectives are more directly susceptible to military force than others does not mean that force will in fact be used (territorial disputes can, for example, clearly be resolved by diplomatic negotiations), nor does it prevent the use of force to achieve other aims, either aggressively or in defence against such attack.</p>

Militarily relevant objectives can be identified by a combination of professional judgement (considering nations' stated foreign policy goals against their potential to be pursued by violence) and/or states' overt declaration of the intent to use force. To inform this task, there is a very broad literature on the relationships between military operations and foreign policy and strategy goals. Examples include Kim (2000), Tellis et al. (2000), Wu and Zou (2009), Booth (1979), and Till (2009).

Militarily relevant objectives also provide a valuable focus area for efforts to assess military balances of power, associated Realist works to explain and predict behaviour, and Realist theory-testing endeavours. This reflects that predictions for the use of force should be more certain in such scenarios, allowing stronger testing.

**Military power in the theories under investigation.** The importance of military power (for BOP) is most clear in Mearsheimer, who focusses on it in *Tragedy* (2014, pp. 55–82). While Waltz includes military power as only one element of national power in *Theory* (1979, p. 129) its importance can be deduced from his wider comments there. He notes that it is the constant threat of force that drives states to seek security and hence is the engine of their foreign policy (pp. 102–109) and thus is key in determining relations between nations (pp. 113, 153, 180).

Also, effectively all the Motivational Realists refer to (particularly Peaceful) nations assessing their military risk from potential partners (a reflection of the armed balance of power) when determining who to cooperate with and how quickly (Glaser, 1994; Taliaferro, 2000; Tang, 2010a).

In turn, Rauch (2017) notes PTT theorists' most common power measures are the CINC or nations' Gross Domestic Production (GDP). These either overtly have a military component (for CINC, states' numbers of military personnel and defence budgets) or form (from GDP) one of the key indirect factors that build armed power.

**Military power as operational success.** Military power, in a Realist sense, can be considered as the potential for one state to exert (or resist) coercive influence on another by threatening or conducting violent action against its vital material assets (its territory, industry, military, and citizens). In turn, from a practical perspective, the violent actions (offensive and defensive) by which military power is exerted are ultimately conducted by nations' armed forces through military operations. Such operations become battles when aggressors are contested by defenders, and the nation that wins the battle has successfully exerted its military power. For the aggressor, victory can be defined as destroying or capturing the material assets it sought to threaten; or for the defender, the prevention of their destruction or loss.

**Operations and wars.** Military operations can firstly be conducted individually or in small numbers (grouped together in space and time) to achieve specific and limited objectives, such as conquering a set area of territory or destroying an asset. Or, operations can occur as part of a wider war.

War can be defined as a situation when operations and battles expand in number, scale, time and space, and the objective becomes the formal imposition of the will of one nation on another, such as to force the latter's agreement to cede a territory, achieved by inflicting wide-scale defeat. Of note, no fully agreed definitions for war exist, although this description is representative of the use implied in most literature. For a broader discussion see Freedman (2012). Further, even in the definitions used here there is potential for overlap, for example where a large nation aims to entirely conquer a small one via one or two operations, which would still be considered a war.

**Assessing key military power factors.** There is extensive dispute regarding factors relevant to battle success, and addressing these is highly complex, even for judging limited operational victory. For example, it is widely agreed in the literature that a great diversity of “directly relevant” military factors are closely associated with success in battle. These include both quantitative (such as numbers of troops and weapons) and qualitative (such as morale, training and geography) matters as applied to specific operations (Biddle, 2004; Tellis et al., 2000; Carus, 1987). Yet no agreement exists on which factors are most important; how to measure qualitative aspects in particular (and being intangible, such variables are arguably impossible to measure effectively (Carus, 1987, p. 203)); and how to sum and weigh various selected elements. Indeed, sufficiently different models can logically be considered incommensurable, despite attempting to address the same subject matter.

**Diversity of analyses.** There are a great many assessments capturing diverse and frequently unconvincing outcomes. Noting the nature of battlefield analyses, no agreed model exists and developing one empirically is arguably impossible as many immeasurable factors can explain results.

Firstly, and possibly as a result of the complexities of operational military power, most assessments seek to measure nations’ potential for war success (Carus, 1987). This might seem counter-intuitive, as this should be more difficult to predict being based on the outcomes of many interdependent battles. But due to wars’ longer time scale, victory is also strongly affected by nations’ capacities in “indirect” (and often more quantifiable) economic, demographic, political and other factors that support their enduring generation of armed power (Carus, 1987, pp. 121–158; Mearsheimer, 2014, pp. 55–85).

Such efforts to determine war success generally do not examine operationally relevant factors and, instead, select and compare various strategic direct (such as sizes of overall armed forces) or indirect purely quantitative criteria. This is presumably on the basis that such factors should, over the long-term, prove decisive, and so allow the assessment of countries’ armed potential writ-large without considering tactical matters (Biddle, 2004, pp. 19–27; Carus 1987, p. 70).

Yet, as noted by Biddle, many of the most common quantitative measures all perform “little better than a coin toss” (2004, p. 21). And of these, few efforts have been made to pick the empirically most successful of the various measures aimed at predicting war success and such efforts might be fruitless in any case, noting that different models can feasibly predict and explain common outcomes, and their poor predictive power leaves little to differentiate their (statistically dubious) merits.

In turn, some war-assessment measures do also involve qualitative factors, but such efforts further impose the previously noted problems with such criteria. So, qualitatively influenced works too produce situations where various models can equally explain the same outcome, yet it is unclear which one performs well and why.

## Developing an Improved Measure

Clearly then, a more rigorous measure of military power is needed to effectively assess the theories under investigation – and Realism more broadly. To achieve this, as an initial step it is necessary to determine the form of model proposed. In this dissertation, to deliver a best practice result, it was decided to develop a robust, principles-based and structured approach to assessing military power, using carefully defined terms and informed by a broad literature review. These concepts are discussed below with ***bold italicised*** terms and concepts expanded upon for the interested reader in [Table 4.1](#).

To guide and explain the building of the model, several definitions, desirable outcomes, and ***key principles*** were determined. The most important of these were that the model should:

- Be suited to explaining and predict nations' real-world behaviour, by defining and measuring military power in ways akin to that done by states.
- Define a sequence of logical and repeatable steps to assess and compare states' operational (at the level of battles rather than wars) military power, as this is the foundational level where armed force is applied.
- Generate results no worse than can currently be achieved – by identifying prospects for likely victory, defeat or uncertainty. This reflects that such predictions already provide sufficient detail for government decision-making (Lieber, 2011) and are suitable for testing OR, DR, BOP and PTT, which envision aggression when the chances of victory are high (under BOP) or uncertain.

Finally, the results of the process would be treated with caution. Exceptional efforts by hundreds of authors have failed to develop any widely agreed model, and those that are used often perform objectively poorly or cannot have their accuracy sensibly tested at all. To that end, high-veracity predictions may be impossible for

specific scenarios or wars. So, for a new measure, its utility is better assessed by its clarity of assumptions and process, with a view to providing an improved basis for power assessment, rather than a focus on only its predictive potency.

### **Defining and Measuring Operational Military Power**

Before proceeding to measure military power, it must be more carefully defined. On this note, the following is proposed: “Military power is a state’s potential for specific operational success against a particular adversary”.<sup>154</sup> Under this definition, success is characterised as, for an attacker, achieving the desired ends (including destroying or driving off the adversary forces that are either the objective of, or defending the objective of, the operation) while incurring minimal losses; or, for a defender, defeating such forces in the same terms. Such a result (hereafter referred to also as a “victory” or “decisive victory”) is that logically sought by rational states.

This definition deliberately focusses on dyadic (bilateral) balances of power. This reflects most conflicts are between two states, and larger complex wars involving more nations still tend to remain two-sided, as they frequently grow from initial two-party confrontations (Valeriano & Vasquez, 2010, pp. 563–564). Further, using the above, the *measure* of military power is either likely defeat, uncertainty, or likely success, reflecting a nation’s prospects for decisive victory in a specific battle: the greater the potential, the stronger the state’s power. Stated explicitly, likely defeat indicates a weaker nation, uncertainty indicates two states of roughly equal power, while likely victory is the hallmark of the more powerful country.

This definition and measure, focussing on prospects for victory in specific and limited operations rather than war, are used due to offering **numerous benefits**. Most importantly, they focus on operations as the foundational element of success

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<sup>154</sup> This is informed by several definitions referred to by Carus, including “military power is the capacity for taking or defending objects forcibly as well as a means to exercise coercion”; and “military power is the ability of states to affect the will and behaviour of other states by armed coercion or the threat of armed coercion” (1987, pp. 29, 40–41). Clearly, the potential for the *successful* application of force is inherent in such definitions.

in any wider conflict. This should help to mimic nations' own real-world analyses: to act rationally (even in wars) states *must* attempt to first predict their potential for initial battle success. It also supports testing for OR states, noting that these should behave diversely at locations with different balances: to assess this, such area-specific (operational) balances must be determined.

Further, a focus on operations supports considering militarily relevant objectives. Logically, being suitable to direct resolution by violence, such goals are more likely to be achieved by specific operations rather than requiring a resort to broader wars – although the former may of course escalate to the latter. Also, and importantly, a focus on short-term operational success aligns with Realist theory and observed state behaviour. That is, nations are expected to, rationally, base their decisions for aggression on short-term and more-certain prospects for success, rather than any potential for resulting wars that may or may not erupt (Mearsheimer, 1983; Chan, 2016). And empirical data supports this (Huth, 1999; Huth & Allee, 2002). Hence an operational focus again supports Realist theory testing, in particular for OR states.

Finally, a key benefit is to address a gap in the development and application of *structured* means of measuring *relative* military power in *battle-relevant* ways. This reflects that the current literature addressing power in this way is “sparse and underdeveloped” (Heginbotham et al, 2015, p. 6). Indeed, most battle-focussed efforts only assess individual forces, or compare militaries using idiosyncratic and unintegrated criteria without a well-reasoned framework (Heginbotham et al., 2015, p. 6; Kirchberger, 2015, pp. 1–6; Cliff, 2015, p. 8).

### **Identifying Key Factors: Three Questions Informing a Structured Approach**

Further to the above, the next task is to determine which battle-relevant factors, drawn from the existing literature, most affect nations' potential for operational success and so should be included in a measure of military power. As a plethora of criteria exist, to reduce these to a manageable quantity they are usefully assessed against their ability to support a structured approach. That is, to meet the aims of

the new model, the key factors should align with its structured consideration of military power, rather than be ill-fitting appendages.

To address this issue requires defining a structure, even if only broadly. And noting the utility of aligning with real-world behaviour, the model should aim to mimic nations' actual conceptual considerations as best that they can be determined. Based on this, the approach proposed here centres upon a sequence of three key questions that states must logically resolve to measure military power as it is defined here: a nation's potential to successfully (i.e., to achieve decisive victory) conduct specific operations when opposed by the operations of its adversary.<sup>155</sup> These questions (and illustrative means to address them<sup>156</sup>) are, in order:

- 1) ***What operations will nations seek to conduct?*** For a state to rationally measure its power, it must, firstly, understand what operations it and its potential adversary need to conduct to achieve their respective objectives. For the analyst seeking to measure balances of power, such operations can usefully be identified by considering nations' militarily relevant objectives (such as claiming all islands in the SCS), as these are the types of goals where armed force is most applicable and hence likely to be used, and cross referencing these with the military operations (such as amphibious assault) necessary to achieve them.
  
- 2) ***Can nations conduct needed operations?*** Having identified the necessary operations, the nation must determine whether it (and/or its adversary) can achieve these operations at all, as if one state can and the other cannot, the former is clearly more powerful. This can be done by cross-referencing each countries' operational capability requirements (such as a having amphibious ships with a range suitable to reach an island) with their national inventories, to

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<sup>155</sup> Of course, how countries conduct the three steps and analysis will vary. Yet at heart, something akin to these questions must be resolved for nations to rationally apply military power. Also, the importance of these questions to measuring military power, although not always using these exact terms, is broadly recognised in the literature. See Glaser and Kaufmann (1998), Glaser (2010), Posen (1984b, 1988), Mearsheimer (1988, 2014), O'Rourke (2016), Tellis et al. (2000), Cliff (2015), Heginbotham et al. (2015), Wood (2015), Shlapak et al. (2009), Carus (1987), and Kirchberger (2015).

<sup>156</sup> These questions and means to address them are discussed in detail below and in Chapter Five.



determine whether the suitable units that each state can apply to a specific location (their “operationally relevant” forces) can meet their respective operational needs.

- 3) ***How will forces fare in battle?*** Lastly, if both nations can meet minimum requirements, the state must assess how the respective forces might fare in battle. This can usefully be framed by the concept that those forces that can attack first, and that also have superiority in numbers, are likely to be triumphant.<sup>157</sup>

Each of the above questions helps to identify potential battle-relevant factors. For example, what criteria in the literature allow for determining which types of military equipment are suited to which operational needs? And what factors affect whether forces can detect and destroy their targets first (a concept more formally described in the military literature as the “kill chain”<sup>158</sup>)?

### **Reviewing the Literature**

Comparing various authors’ key factors against these questions<sup>159</sup> supports defining which criteria, and for what reasons, should be included in an improved measure. As such, the above considerations were applied to the great diversity of models that attempt to measure military power to identify the most useful approaches. A range of more (and less) helpful avenues were discerned, and are listed in Section II. Also, as part of this process, NeA were identified as the most compatible methodology. The reasons for this, and the key factors identified, are addressed in Section III.

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<sup>157</sup> This simply reflects that the side that can attack first (and hence destroy enemy units) is, of course, more likely to survive and thus achieve its operational objective, as fewer adversary forces will have the chance to attack it in turn. And to the degree a side also has numerical superiority, the more probable it is to be able to absorb any attacks that its adversary *is* able to execute against it and still survive overall (i.e., have a proportion of the force left remaining), again enabling victory.

<sup>158</sup> The “kill chain” is more formally defined in US military doctrine as Find, Fix, Track, Target, Engage and Assess, or F2T2EA (Joint Chiefs of Staff, 2013, p. 11–21). This logic is also used in several net assessments, such as Heginbotham et al. (2015, p. 11).

<sup>159</sup> Thereby conducting a focussed comparison, a key investigation method noted in Chapter One.

Table 4.1: Developing an Improved Measure of Military Power – Expanded Key Definitions, Supporting Concepts and Commentary

<b>Key Terms and Selected Commentary (Listed in the Order That They Appear in the Text)</b>
<p><b>Key principles and outcomes for an improved measure.</b> Firstly, any improved the model should operate on those factors that can be identified as being broadly agreed among the scholarly community as being the most important for measuring military power. These criteria should be identified in a transparent and robust manner (rather than subjective inclination), an outcome sensibly achieved by a wide review of the literature. Further, in terms of a structured approach, the model should define a sequence of logical and repeatable steps to use the factors to assess military power. This requires defining how any identified power criteria can be systematically individually assessed (i.e., populated with values), integrated to develop national power ratings, and compared between states to develop dyadic balances of power.</p> <p>Secondly, due to the complexity of developing such a measure, the work itself could usefully be directed by key principles. In particular, to be suited to assess Realism, which aims to explain and predict nations’ behaviour in the real world, the model too should seek to define and measure military power in ways akin to that done by states, lest it do so in unrealistic ways unsuitable for assessing countries’ actions. Hence, any measure should seek to capture simplified but representative considerations for nations’ decision making on the application of military force, and be applicable to militarily relevant objectives where the use of force is more likely. The model should be practical, to support its use, and generate results no-worse than are currently achievable; that is, prospects for likely victory, defeat or uncertainty.</p>
<p><b>Benefits of a refined definition and measure of military power.</b> The additional key benefits of the approach used here include that the emphasis on limited objectives aligns with Realist thinking that the prospects for short-term (rather than overall war) victory have a stronger impact on whether nations initiate violence. Hence, a model measuring such factors should be a better predictor of state behaviour.</p> <p>This concept reflects various issues, notably Mearsheimer’s (1983) argument that offensive action is rationally enabled by the prospect of a decisive victory: one that is quick (and thus cheap) and low risk – aligning with the definition of victory used here. If states instead face the prospect of a long and costly war of attrition, aggression should be deterred. This understanding applies equally to BOP and PTT; with the difference being in whether states see a superiority or balance of power as being opportune for decisive victory. In turn, prospects for rapid success should be more influenced by direct operational factors vice indirect ones affecting what only might occur in the future. Expressed more formally, deterrence due to immediate factors operates more effectively than deterrence due to indirect factors (Mearsheimer, 1983). Separately, Chan notes nations with short-term superiority that are indirectly weaker may rationally seek small decisive aggressive victories; trusting to the prospect of a subsequent war of attrition to dissuade the more “powerful” nation from initiating broader conflict (2016, p. 115).</p> <p>Such propositions have been empirically validated by authors including Huth (1999), who notes deterrent success is significantly based on defenders’ direct military capabilities vice indirect power. In turn, Huth and Allee note that states are up to three times more likely to escalate military threats when they have localised, short-term advantages in forces (2002, p. 782).</p>

Further, a specific operational focus supports the methodology used in this dissertation and aligns with how force is practically exerted: by individual units and weapons systems at particular times and places. So, considering scenario relevant assets (such as those for seizing SCS territories) is more sensible than comparing wider (and likely inapplicable) military forces. Finally, an operational focus supports considering militarily relevant objectives, since these themselves are of a type that should be able to be addressed by an operation, rather than requiring resort to a broader war.

***What operations will nations seek to conduct?*** If military power is the prospect for success in competing operations, it is necessary to determine what operations nations' will seek to conduct. In this dissertation, this is done by developing a sense of nations' militarily relevant objectives, as these are foreign policy goals where the use of force is more probable, and from these considering what operations are likely necessary to achieve these aims. This is achieved by cross-referencing countries' militarily relevant policy positions (such as claiming all islands in the SCS) with consideration of the operations logically needed to realise these (such as amphibious assaults). Of note there is a very broad literature describing the relationships between military operations, associated capability requirements, and foreign policy and strategy goals. Examples include Kim (2000), Tellis et al. (2000), Wu and Zou (2009), Booth (1979), and Till (2009).

This step helps the search for key factors. So, what criteria allow for determining which types of military equipment are suited to which operational needs?

***Can nations conduct needed operations?*** After determining needed operations, a sense of whether nations' militaries can actually conduct these operations at all must be reached. This is done by examining capability taxonomies that align operational needs (such as amphibious assault) with capability requirements (such as having amphibious ships with a range suitable to reach the area); such as proposed in Tellis et al. (2000, pp. 133–176) and Kirchberger (2015, pp. 57–71). In turn, these requirements can be checked against a nation's armed forces to see whether, of the forces it can apply to a specific location, these can meet the operational needs. Logically, only such "operationally relevant" forces that can both reach an area and contribute to meeting operational needs should be considered.

This step helps identify further key factors. So, clearly military assets' range (in terms of the distances they can travel) affects which forces will be operationally relevant.

***How will forces fare in battle?*** Finally, if both competing states' operationally relevant forces can notionally conduct desired operations, they can then be considered in terms of their relative capacity for victory in battle. This can be framed by the concept that those forces which can destroy their enemies first, and which also have superiority in numbers, are likely to be triumphant, as the side that can destroy its targets first (and thus not suffer attack in turn) is clearly more likely to be victorious. But this is moderated by the fact if it runs out of weapons before its adversary runs out of forces, then its opponent can still triumph even with inferior weapons.

These notions in turn guide identifying and assessing key battle-success factors. So, issues of numerical preponderance can be quantified by counting operational forces. In turn, the search for criteria affecting nations' abilities to destroy targets first can be more formally considered via the concept of the "kill chain": this describes the stages involved from detection to destruction: in short, targets must be detected, identified, and then effectively engaged with weapons. Hence, those factors affecting forces' potential to conduct any of these actions before their adversaries influence their potential for success. For example, forces with longer-ranged weapons can attack first, so weapons' ranges become a key criteria.

## **Section II: A Literature Review of Means of Measuring Military Power**

This section reviews four of the most common methods to measure military power: quantitative, indirect, military capability, and Offence Defence Balance (ODB) assessments. These are examined for their strengths, weaknesses, and contributions to an improved measure, and to highlight their existing application to assessing Realism, including OR, DR and PTT.

### **Quantitative Assessments**

Such assessments determine military balances by counting and comparing dyads' numbers of directly relevant armed forces, such as troops, tanks, and aircraft, with the preponderant side (i.e., having numerically more) being stronger. Such assessments can be conducted for specific objectives or overall wars, and are among the most common types of analyses (Biddle, 2004, pp. 14–28).

Quantitative efforts include those by Mearsheimer who declares in *Tragedy* that “Power in international politics is largely a product of the military forces that a state possesses” (2014, p. 83). In turn, balances of power are judged by comparing the numerical size and strength of states' armies, navies, and air forces (p. 56).<sup>160</sup> However, Mearsheimer does not discuss how different services might be integrated into one measure, an important omission as he argues that a nation's power is based on its army; hence such units clearly have a disproportionate impact on his measure of power. Mearsheimer's position reflects his argument that armies are “the principal instrument for conquering and controlling territory – the paramount political objective” (2014, p. 86) and can defeat opponents expeditiously (p. 87). In comparison, naval and air forces conduct “pinprick warfare” by bombs or blockades, and (short of using nuclear weapons) cannot rapidly force surrender (pp. 83–137).

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<sup>160</sup> Due to also using qualitative factors, *Tragedy* is also considered under NeA in Annex A.

Principally quantitative measures are also preferred by Waltz, who describes in *Theory* that power can be assessed by counting and combining nations' capabilities in the fields of population and territory, resource endowment, economic capability, military strength, political stability and competence (pp. 129–131, 192). These are clearly primarily quantitative criteria, although they include ones such as “competence” that are qualitative in nature. Waltz does not provide any means for judging or combining any of his power criteria, but argues it is possible to rank states “roughly by capability” and offers as proof the assertion that historically the identities of Great Powers have been “generally agreed” (1979, p. 131).

Of note, both authors appear focussed on the potential for war success; and using his definition Mearsheimer (2014) develops power rankings for various nations and harnesses these to demonstrate OR's potency. In turn Waltz (1979, p. 162) relies on secondary sources to identify Great Powers and uses this to support DR. And many other authors have conducted assorted quantitative Realist efforts for various dyads that have supported OR, DR, both or neither.<sup>161</sup>

### **Benefits and Shortcomings**

The major benefits of quantitative approaches include their strong logical basis: when nations compete in battle, those with larger armed forces can inflict and withstand more harm and thus have a greater chance of victory. Further, such approaches are practical, as basic data is accessible through sources such as the International Institute for Strategic Studies' *The Military Balance*. Finally, data is tractable: comparisons can be assessed easily, and likewise potential developments such as what would occur if a nation bought more ships or aircraft.

The approach also has important shortcomings. Perhaps the chief is that it ignores the qualitative factors that affect operational success, particularly for modern

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<sup>161</sup> For a selection of authors that make such assessments for the SCS alone, and then use them to assess state behaviour, see Fravel (2007, 2010), Liff and Ikenberry (2014), Blazevic (2012), Bitzinger (2007), Loo (2008), Wang (2014), and Chan (2016).

militaries using complex weapon systems that depend on factors such as training, logistics, and maintenance for effectiveness (Kirchberger, 2015, pp. 1–18). Indeed, quantitative measures treat all armed forces as equally effective, despite ample evidence that this is not so (Carus, 1987, pp. 7–75). Even comparing totals of like equipment can be misrepresentative since assets can be newer and more capable, have more or less weapons and armour, and so on (Tellis et al., 2000, pp. 133–176). Also, preponderance can be actively misrepresentative. So, a reduction in personnel may release funding to better train and equip the remainder into a stronger force. Indeed, most assessments of China’s power are that it has increased substantially over the past 20 years while its armed forces have shed hundreds of thousands of personnel (Heginbotham et al., 2015; Cliff, 2015; Cordesman & Kendall, 2016).

Likely as a result of such issues, quantitative comparisons do poorly empirically, with Biddle noting that, across 43 wars, personnel preponderance augured victory only 49% of the time – less than by random chance (2004, p. 21). And since war outcomes are often the result of many individual battles, there is little reason to expect that preponderance predicts well the results of specific operations either.

Due to such flaws, purely quantitative measures must be judged as poor contributors to an operational measure of military power. But preponderance is conceptually sound as one criterion among several, with its merit reinforced by Biddle’s assessment that it can have important effects to strengthen military power *when other factors are unequal* (2004, pp. 52–77, 190). That is, when a state already has other advantages, preponderance further increases its military power; it also has noticeable but diminishing effects when other factors near parity.

### **Indirect Assessments**

Indirect methods are the most frequently used means to measure military power (Carus, 1987, p. 70; Biddle, 2004, pp. 14–24). They assess military power by counting states’ capacities in tertiary attributes that should support their generation of enduring armed power (Carus, 1987, p. 70). As with direct

quantitative methods, nations with higher totals are judged more powerful. Such results are extrapolated to, most frequently, assess states' potentials in long wars, where such factors are more relevant, or (less often and less certainly) to individual immediate operations.

In practice, the tertiary factors tend towards (beyond some directly relevant measures such as the counting of weapons and personnel) criteria such as GDP, defence budgets and steel production. So, the CINC, the "most widely used operationalisation of relative material power" (Moyer, 2012, p. 129), defines state's overall national power by measuring military expenditures and personnel, steel production, energy consumption, and population. Such information, or similar measures, is then used as a proxy for military power.<sup>162</sup>

Indirect approaches are particularly used by PTT theorists, who assess balances of power, and military power, principally by using CINC and GDP (Rauch, 2017). Based on such measures these writers have found their theory to have considerable explanatory power (Organski & Kugler, 1980; Lemke, 2002, 2010; Liao, 2014). Of course, this disagrees with the balance of power authors who have marshalled their own evidence for superior outcomes.

### **Benefits and Shortcomings**

The benefits of such approaches align with those of the direct quantitative methods discussed above. In turn, there is likewise little evidence of any correlation between selected criteria and military success. So, a review by Biddle of 45 wars where data was available showed at best a 62% correlation between GDP and victory (2004, p. 21). Population and defence expenditure correlated between 49% and 57%. And for the CINC the relationship was barely above the "coin toss", at 56%.

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<sup>162</sup> Moyer notes several similar measures, including those of the US Strategic Assessment Group, based on GDP, population, defence spending and innovation in technology (2012, pp. 130–134).

These outcomes likely result from not including qualitative criteria and ignoring issues with numerical comparisons of indirect measures. So, for military funding, the correlation with capability will be affected by matters such as corruption, administrative capacity and how funds are spent – for example, on equipment or pensions for retired personnel (Carus, 1987, pp. 71–100; Liff & Erickson, 2013, pp. 805–830). Further, budgets can be disputed based upon what (and how accurately) nations report as spending. So, while China’s official 2019 defence budget was (in United States (US) dollars) some \$178 billion, other estimates were up to US\$261 billion (Funaiolo & Hart, 2020).

As a result, Carus argues “there is no reason to believe that [indirect] measures tell us anything at all about the ability of a country to undertake military operations” (1987, p. 117). Because of tertiary criteria’s poor performance and low applicability to battle success, such factors are not included in the improved measure.

### **Static and Dynamic Military Capability Assessments**

Such assessments seek to measure and model, using principally but not exclusively quantitative means, the actual likely performance of forces in specific operational scenarios and, less frequently, overall wars (Carus, 1987, pp. 159–204). Capability assessments differ from direct quantitative works in taking a more nuanced view of numerical comparisons. For example, rather than comparing forces symmetrically (like with like) the assessments may be asymmetrical, examining weapons against countermeasures, such as numbers of attacking bombers against numbers of defending fighters and Surface-to-Air Missiles (SAM). In turn, the force with the higher totals has greater military power.

Capability assessments also seek to model, to a degree, the likely outcomes of military forces’ interactions and hence their prospects of success in specific operations. These processes are conducted differently for static vice dynamic assessments (Carus, 1987).



Static measures examine the “opening” military balance between competing nations at the beginning of a conflict. Prospects for success are based on nations’ specific operational objectives, their available forces, and rules of thumb from historical examples that show the ratios necessary for success (Carus, 1987, pp. 181–187). For example, a common measure is the 3:1 ratio of numerical superiority for an attacker on land to overcome a defender (Carus 1987, pp. 182–184). Thus, if the attacker has 3:1 superiority it is more likely to succeed, whereas 2:1 has worse prospects even though it is preponderant.

Dynamic balances (also called campaign assessments) examine how forces will vary over time during a war. They involve a degree of qualitative assessment to incorporate factors such as terrain, training, and so on. This is conducted either by using “military principles, doctrines, terrain analysis, rules of thumb, historical experience” (Posen, 1988, p. 187), or, much more commonly, by advanced computer models. These convert otherwise inestimable qualitative factors into illustrative quantitative impacts. So, if one nation has more modern aircraft than another, the latter’s aircraft numbers may be multiplied by 75% (or some other figure) to reflect its planes are only three-quarters as effective (Carus 1987, p. 170).

Despite such potential, capability assessments are used rarely in IR, occurring more frequently in specialised military studies. This is perhaps because of their more complex nature and more narrow applicability, hindering the straightforward analysis of large quantities of dyads.<sup>163</sup>

### **Benefits and Shortcomings**

The appeal of capability assessments is that they analyse power in ways more related to how armed forces actually conduct operations. Also, their measures (such as preponderance) are logically relevant, can include modelling of various

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<sup>163</sup> For examples used in IR that focus on nations’ operational capabilities in the SCS see Chang (2012) and for the US versus Iran in the Arabian Gulf see Talmadge (2008).

inestimable factors to see how they affect outcomes, be historically validated, and most initial information (particularly for static assessments) is easily available.

Unfortunately, these benefits are difficult and doubtful to realise. While a diversity of issues are discussed by Carus (1987), key problems include, for static models, that these usually focus on preponderance as *the* deciding factor, a highly dubious proposition – either directly or for force ratios.

For example, as discussed above, Biddle (2004) shows a less than 50% correlation between personnel superiority and victory. Further, Carus notes that historical views of acceptable attack ratios range from 1.5:1 through to 5:1 (1987, pp. 183–184), and in repeated instances attacks with up to or more than 5:1 superiority ended in failure (Biddle, 2004, pp. 108–131; Carus, 1987, p. 193). Vice versa, Betts shows that in 92% of situations where the *defender* held more than 1:1 superiority, it was still defeated by an attacking force (1985, p. 169).

In turn, dynamic balances too are fraught. Because of the multiplicity of factors that they may consider, each with multiple potentially different weightings, they generate vast ranges of plausible outcomes. So, one computerised study conducted 31,000 simulations, with an equal number of subtly different outcomes,<sup>164</sup> of a conflict between the US, Taiwan and China over an invasion of Taiwan (Shlapak et al., 2009, pp. 56, 63). And due to the variety of potentially relevant variables it is entirely possible that different robust outcomes could be achieved with other inputs. Indeed, the study's authors noted that “the sheer number of variables, values, and therefore, cases, should indicate how fraught with uncertainty these issues are” (Shlapak et al., 2009, p. 63).

Further, the validation of models' factor weightings is generally impossible as their criteria are not captured in historical databases (Carus, 1987, pp. 174–175). And due to the models' complexity, even if they perform well, it is difficult to determine

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<sup>164</sup> Although mainly finding that the US and Taiwan would prevail (Shlapak et al., 2009, p. 118).

why – and whether this is replicable (Biddle, 2004, pp. 176, 247). Such judgements are yet harder for scholars (or nations) that do not have such models, noting that they are typically proprietary, meaning that their workings are opaque to outsiders (Carus, 1987, p. 174; Biddle, 2004, p. 17).

Based on these considerations, neither type of capability assessment was judged suitable to make a significant contribution to an improved model. However, both types offer, at the high level, factors that are logically usefully in a new model, notably preponderance, while others are included in the description of NeA below.

### **Narrow and Dyadic Offence-Defence Balances**

A final major avenue to measure military power is to focus on the impact of technology (Biddle, 2004, pp. 15–17). Such works tend to focus on either systemic technological superiority (such as whether offensive weapons or defences in general have an advantage) or dyadic balances, where one adversary has overall superiority due to technological advancement. Such issues are commonly discussed in terms of the ODB, mostly in terms of narrow definitions, focussed strongly on technology, and but also broad ones, which view it as one of a range of factors (Lieber, 2000; Lim, 2014; Lynn-Jones, 1995).

Proponents of narrow systemic ODB essentially argue that the relative ease of attack and defence is determined by the state of technology at any point in time. During periods of offensive advantage, aggressive action becomes cheaper, victory in offence is more likely, and hence more conflicts (including preventative wars) erupt. Also, at such times the security dilemma (where any nation's defensive arms threaten its neighbours, and vice versa) is heightened and so arms races and wars become more frequent, including for otherwise non-aggressive states. And during defensive superiority the opposite holds true: the high cost and unlikely success of aggression makes it less likely (Van Evera, 1999).

A similar focus exists for the narrow dyadic ODB school. If a state has a technological advantage it is likely to attack, either due to innate tendencies or fear driving it to preventative war before the balance shifts (Biddle, 2004, pp. 14–24).

In turn, the broad ODB school includes a wide array of criteria that define whether offence or defence will be most effective in a situation, although it still places a high premium on technology. In this way, the broad school is akin to the NeA, and certain such assessments are included in the NeA review below. Also, the broad school too argues that to the extent offence is dominant, wars are more likely.<sup>165</sup>

In terms of broad factors, Lieber notes these include “geography; the cumulativity of resources; nationalism; regime popularity; alliance behaviour; force size; and military doctrine, posture, and deployment” (2000, p. 76). Other criteria include technology, broken down into sub-variables that include mobility, firepower and detection (Glaser & Kaufmann, 1998). Of note, various broad ODB authors identify different, occasionally overlapping factors as key issues, and also measure them differently (Gortzak et al., 2005; Lieber, 2000). Further, some authors argue that broad ODB can explain systemic war (Van Evera, 1998) due to the principal impact of technology while others maintain a dyadic focus (Glaser & Kaufmann, 1998).

For either narrow or broad approaches, ODB assessments are more focussed on war rather than operational success, although broad dyadic approaches are also suited to addressing the latter. But in general, ODB proposes important factors to help identify opportune moments and test Realist thought. And indeed ODB has a distinguished history in IR, offering “political science’s chief understanding of technology’s role in international security” (Biddle, 2004, p. 15). In fact, it forms the centrepiece for many explanations on the likelihood of conflict, war, alliance

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<sup>165</sup> Usefully, the theory also focusses on the types of military missions (more and less offensive) that are enabled by the broad ODB approach, notably its technological aspects, rather than simply examining equipment by itself (Glaser & Kaufmann, 1998). This allows it to more directly contribute to the model discussed in Chapter Five.

formation, arms racing, and security dilemmas (Biddle 2004, pp. 19–20; Lieber, 2000, 2011; Gortzak et al., 2005; Glaser & Kaufmann, 1998; Levy, 1984).

### **Benefits and Shortcomings**

The benefit of narrow ODB resides in, as put by Lieber, “The idea that the nature of technology affects the prospects for war and peace is simple, powerful and intuitively plausible.” (2000, pp. 71–72). For example, systemic ODB proponents generally view mobility technologies as offensive (as aggressors must move to conquer) and firepower-enhancing ones as defensive, since defenders can stay put and fire at aggressors (Glaser & Kaufmann, 1998, pp. 62–64; Lieber, 2000). States should note these trends and be driven towards more or less attack-facilitating acquisitions (Lynn, 1995, p. 675), with outcomes evident in the historical record. And some authors who have conducted such assessments argue that the results are so compelling that the ODB is “the master key to the causes of conflict” (Van Evera, 1999, p. 190).

Similar patterns should also occur in dyadic balances. This reflects Biddle’s point that there must be some relationship between technological superiority and victory, since sufficiently stark differences (where one side is almost invulnerable, such as between modern tanks and muskets) would produce a “technologically determined slaughter” (2004, p. 66).

Despite such conceptual appeal, significant issues exist with any ODB approach. Most importantly, there is widespread doubt about whether it is possible to class technologies or weapons as favouring offence or defence (Russell, 2002, p. 198; Levy, 1984; Lieber, 2000; Tang, 2010b). Almost any weapon is able to be used in offensive or defensive ways, especially in concert with others in an arsenal. For example, SAM are defensive, but can be used in concert with tanks to provide air cover enabling offensive action (Tang, 2010b). In such a situation, is the weapon or technology offensive, defensive, or both, and to what degree?

Further, there is little accord between systemic ODB theorists on what weapons, technologies or time periods should be characterised as being offence or defence dominant (Levy, 1984; p. 234; Gortzak et al., 2005, p. 74; Lieber, 2000). So it is difficult to test the school's claims; and when attempted the outcomes have been doubtful. Lieber (2000) and Gortzak et al. (2005) review 11 assessments in total and find either a mixed or no ODB effect; and neither does Biddle (2004, pp. 23–25).

Biddle also finds a no better than random (50%) correlation between technological advantage and victory (2004, pp. 23–25) and argues that this is the result of insufficient technological margins between adversaries and that such margins are unlikely to reappear soon (p. 66). Indeed, he finds that the average gap in equipment age across all conflicts from 1956 is less than three years (pp. 66–67).

In turn, the utility of broad ODB approaches are that they do not rely on a single ill-defined and poorly measured technological criterion as the key variable. But many criticisms of these exist too, including that claims that the broad ODB can explain systemic outcomes still rely mainly on the unproven impact of technology. Also, broad ODB assessments have been proposed as having so many variables that they have little prescriptive power as the “balance” cannot be sensibly calculated; instead, they allow for selecting factors that support post hoc rationalisation of outcomes (Lieber, 2000; Glaser & Kaufmann, 1998). Indeed, even at the dyadic level the various models disagree on how to define the ODB, what factors should be included, how these should be measured, and exclude variables relating to combat outcomes such as military skill (Glaser & Kaufmann, 1998; Van Evera, 1998). And a key part of such analyses is still based on the dubious proposition that certain technologies are “offensive” or “defensive” (Glaser & Kaufmann, 1998, pp. 61–64).

Further to these issues, the centrality of technology seems doubtful. As such, ODB's key contribution to any improved measure is to argue for technology as *a* (but not *the*) key factor. And as shown by Biddle such superiority does have a positive impact on war victory, but strongly affected by other factors (2004, pp. 52–77). Also, broad ODB criteria can be correlated with other NeA to identify promising key factors.

### **Section III: A Preferred Approach – Net Assessments**

As should be evident from the above, a great diversity of factors and approaches exist to measure military power; however, many are only tangentially applicable to answering the key questions. However, as part of the literature review, a separate preferred approach was identified – the use of NeA.

Regarding such works, NeA lack an agreed definition, but the term broadly refers to the investigation and integration of quantitative and qualitative factors to achieve overarching understandings of relative military capability and likelihoods of combat success (Pickett et al., 1991, p. 177; Carus, 1987, p. 68). Such factors, and associated analytical techniques, can be defined as widely as necessary to address specific topics. They can include preponderance, geography, political will, soldiers' morale, logistics, weapon effectiveness and more. Of note, NeA do not seek to analyse all relevant factors, but instead those most important for understanding complex situations (Mearsheimer et al., 1989, pp. 131, 145–147).

Because of the looseness of the definition, NeA provide a useful heading under which to group various authors' criteria and analytical methods, and this is the way the term is used here. Importantly, however, this differs from another common usage, which is to use NeA to refer to the US Department of Defence's Office of Net Assessment and its works (Pickett et al., 1991, p. 166).<sup>166</sup>

#### **Benefits and Shortcomings**

The key strength and weakness of NeA are their fluidity. Without boundaries to analysis, NeA can include and integrate as many factors as their authors find useful and in the manner they see fit. This allows for a richer and more comprehensive

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<sup>166</sup> Due to this difference, doubtless some of the authors reviewed here would disagree with their work being characterised as NeA.

investigations of issues, including for qualitative factors that are difficult (or impossible) to measure precisely.

However, as each NeA is tailored to the preferences of the author and situation, it makes comparing works difficult as assessments may vary dramatically due to issues such as selecting disparate criteria, or weighting common factors differently. Also, NeA outcomes are necessarily subjective and qualitative, reflecting the immeasurable nature of some inputs and analyses' strong dependence (as for all works) on the author's skill and judgement. Further, most NeAs' very specificity complicates attempts to develop generally applicable measures of military power.

### **A Conceptual Mechanism Enabling an Improved Methodology**

Mindful of these issues, the approach of using NeA, in particular comparing multiple such assessments, to address the three key operational military power questions<sup>167</sup> was selected for various reasons. Firstly, many NeA already apply a similar process: they seek to determine what actions nations might take, which are the appropriate and applicable forces, and then to compare their prospects for victory (Lieber, 2011, pp. 454–445; Glaser & Kaufmann, 1998). Hence, reviewing NeA supports the straightforward identification of ideas suited to the approach proposed here. Further, among the “sparse and underdeveloped” structured operational-success power assessment literature, the limited efforts that do exist fall into the NeA camp. So they offer the most potential to build on previous work.<sup>168</sup>

Secondly, by assessing multiple NeA, it is possible to, from a very diverse set of criteria, identify those factors most persistently proposed as affecting battlefield victory. Such a comparison, focussed through the three key operational power questions, turns the very heterogeneity of NeA into a strength.

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<sup>167</sup> What operations are needed? Can they be conducted? How will nations fare in battle?

<sup>168</sup> Key examples used in this work are Cliff (2015), Wood (2015), and Heginbotham et al. (2015).



Finally, using NeA (and their identified common factors) offers the potential to align with nations' actual decision-making processes. That is, various nations (including the US) overtly use NeA, and many authors argue that most nations do measure operational military power through such mechanisms (Glaser & Kaufmann, 1996; Glaser, 2010; Lieber, 2011; Carus, 1987; Cliff, 2015).<sup>169</sup> And some commonality likely exists today in states' methods of assessing military power, noting nations imitate those that are successful in particular endeavours – notably military operations (Waltz, 1979, p. 127). Due to this, and the extensive unclassified NeA literature available from successful powers such as the US (several of which inform the assessment here), it is entirely possible multiple states will prefer similar factors.

### **Key Criteria for Measuring Military Power**

Further to these benefits, the three key operational power questions were applied to 24 works that can be classed as NeA or related types. This work showed that (buttressed by comparison to key factors from Section II) an initial set of nine key criteria (or power principles), discussed below, were most applicable to an improved measure of power. The nine factors were selected based on their logical applicability to operational success and also their presence across multiple NeA. This presence is highlighted, amongst various other less-common factors, in the Summary of Reviewed NeA at Annex A.

Importantly, the nine factors can be considered both as inputs and outputs. That is, they serve as “capability inputs” that define the key ideas and variables that must be considered to allow nations' potential to conduct operations and achieve victory to be assessed. Further, as is explained in Chapter Five, several (but not all) of the criteria also describe “capability outputs” in terms of measurable factors by which nations' actual likelihood of triumph can be gauged.

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<sup>169</sup> Noting that the term “NeA” is not specifically referred to by all these various authors.

## An Initial Set of Common Core Military Power Factors

The initial (but not final) nine factors are listed and briefly described below, including in terms of how they affect the potential for battlefield success<sup>170</sup> – a rarity in the literature. The factor headings are in ***bold italics*** to highlight that more detailed descriptions of the factors and their battle impacts are in [Table 4.2](#). The nine factors, which include both quantitative and qualitative elements, are:

- ***Force Structure and Technical Capacity***. This refers to the numbers, types, and capabilities (especially platform range and weapon and sensor fit-outs) of states' military assets. The greater the number and destructive capabilities of assets, naturally the more likely forces are to triumph.
- ***Modernity***. This refers to the technological age of military assets, with more modern equipment generally expected to be more battle effective.
- ***Weapon and Sensor Types and Ranges***. This refers to the nature and physical reach of the weapons and sensors on military assets deployed to a conflict area. If a military has certain types of weapons that an opponent cannot defend against, or has ones with much longer ranges, it can attack with little risk.
- ***Preponderance***. This refers to one side's numerical advantage over another in battlefield assets, with greater numbers being superior due to being able to fire more weapons and absorb more losses. This dissertation measures such superiority by comparing ratios of weapons-to-targets, dividing the total number of weapons able to target an asset type by the total number of targets.
- ***Defence Responsibilities***. This refers to the responsibilities placed on militaries by their governments, such as defending national borders and vital sea lanes.

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<sup>170</sup> That is, how do the factors affect the potential of a force to be victorious by being the first to destroy its enemies, and also to have superiority in numbers.

Such responsibilities inform how many forces militaries can apply to given situations, recognising their other obligations, thus affecting preponderance.

- **Personnel Quality.** This refers to the level of skill military personnel have to be able to effectively conduct necessary tasks, particularly in combat. More skilful personnel should perform better at destroying their opponents.
- **Doctrine.** This refers to the guidelines militaries develop for how they will operate in combat; in effect, shaping “how they fight”. The force with better doctrine should be superior at destroying its opponents.
- **Geography.** This refers to the physical attributes of the area where battles occur. It may favour the offence or defence including by its inherent nature (as some terrain such as mountain ranges are naturally more defensible) and also via states’ distance from an Area of Operations (AO) – the physical area where the relevant military operations will be conducted. The further the distance, the fewer the assets that states can normally deploy, thus affecting preponderance.
- **Logistics.** This refers to a broad range of functions that sustain military forces, include supplying items (such as food, fuel, and ammunition), and conducting repair and maintenance in the field. Without such support, exerting power over more than the shortest of distances and timespans becomes impossible.

#### A More Detailed Description of the Power Factors

As noted above, a more detailed description of the power factors is in [Table 4.2](#). In the table, the factors are also grouped into overarching considerations that provide a foundation for examining nations’ military power, as they affect all scenarios that forces would be involved in, and operational ones, enabling the analysis of specific situations. The list also discusses illustrative qualitative sources of information; all quantitative data can be obtained from publications such as *The Military Balance*.

Table 4.2: Initial Common Core Military Power Factors

<b>Quantitative Factors</b>	
<b>Factor Type</b>	<b>Factor Description and Means of Impact</b>
<b>Overarching</b>	<p><b><i>Force Structure and Technical Capacity.</i></b> This refers to the numbers, types, and capabilities (especially platform range and weapon and sensor fit-outs) of states’ military assets. These factors (particularly numbers and capabilities) define the reach, nature, and amount of destructive power that a force can project which is logically a fundamental aspect of its military power at any particular location. Asset types provide a common taxonomy for the platforms (such as destroyers or fighter-bombers) which host the weapons and sensors providing the overall capability.</p> <p><b><i>Modernity.</i></b> This refers to the technological age of military assets. Generally, more modern equipment can be expected to be more effective than older technology. Hence, the military power of a nation will be affected by the relative modernity of its equipment in comparison with that of adversaries.</p>
<b>Operationally Specific</b>	<p><b><i>Weapon and Sensor Types and Ranges.</i></b> This refers to the nature and physical reach of the weapons and sensors on military assets deployed to a conflict area and, while in effect a subset of Force Structure and Technical Capacity, it is distinct. Weapon and Sensor Types and Ranges specifically refers to the qualities of the systems fitted to an asset that <i>is in an operational area</i>. This defines the specific relative potentials of military forces, as if a military has certain types of weapons that an opponent cannot defend against, or has ones with much longer ranges, it can attack with little risk.</p> <p><b><i>Preponderance.</i></b> This refers to one side’s numerical advantage over another in battlefield assets, with greater numbers being superior due to being able to fire more weapons and absorb more losses. As discussed previously, this factor is typically calculated either symmetrically or asymmetrically, and since it is logical to presume those types of systems that can attack a particular kind of target in battle will do so, the latter approach is</p>

<p><b>Operationally Specific</b></p>	<p>preferred. But even asymmetrically it is inappropriate to compare all platforms equally as one may carry many more weapons than another (for vessels, at ratios of up to 32:1<sup>171</sup>). This provides many more chances, and a higher probability of success, for the better armed asset to destroy its target. To address this, this dissertation assesses preponderance by comparing ratios of weapons-to-targets, dividing the total number of weapons able to target an asset type by the total number of targets. The ratios for adversaries are then compared to see which can threaten assets more often and hence with a better chance of success.</p>
<p><b>Qualitative Factors</b></p>	
<p><b>Factor Type</b></p>	<p><b>Factor Description and Means of Impact</b></p>
<p><b>Overarching</b></p>	<p><b>Defence Responsibilities.</b> This refers to the defence responsibilities (strongly affected by political and physical geography) placed on militaries by their governments, such as defending national borders and vital sea lanes. The defence responsibilities inform, at the operational level, how much force militaries can apply to given situations, recognising other obligations they may need to fulfil.<sup>172</sup> This can strongly affect a force’s numbers (i.e., its degree of preponderance) at a particular place and time (Till, 2009, p. 118). Defence responsibilities can be ascertained from formal governmental defence policy papers and scholarly commentary.</p> <p><b>Personnel Quality.</b> This refers to the level of skill military personnel have to be able to effectively conduct necessary tasks, particularly in combat. The greater the quality of personnel, the more they will be able to wring the maximum capability from the equipment they are using to achieve</p>

<sup>171</sup> Comparing the maximum anti-ship armament of a *Type 52D* destroyer and a *Waspada* class Fast Attack Craft. Multiple such examples are discussed in Chapter Six and its associated annexes.

<sup>172</sup> So, while the US Navy is larger than China’s, it has worldwide responsibilities in comparison to China’s SCS focus. Thus, China can focus on matching the smaller US forces specifically in this region (Heginbotham et al., 2015, p. 3).

<p><b>Overarching</b></p>	<p>success. Personnel quality is affected by factors including education level before entering military service (the more educated the better), training and deployment experience (reflecting how good the training is and how often personnel actually apply it), and morale (Cliff, 2015, pp. 104–119).</p> <p>Of these factors, training and deployment experience are utilised due to their twin useful attributes of being highly important<sup>173</sup> and broadly assessable through open-source commentary on training performance and observation of deployments (Erickson, 2010, pp. 295–377; Cliff, 2015, pp. 121–131). In contrast, education and morale are difficult to judge and can be compensated to a degree by training and experience.<sup>174</sup></p> <p><b>Doctrine.</b> This refers to the guidelines militaries develop for how they will operate in combat; in effect, shaping “how they fight”. Doctrine provides a common guide for how a force will pursue its objectives – and the more effective it is, the better a military should fight. While broadly recognised as a key factor (Biddle, 2004, pp. 52–77), doctrine has a number of challenges as a metric to measure power. Its effectiveness can only be truly tested in actual combat and operations; there is no agreed measure for how to assess its impact; and some militaries (including China) do not publish their doctrines (Cliff, 2015, pp. 19–20).</p>
<p><b>Operationally Specific</b></p>	<p><b>Geography (Terrain Effects/Area of Operations).</b> This refers to the physical attributes of the area where battles occur. It may strongly favour the offence or defence through affecting the kill chain, movement and also via the distance of an AO from competing states.<sup>175</sup> For example, mountain ranges and deep mud provide a natural barrier hindering offensive military action. A broad appreciation of whether an area of terrain is favourable for military action can be obtained through analysis of works such as <i>Military Geography</i> (Peltier &amp; Pearcy, 1966).</p>

<sup>173</sup> Cliff shows that training and experience have a great impact on personnel quality, increasing effectiveness by 25%–100% (2015, p. 104).

<sup>174</sup> Many militaries publish little on their personnel’s education and even if staff hold equivalent qualifications, not all institutions are of the same quality (see Cliff, 2015, pp. 104–121). Morale and its effects are very difficult to measure as militaries often do not assess such information, publish it, or both (Cliff, 2015).

<sup>175</sup> Other power-supporting characteristics of even small changes in distance include the ability to generate sorties more rapidly through close distance to bases, being able to concentrate more types of forces (such as using land-based missiles to support aircraft and ships) and having more robust communications compared to ones routed through satellites (Heginbotham et al., 2015, pp. 326–328).

<p><b>Operationally Specific</b></p>	<p>Also, some AO are much closer to one nation than another, which affects how many forces each nation can apply based on its force structure and technical capability. This concept is captured in the Loss of Strength Gradient (LSG) which states that the further away an AO is from a country, (or its military bases) the weaker its military power becomes (Sakaguchi, 2011). This can lead to an equality or inversion of strength between otherwise more and less powerful forces at specific locations.</p> <p><b>Logistics.</b> This refers to a broad range of functions that sustain military forces (Cliff, 2015, pp. 139–141). It can include supplying items (such as equipment spares, food, fuel and ammunition), conducting repair and maintenance in the field, the transport of military forces, and delivering health services. Without effective logistics, exerting power over more than the shortest of distances and timespans becomes impossible. Nations’ logistics potential can be inferred from academic and professional publications (see Cliff, 2015, pp. 141–157; Puska, 2010, pp. 553–637). However such assessments are debatable as the overall qualitative effectiveness of logistics systems need to be understood, and there is neither a single reliable measure, nor are authoritative self-assessments provided by many national powers.</p>
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## **A Rationalised Set of Seven Practical Common Concepts**

The above review highlights the essential plurality of qualitative and quantitative factors that affect military power, as opposed to the purely quantitative focus on indirect measures or the privileging of single factors such as technology. From the various works, the above-noted nine factors emerge as common and compelling.

However, doctrine and logistics are not progressed as key criteria, leaving seven key factors. Doctrine is less practically useful as it remains both inaccessible, due to sometimes being classified, and immeasurable, as superiority is only provable in battle – which has not occurred in the SCS over the past 21 years under review. Due to such factors it is opaque to assess, also making it less likely to be included in states' calculations of military power and thus less relevant to any improved model.

In turn, logistics is not used as the contest in the SCS frequently occurs within very manageable ranges of nations' military bases, decreasing the importance of effective long-range logistics capabilities. Further, when examining short-term operational objectives, it is reasonable to presume that countries with offensive intentions are able to sufficiently supply their forces to seek decisive victories.

Thus the seven final concepts progressed to the detailed model are: Force Structure and Technical Capacity, Modernity, Weapon and Sensor Types and Ranges, Preponderance, Defence Responsibilities, Personnel, and Geography.

### **Conclusion**

This chapter has laid the basis for an improved measure of military power, to thus allow better testing of Realism. This focus reflects that power (let alone military power) is central to most theories of IR, and in particular Realism, yet also lacks any fully agreed definition, or means to measure it – a key confounding element in theory assessment.



To address these matters, this chapter began by reviewing the notion of power. In short, in scholarship it is generally considered to relate to the capacity for influence – with this being measured by states’ relative shares of the world’s diplomatic economic and military resources. Through using power in their strategies, nations seek to achieve foreign policy goals. They do so by affecting one another’s rational view of the costs and benefits of any course of action, and thus aim to change target states’ behaviours in ways that will deliver the desired policy objectives.

In turn, while military power can be (and often is) defined as states’ relative stocks of military assets, it more subtly can be understood as the potential for one nation to exert (or resist) the potential for attack against it by another state. This is because armed forces exert influence by the credible threat of carrying out military operations to destroy or capture the vital assets necessary for states’ survival: their territory, industry, militaries, and citizens. To the degree they seem likely to be able to do so (or not), militaries can seek to affect a target state’s perceptions of various costs and benefits, to change its behaviour; force compliance by destroying the means the nation is using to pursue a policy; or even destroy a country completely.

Of note, this chapter proposed that the threat or use of force should be particularly likely for militarily relevant objectives. These are defined as those specific foreign policy goals a state can partially or fully directly resolve via applying armed power.

Further to this, and the fact of military power being exerted practically through the conduct of operations, this chapter proposed that military power be defined as “a state’s potential for specific operational success against a particular adversary”. In turn, the measure of a state’s power (i.e. its position as weaker, matched, or stronger in any balance of power) was its potential for likely defeat, uncertainty, or success in any particular military operation – that is, it’s potential for battlefield victory in a particular scenario.

Using such a definition, if the potential for victory could be gauged accurately, and done so in a manner aligned with the means used by countries in the real world,

then this should allow for better analysis of Realist theories. After all, Realism seeks to predict states' actual behaviour, based on the notion that this is principally guided by nations' positions in balances of (mainly military) power. Hence if insight could be gained into how states themselves conduct such assessments, then Realist predictions should be able to be better tested against nations' real-world actions.

Yet seeking to develop such an understanding is fraught, as there exist a great diversity of often mutually contradictory concepts and means to measure the potential for operational success, and many have dubious relevance to states' calculations. As an initial step, this chapter reviewed four of the most common approaches to measuring military power, seeking to identify strengths and weaknesses that might be applied to a more holistic and operationally focussed gauge. These were Quantitative, Indirect, Military Capability, and ODB assessments, and aside from Indirect assessments (which in fact form the bulk of scholarly military power analyses) all of these contained certain factors, such as numerical superiority or the importance of technology, that were judged logically related to the potential for battle success.

Beyond these four approaches, NeA were selected as the preferred mechanism to investigate balances of power, both for the flexibility of the analyses they enabled, their closer practical and logical focus on military operations, and their likely closer relevance to the manner that states themselves conducted power analysis. Hence, another 24 NeA were reviewed to further identify key common factors and causal mechanisms relevant to battle success.

Ultimately, these reviews of various means identified seven power principles that were practical, useful, and important for inclusion in an improved model of operational military power: Force Structure and Technical Capacity, Modernity, Weapon and Sensor Types and Ranges, Preponderance, Defence Responsibilities, Personnel, and Geography. The next step to practically measure such power is to develop a structured means of measuring and integrating these criteria, and then comparing dyads' power once this is done. This is now done in Chapter Five.

## **Chapter Five – An Operationally Focussed and**

### **Qualitative-Quantitatively Integrated**

### **Measure of Military Power**

The absence of agreed definitions and means of measuring power, and the strong conceptual, practical, and empirical issues with existing approaches, mean that previous efforts to test Realism, including by works focussing on this dissertation’s research questions, are compromised. To address this, Chapter Four proposed an improved and operationally relevant definition of military power – namely, “a state’s potential for specific operational success against a particular adversary”. Further, it offered key capability criteria that would allow such power to be measured when input into an appropriate model.<sup>176</sup>

This chapter now applies these concepts practically through developing just such an approach. The chapter is in two sections. The first provides an overview of the model, which is referred to as the 5-7-7 approach due its use of five steps, seven capability inputs, and seven outputs. This section defines those steps, inputs, and outputs, and describes how these allow power to be measured and how the model can be used to test Realism. The second section discusses how the model operates in detail and concludes with a self-assessment of the utility of the approach – which represents, to the author’s knowledge, the most detailed publicly available model of its type.

#### **Section I: An Overview of the Power Assessment Process**

Under the military power definition used here, the measure of a nation’s power is its prospect for specific operational success. So, as noted in Chapter Four, if the likely outcome is defeat, then the state is rationally considered as weaker than its

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<sup>176</sup> Force Structure and Technical Capacity, Modernity, Weapon and Sensor Types and Ranges, Preponderance, Defence Responsibilities, Personnel, and Geography.

opponent; if the outcome is uncertain, then the nations are of roughly equal power; and if victory seems likely, then the country is more powerful.

As also discussed in the last chapter, to assess such potential logically requires answering three key questions. These queries are: what operations do two contending states need to conduct to achieve their objectives; can either or both do these at all (if one can and the other cannot, the former is clearly more powerful); and if both can, how well might they succeed against one another? The result of this process is an assessment of both states' military power: likely defeat, uncertainty, or victory.

### **A 5-7-7 Model of Military Power: Process, Inputs and Outputs**

This dissertation proposes that these key questions can be addressed by a 5-7-7 model of military power, so called due to its use of five logical steps, seven capability inputs and seven outputs. Conceptually, the model draws on nations' characteristics in the inputs and processes them via the steps to produce rankings in the outputs, which are measurable factors relevant to battlefield success. States' outputs are then compared holistically to generate a qualitative assessment of their scenario-specific potential for victory and hence military power. This methodology is summarised below, and described in detail in Section II, with an illustration of the model's operation also provided using a flowchart in [Figure 5.0](#).

#### **The Five-Step Process**

The five-step process forms the fundamental logical mechanism by which military power is measured in the model, and thus also forms its structure. Its nature reflects that the three key questions can analytically be addressed, and hence a measure of nations' military power reached, via a five-step method using the key concepts drawn from the NeA review.

These steps are, firstly, that competing states' specific offensive and defensive operational needs for a particular militarily relevant objective must be defined, together with these operations' technical requirements. These can include the range that assets must have to reach an AO, and that forces must be able to conduct air strikes. Secondly, each nation's operationally applicable (i.e., relevant) units for these scenarios must also be defined, by considering issues including force structure and defence responsibilities. Thirdly, the potential of those applicable forces to meet operational needs can be tested by comparing the technical requirements against the forces' actual capabilities. For example, do the units have aircraft that can reach the AO, and of those that can, are these able to conduct airstrikes? Fourthly, the potential for competing forces to triumph over one another in battle can be assessed by considering their relative strength across various individual factors, referred to as capability outputs. Fifthly, the results of the previous steps can be summarised into a single integrated assessment of nations' respective potential for victory – that is, their military power.

### **Seven Capability Inputs**

The above process, to generate assessments of military power, must actually input relevant information. The concepts and data sources used here are the seven key military power criteria developed in Chapter Four: Force Structure and Technical Capacity, Modernity, Weapon and Sensor Types and Ranges, Preponderance, Defence Responsibilities, Personnel, and Geography. These are discussed in the previous chapter and summarised there in [Table 4.2](#).

### **Seven Capability Outputs**

The remaining element necessary to discuss the model are its capability outputs. These are related to, yet differ from, the capability inputs. This reflects that the seven military power criteria are not all suitable to serve as outputs, in the sense of measurable factors by which nations' actual likelihood of battlefield triumph can be gauged. For example, while the Defence Responsibilities factor helps determine

which forces nations will likely deploy for a particular operation (and hence is a useful “input”), it does not sensibly also serve as a measurable output.

So, instead, this model uses somewhat different outputs. These are comprised of four factors taken directly from the inputs (or being amalgamations of them) and three novel outputs that arise either as outcomes of the logical operation of the model, or are matters that, in the author’s opinion, are logically relevant gauges and should be included. These are now listed below, together with their battlefield relevance, with their titles again in ***bold italics*** to highlight that more detailed descriptions are available in [Table 5.0](#). The novel outputs are:

- ***Operational Suitability***. This refers to whether the forces that competing states’ can apply to an AO can conduct the required missions (such as to conduct an air strike) to meet their operational needs. If one force or another cannot, it must be judged weaker. Indeed, an unsuitable force is judged as one that will not be deployed by a state (if it is yet to begin military action) or will withdraw if it becomes unsuitable due to losses in battle – as it cannot achieve victory.
- ***Resilience***. This refers to the degree of risk a nation’s forces will face in achieving an operation, based on an assessment of how many critical assets (such as amphibious ships) they must lose before becoming operationally unsuitable. The more Resilient, the stronger the force.
- ***Asymmetry***. This refers to whether forces can either effectively attack targets at ranges well beyond which the target can do so in return (such as competing jet fighters armed with differently ranged anti-aircraft missiles), or if the target has no suitable weapons to return fire. To the degree a force has Asymmetry it is stronger. This measure subsumes the Force Structure and Technical Capacity, and Weapon and Sensor Types and Ranges factors into one criterion.

Table 5.0: Novel Assessment Factors

Quantitative	
Factor Type	Factor Description and Means of Impact
<b>Operationally Specific</b>	<p><b>Operational Suitability.</b> This is an assessment of whether operational forces can conduct necessary missions in an AO (such as air strikes or amphibious assaults) to achieve a nation’s objectives. This addresses the key question of “can states conduct needed operations at all?”, with those that can being stronger. Indeed, an unsuitable force is judged as one that will not be deployed by a state (if it is only considering military action) or will withdraw if it becomes unsuitable due to losses in battle – as it cannot achieve victory. This serves to restrain new conflicts and provides a means to efficiently defeat competitors in combat: a state lacking a suitable force should not rationally initiate armed aggression, and a force rendered unsuitable in battle should depart even if not all its assets are destroyed.</p>
	<p><b>Resilience.</b> This captures a force’s potential to absorb losses before it becomes operationally unsuitable, defined by counting the numbers of key assets that generate critical effects. So, a nation may depend on only one amphibious ship to enable an island assault, or may have two or three, providing more Resilience. The greater a nation’s Resilience, the greater its chance of victory. This factor is not typically considered in most power assessments but reflects a key aspect of modern warfighting, noting that militaries overtly seek to identify and attack the critical vulnerabilities that underpin their adversaries’ warfighting potential.<sup>177</sup></p>

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<sup>177</sup> More specifically, Resilience reflects the widely used (in Western militaries, and thus likely to be copied by other forces) proposition that an adversary’s “centre of gravity” (i.e., the key source of its warfighting potential in a given situation) should have its critical vulnerabilities identified and then attacked. This presents the most efficient means of defeating an opponent, in contrast to attacking non-vital assets. For US perspectives see Joint Chiefs of Staff (2013) and Strange (1996).

	<b>Asymmetry.</b> This captures a force’s superiority in the kill chain by having the longest ranged weapons or being able to fire upon targets that cannot do so in turn (such as torpedo-armed helicopters hunting submarines with no anti-aircraft missiles). This factor subsumes Force Structure and Technical Capacity, and Weapon and Sensor Types and Ranges. The greater the asymmetric advantage, the stronger the force.
<b>Overarching</b>	<b>Modernity.</b> This refers to the technological age of military assets. Generally, more modern equipment can be expected to be more effective than older technology. Hence, the military power of a nation will be affected by the relative modernity of its equipment to that of its adversaries.
<b>Operationally Specific</b>	<b>Preponderance.</b> This refers to one side’s numerical advantage over another in battlefield assets, with greater numbers being superior due to being able to fire more weapons and absorb more losses. Preponderance is assessed by comparing ratios of weapons-to-targets, dividing the total number of weapons able to target an asset type by the total number of targets.
<b>Qualitative Factors</b>	
<b>Overarching</b>	<b>Personnel Quality.</b> This refers to the level of skill military personnel have to be able to effectively conduct necessary tasks, particularly in combat. The greater the quality of personnel, the more they will be able to wring the maximum capability from the equipment they are using to achieve success.
<b>Operationally Specific</b>	<b>Geography (Terrain Effects/Area of Operations).</b> This refers to the physical attributes of the area where battles occur. It may strongly favour the offence or defence through affecting the kill chain, movement and also via states’ distances to an AO.

Notes: In the table, the fourth to seventh outputs of Modernity, Personnel, Preponderance, and Geography are also included for reference, shaded in grey, and with a summary description. In practice, those four factors use the same definitions as in [Table 4.2](#).



## **Summary of the 5-7-7 Model**

The above description of process, inputs and outputs provides an overview of the improved military power model used in this dissertation. While Section II addresses the application of the model in detail, the model is also illustrated in the five-step flowchart in [Figure 5.0](#) below.

While the diagram is largely self-explanatory, in summary, it shows the operating logic of each step through its objectives, main inputs and main outputs. The figure also shows how the steps relate to answering the three key operational military power questions that pertain to the model. While the overall approach harnesses the previously discussed key inputs and outputs, various subsidiary uses of similar factors occur within the operation of the process. For example, Step One generates as an output the key technical requirements that forces must meet to achieve operational needs. In turn, these become an input to Steps Two and Three, where they are used to help define operational forces and to test whether they can meet such needs. Such “within model” inputs and outputs are shown with blue arrows.

## **Notes on the Military Power Measurement Process**

Before discussing the model in detail, for the sake of completeness some notes on its operation are usefully addressed. Firstly, when determining what operations states will desire to conduct and where, from the perspective of a potential aggressor, operational needs are always defined in terms of those that enable decisive (i.e., quick and cheap) victory. This reflects that, to test OR in particular, states should only attack when they meet such requirements, as these define the conditions associated with opportune moments for aggression. After all, if a force is unsuited for rapid triumph, it raises the risk of a longer and more expensive conflict with an increased potential for a failure, which should make aggression less likely.<sup>178</sup>

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<sup>178</sup> This reflects both that a longer war is intuitively more expensive, but an extended duration raises the prospect of the involvement of other parties or unexpected military defeats weakening forces.

Figure 5.0: The 5-7-7 Model – A Military Power Measurement Process Overview

*Key Question: What Operations Will Competing Nations Seek to Conduct?*

**Step One: Identification of Objectives, Operational Needs and Capability Requirements**

**Objectives:** Identify states’ militarily relevant objectives and locations, the types of operations necessary to achieve these aims, and these operations’ associated capability requirements.

**Inputs:** Key Concepts – Geography, Force Structure and Technical Capability; assessment of state aims and necessary operations.

**Outputs:** Technical requirements for assessing national inventories, providing metrics for assessments of Operational Suitability and Resilience.

*Key Question: Can Nations Conduct Needed Operations?*

**Step Two: Identification of Operationally Applicable Forces**

**Objectives:** For operations identified in Step One, assess which military units are likely to be responsible for conducting these, where are their bases, and how much of their mission-suitable equipment is able to be applied at each location.

**Inputs:** Key Concepts – Force Structure and Technical Capacity, Geography, Defence Responsibilities; capability requirements from Step One.

**Outputs:** List of operationally applicable forces.

**Step Three: Operational Suitability and Resilience Assessment**

**Objective:** For each operational location, assess how well the forces identified in Step Two can meet the operational requirements identified in Step One. What operations can they conduct, at what risk (in terms of absorbable losses), and how do these match the needs of states involved.

**Inputs:** Key Concepts – Force Structure and Technical Capacity; forces identified in Step Two.

**Outputs:** Assessments of Forces’ Operational Suitability and Resilience.

*Key Question: How Will Nations’ Forces Fare in Battle?*

**Step Four: Comparative Forces Assessment**

**Objective:** for operations identified in Step One, assess how operationally suitable forces identified at Step Three compare in factors relevant for battle success.

**Inputs:** Key Concepts – Force Structure and Technical Capacity, Weapon and Sensor Range, Modernity, Personnel, Geography, and Preponderance; operational forces from Step Two.

**Outputs:** Assessments of Forces’ Asymmetry, Modernity, Personnel, Preponderance, Geography.

**Step Five: Integrated Military Power Assessment**

**Objective:** Assess how competing forces’ comparative strengths across all criteria integrate to form an overall assessment of military power in terms of prospects for operational success.

**Inputs:** Assessments of Forces’ Operational Suitability, Resilience, Asymmetry, Modernity, Personnel, Preponderance, Geography, from Steps Three and Four.

**Outputs:** Integrated Assessment of Military Power: likely defeat, uncertainty or victory.

Also, while the five-step process can be conducted initially from the perspective of either offensive or defensive forces (and indeed both sides impact each other), for the sake of consistency, in this dissertation the assessment is always done first from the perspective of a potential aggressor. Further, the steps also reflect the logical process by which military power is exerted under Realism. That is, as nations use such power to achieve specific ends (i.e., to threaten costs, or withstand such threats), to do so rationally they must, too, determine their objectives and capability requirements; allocate forces based on these; and recognise that competing units will engage in battle. This procedure, in one way or another, must occur in effectively all deliberate real-world applications of force by states. This also helps explain the consistency of the various approaches found across the many NeA, which too (overtly or not) contain this process.

### **Benefits of the Approach**

As a means to measure military power, operational assessment in alignment with the above supports several key lines of analysis. Initially, it enables testing OR, DR(GS), DR(GLS) and PTT in a much more practically relevant and compelling way by better allowing for the identification of opportune moments for aggression and assessing balances of power.

That is, by focussing on states' militarily relevant objectives, the process identifies scenarios where the use of force is already appealing and so more likely. Then, if the operations that a state can conduct enable rapid and cheap success *precisely for such objectives*, these are clearly compelling "opportune moments" for aggression, allowing assessment of OR and DR. And to assess BOP vice PTT, such moments must also be correlated with the operational balance of power that most reflects their potential for success. Indeed Heginbotham et al. note that "it is necessary to consider the operational circumstances of specific regional scenarios in evaluating the balance of power in any tangible or meaningful way" (2015, p. 22). Further, examining defensive requirements highlight times when weaker forces can still match the militaries of stronger nations. This allows for a nuanced analysis of

behaviour by identifying when nations are *actually* weak. Lastly, considering operations enables assessing the development of military forces individually over time by examining whether they can conduct more complex operations at all (Tellis et al., 2000, pp. 158–159).

### **Measuring, Comparing and Integrating Factors**

More broadly, while the above methodology is, in a process sense, largely self-explanatory, it remains necessary to describe how the individual measures can be gauged, compared between states, and finally integrated into overall assessments. These are, as noted in Chapter Four, the final logical steps necessary to describe a structured model, once definitions and assessment criteria have been selected.

Notably, there is little guidance in the “sparse and underdeveloped” literature on how to develop structured measures and means of comparison and integration. While many attempts exist, these are frequently entirely opaque in how they conduct such steps.

As a result, the approach used here draws principally on Cliff (2015), Wood (2015) and Heginbotham et al. (2015), all works that sought to make their methodologies more clear. These efforts all made essentially broad qualitative assessments of various states’ operational military power, at the level of individual scenarios or broader operating areas, based on analysts’ judgement of their performance across multiple power criteria.

That is, analysts first made qualitative and quantitative assessments of nation’s relative capacities in a range of power-relevant criteria. These were generally assigned ratings on four- or five-point colour-coded scales (to ease visual representation), such as from “Very Weak” to “Very Strong” (Wood, 2015). In doing so the works sought to describe meaningful and defensible gradations in states’ relative capacity while “avoiding the appearance that a high level of precision is possible” (Wood, 2015, p. 3), noting the chaotic nature of battlefield outcomes.

Once various ratings had been determined, they were integrated into cumulative assessments of nation's overall power (with equivalent caveats), again by analysts' judgement. This essentially involved a simple additive process, where states with more advantageous ratings across more criteria, each of which were weighted equally, were rated as more powerful.

Regarding how ratings were assigned for criteria and overall, this was most clearly described by Heginbotham et al. (2015, pp. xxix–xxx) based around the notion of relative advantage. This refers to adjudicating, but not seeking to quantitatively measure, whether one force is superior in a given criterion or overall. So, one side's personnel may be demonstrably *better* trained than another's; however, the specific degree of this or its exact impact may be impossible to quantify. But by being better relative to an opponent, this confers a *relative advantage* on one side, which should result in an increased likelihood of military success. This approach allows for the comparison both of common criteria between forces, and also the summation of these results into overall assessments of military power.

Of note, while such qualitative and judgement-based assessments inevitably retain some opacity, such approaches are to an extent inevitable when measuring and comparing both intangible and quantitative criteria and summing these into overall assessments of military power. The only alternative is computer-based modelling, which has the issues discussed in Chapter Four.

Further to the above, a colour-coded, additive, qualitatively based relative advantage assessment methodology is used in this dissertation. In this approach, when developing overall ratings all seven factors have equivalent weightings unless specifically otherwise noted. This reflects that in some instances a state's degree of relative advantage in a single (or several) factors is so overwhelming that it is logically justifiable to assign an increased weighting. The elements of this total process are now described below.

## Measuring Individual Factors

While how each of the factors can be measured is broadly noted in [Tables 4.2](#) and [5.1](#), and detailed in this chapter’s Section II, from a conceptual sense all are gauged either in absolute or relative terms. For example, Operational Suitability is an absolute measure, logically assessed by comparing technical operational capability requirements against the capacities present in nations’ armed forces. This results in a binary (and absolute) “yes” (green) or “no” (red) regarding whether states are minimally capable. Nations that are incapable are weaker.

Similarly, Resilience can be assessed by determining which assets are the weakest link in a nation’s forces being able to conduct necessary operations, even before any effects of enemy action. Intuitively, having a single asset represents high (red) risk in an absolute sense, with two (yellow) or more (green) decreasing risk and thus increasing Resilience. Likewise, Geography can either support defenders, aggressors, or be neutral, and is similarly colour-coded; although as a practical matter it was found convenient to group an assessment of the impact of Geography with the relative factors. In turn, Asymmetry, Personnel, Modernity, and Preponderance are inherently relative, with any state’s degree of advantage coded green (advantaged), yellow (unclear advantage) or red (disadvantage). This is illustrated in [Table 5.1](#) for an “unclear” outcome in Modernity.

Table 5.1: Illustrative Measure of Single-Factor Military Power

Assessment Factor	Measurement	Relative Advantage/ Likelihood of Victory	Assessment Outcome
<b>Modernity:</b> Do own forces have more modern assets of equal capability?	Review of Force Structure age against adversary.	YES: all assets are more modern, chance of success is higher	
		UNCLEAR: some assets are more modern, chance is uncertain	X
		NO: all adversary assets are more modern, chance of success is lower.	

While relative advantage is not measurable on an absolute scale, logically the degree of superiority in a factor improves chances for success. A nation with forces 150% larger than an adversary would have a greater chance of success than with forces only 120% larger, although the specific level of increase is not quantifiable.

### Developing Integrated Assessments

Groups of individual factors (namely the seven used in this model) are then aggregated into summaries, showing each state's degree of absolute or relative advantage across each factor (see [Table 5.2](#) below). In turn, these summaries are integrated into a rating on a five-point scale of each state's overall degree of relative military power inferiority, parity, and superiority, as shown in [Table 5.3](#). Since military power is here defined as a state's potential for operational success, this scale matches power ratings with assessments of the likelihood of rapid victory for an aggressor. This reflects that assessments are conducted from the point of view of an attacker, whose operational objective is decisive victory.

Practically, to simplify and clarify the ratings assigned to nations, the rule was used that unless otherwise justified, summaries of all green generate clear superiority, all red show clear inferiority, and mixtures of the two fall across the spectrum of parity. While this approach minimises the likelihood that any state will be judged as having clear superiority or inferiority, this is appropriate given the chaotic nature of operations, which make it much more probable that most outcomes will in fact be to some degree uncertain.

Further, for any scenario two different analyses can be conducted: one for state A in comparison to state B, and the reverse. In this dissertation, such potential assessment outcomes were treated as reversed (or "mirrored") images of one other, making only one detailed analysis necessary. So, where one nation is Clearly Superior the other is Clearly Inferior, the same for Advantaged and Disadvantaged parity, and Rough Parity is equal. As noted above, the full assessment is always done from a potential aggressor's perspective.

Table 5.2: Example Factor Summary

Suitability	Resilience	Asymmetry	Modernity	Personnel	Preponderance	Geography
Suitable	1	Neither Advantaged	Advantage	Neither Advantaged	Neither Advantaged	Neither Advantaged

Table 5.3: Example Integrated Assessment

Rapid Victory Highly Unlikely/ Clearly Inferior	Rapid Victory Unlikely/ Disadvantaged Parity	Rapid Victory Possible/ Rough Parity	Rapid Victory Probable/ Advantaged Parity	Rapid Victory Highly Likely/ Clearly Superior
	X			

**Applying Integrated Assessments to Investigating Structural Realism**

The outcomes of the model in terms of assessments of power inferiority, parity or superiority identify states’ positions in balances of military power and allow for the empirical analysis of the Realist theories under consideration. In particular, the differing expectations for state-type behaviour in territorial disputes, summarised in Table 3.4 in Chapter Three, can now be aligned with the power outcomes identified by the model, as shown in the updated assessment tool in Table 5.4. Using this, once a state’s power is assessed (which also defines, in reverse, the position of its dyad counterpart), it is possible to show which behaviours each nation should manifest as described by the theories; or determine whether either is weak and hence its actions provide little insight. These predictions can then be checked against the historical record to test which theories are more correct.

Illustratively, using the example in Table 5.3 above, an aggressor is judged as having a rating of disadvantaged parity, with a defender thus having advantaged parity. Hence, both states’ behaviour can be assessed by considering the strategy preferences mapped out under the tri-coloured “parity” area. So, if the potential aggressor initiates and responds with escalating distinctive (para)militarised strategies seeking to gain control of the area, it would be classed as an OR-PTT state; in the same scenario but using non-militarised strategies, it would be an



OR-BOP state. If it initiated and responded in kind to normal cooperative and coercive strategies, it would align with DR(GS). If it sought escalating cooperation, it would be classed as a DR(GLS) state. In turn, the reactions of the defending state can be assessed in the same manner.

Table 5.4: Updated Realist Behaviour Assessment Tool

Power Inferiority	Disadv'd Parity	Rough Parity	Advant'd Parity	Power Superiority
<p><b>Irrational State:</b> Initiate and respond with distinctive coercive actions.</p> <p><b>OR/DR State:</b> Focus on Cooperative resolution.</p> <p><b>OR/DR State:</b> Defend in face of military attack.</p>	<p><b>OR(PTT):</b> Focus on initiating and responding with escalating distinctive coercive <u>(para)militarised</u> strategies, including <b>major conquest</b>.</p> <p><b>OR(BOP):</b> Focus on initiating and responding with escalating distinctive coercive <u>non-(para)militarised</u> strategies.</p>		<p><b>OR(PTT):</b> Focus on initiating and responding with escalating distinctive coercive <u>non-(para)militarised</u> strategies.</p> <p><b>OR(BOP):</b> Focus on initiating and responding with escalating distinctive coercive <u>(para)militarised</u> strategies, including <b>major conquest</b>.</p>	
	<p><b>DR(GS)BOP:</b> Focus on initiating, and responding in kind to, normal coercive or cooperative strategies. Will use strongly mixed strategies. Will respond in kind to distinctive coercion in defence; but show restraint in offence.</p> <p><b>DR(GS)PTT:</b> As for DR(GS)PTT at power superiority, but may initiate and respond with escalating distinctive coercive strategies, including <b>minor conquest</b>, in offence should normal strategies fail.</p>		<p><b>DR(GS)BOP:</b> Same as for DR(GS)BOP at power parity, but may initiate and respond with escalating distinctive coercive strategies, including <b>minor conquest</b>, in offence should normal strategies fail.</p> <p><b>DR(GS)PTT:</b> Focus on initiating, and responding in kind to, normal coercive or cooperative strategies. Will use strongly mixed strategies. Will respond in kind to distinctive coercion in defence; but show restraint in offence.</p>	
	<p><b>DR(GLS):</b> Focus on initiating and escalating cooperative strategies, including to distinctive levels, and show restraint in response to coercion.</p>			
	<p><b>OR/DR State:</b> Focus on general control-enhancing behaviours in occupied territories.</p>			

*Notes: Offensive Realism (OR), Defensive Realism (DR), Power Transition Theory (PTT), Balance of Power Theory (BOP), Gains Sensitive (GS), Gains Less-Sensitive (GLS). Grey cells are actions unsuited to differentiating state-types. Beyond the actions above, an OR state should consistently initiate new disputes and pursue existing offensive ones. A DR(GLS) state should not initiate new disputes, and may allow existing offensive ones to lie fallow. A DR(GS) state may occasionally initiate new disputes, and intermittently pursue existing offensive ones.*

## Practical Issues and Caveats when Measuring and Integrating Assessments

Finally, a range of key assumptions and caveats are addressed below, with extra information for ***bolded italicised*** issues available for the reader in [Table 5.5](#). As an initial practical point, this model is intended to be applied to assessing ***static (i.e., opening) balances*** of power present before the beginning of hostilities, although it can also be applied to a particular “snapshot” of forces during a conflict. It is not intended to assess the detailed progression of long-term operations as attempted by the campaign or dynamic analysis efforts discussed in Chapter Four.

Further, the more subjective nature of the integrated assessments in particular can reduce the credibility and repeatability of these outcomes, and so injure the utility of the model and its use for theory testing. This risk is ***mitigated by three elements***: such assessments are supported by written justifications (to explain decisions reached); to assess theories requires only judgements of likely defeat, uncertainty, or victory (so more arguable fine nuances will less upset a final analysis); and that practical predictive failures reflect more the chaotic nature of battle than failures in the model. Indeed, regarding any empirical questions of the model’s performance, the approach is able to assess military power with more analytical rigour than, in particular, the indirect quantitative approaches most pervasive in the IR literature.

Finally, various assumptions were necessary for the operation of the model. While some apply only to individual factors, and so are discussed in Section II, five assumptions affect the entire model. These are a ***focus on dyads*** (pairs of countries), reflecting the military power definition in Chapter Four; a presumption that ***states assess military power in common ways*** aligned to the model (otherwise all predictive power is lost); that nations will assess military power based on ***reasonable adverse scenarios*** (in particular, the potential for a surprise attack); that states will ***act to maximise their strengths*** in the model’s criteria (to have the greatest chance of victory); and that countries ***focus on the potential for initial operational battle success*** (nations base their decisions on their prospects for victory in an initial battle, rather than any long-term war that may result).

Table 5.5: The 5-7-7 Model – Expanded Key Definitions, Supporting Concepts and Commentary

Key Terms and Selected Commentary (Listed in the Order That They Appear in the Text)
<p><b>A focus on static balances.</b> This focus on opening balances reflects that these most-affect the determination by states of opportune moments for aggression (i.e., chances for decisive victory) and hence form the best basis for testing Realist predictions. Practically, this issue also excludes the need to consider complex and high-risk long-term strategies. For example, in the SCS a nation could seek to capture an occupied island by mounting a long-term blockade. While this may be a low-risk strategy overall, as it does not support rapid, cheap victory it does not align with definitions of an opportune moment and so does not need to be considered. Finally, a focus on opening balances of forces offers previously discussed benefits in access to peacetime data.</p>
<p><b>Mitigating risks to the model’s credibility and repeatability.</b> Any integrated qualitative analysis is clearly highly sensitive to the skills and judgement of the analyst; particularly so for any assessments which are not coded as overall green or red. And indeed, as noted before, there may be instances where a states’ capacity in some factors is so overwhelming that it is justifiable to assign an overall rating that does not directly reflect the summary.</p> <p>These issues can reduce the credibility and repeatability of any power assessment, and thus both injure the overall utility of the model and its application to assess Realist theories. Three elements are used to address these concerns. Firstly, all integrated assessments are accompanied by a detailed written exposition that discuss why a particular final power rating was assigned. Secondly, to assess the theories, only broad ratings of likely defeat, uncertainty or victory are generally required, making it less likely that the specific details of, in particular, the various assessments of degrees of power parity will upset a final analysis.</p> <p>Thirdly, while the model provides a promising mechanism for investigating military power, its results are treated with caution. The chaotic and complex nature of battle makes it impossible to perfectly predict victory in battle. Hence while the approach used provides a traceable and logical basis for estimating power, it is entirely possible that some of its analyses will prove incorrect when tested in combat. However, such disparities should be the result of the nature of warfare rather than failures in the model’s approach.</p>
<p><b>A focus on dyads.</b> Most conflicts are between two states, and larger complex wars involving more states still tend to remain two sided, as they frequently grow from initial two-party confrontations (Valeriano &amp; Vasquez, 2010, pp. 563–564). Because of this, the model focusses on power relationships between dyads rather than between three or more parties. So, in the SCS, even though three (or more) states might conceptually find themselves in concurrent mutual combat, such situations are not considered. Instead, the bilateral balances of power between different pairs of states among the three are investigated.</p>

**Common power assessment approaches.** Nations are presumed to utilise the same means of assessing military power as outlined in the model and to be equally well able to do so. This reflects that predicting state behaviour requires both attempting to emulate processes of national assessment of military power but also an assumption that all states use the same method and are able to do so equally well. While this assumption may appear far-fetched, as noted in Chapter Four, states mimicry of one another's processes provides a reason to expect similarities in methodology. Further, such an assumption lies at the heart of any assessments which seeks to consistently correlate national military power and state behaviour; that is, all efforts at Realist analysis.

**Nations will consider reasonable adverse scenarios.** Of the seven criteria for assessing military power, the one most sensitive to rapid change is Preponderance. A carefully prepared nation can logically rally more forces than one taken by surprise, and this factor must be taken into consideration when assessing power. In this dissertation, both attackers and defenders are presumed to base their assessments on the reasonable chance of an aggressor achieving a surprise attack. As discussed later in this chapter, this translates into a rule for an aggressor having two-thirds of its overall forces available and a defender one-third.

**Nations will act to maximise their chances of success.** Noting states are assumed to use the 5-7-7 model to assess military power, rationally they should seek to maximise their military power within the framework of this model at specific times and places. Therefore, when there is flexibility to do so, nations are assumed to act operationally to maximise their value in each military power factor. This means that countries may, for example, defer their defence of a particular less valuable objective to rally their available forces, allowing them to generate greater preponderance and hence a stronger counterattack in the near future.

**Focus on the potential for initial operational battle success.** As noted in Chapter Four, under Realism states are presumed to (and in fact appear to) make decisions to engage in military aggression based on the prospects for immediate success rather than on what may or may not occur in a long-term war, that itself only might arise from an attack. Indeed, this consideration partially drives the operational focus of the 5-7-7 model. In turn, nations' decisions to conduct operations are considered to be based on the prospect for decisive (cheap and easy) victory in any initial battle that occurs, rather than further operations or wars that may result.

## **Section II: The Military Power Model in Detail**

With this overview completed, it is now possible to discuss in richer detail the five steps undertaken to measure of a state's military power – that is, its potential for victory in a particular scenario. This is done below, focussing on key conceptual issues, necessary main assumptions and practical rules, with the intent being to enable a reader to easily understand and apply the model to diverse situations.

Of course, the outcomes of the application of the model will vary depending on the scenario, and as noted in this section, specific situations may require additional assumptions, rules, or judgements. Further, certain rules guiding the model's operation even in some general situations are quite complex and would not be contained appropriately in this section. All these issues, in terms of the approach's application to the SCS, associated specific rules, and exposition of complex general ones, are addressed in Chapter Six and Annex B.

### **Step One: Identification of Objectives, Operational Needs and Capability**

#### **Requirements**

Before attempting to assess competing forces' chances in battle, it is necessary to first define what operations individual states will attempt to conduct at all and their potential to achieve these as "stand-alone" actions even before engaging in combat. After all, a nation that cannot conduct even its minimally necessary operations is clearly weaker than one that can.

This task can logically be achieved by identifying states' military relevant objectives, determining the types of operations that they would need to conduct to realise these, translating the operational requirements into technical metrics (notably range), and then comparing these to the capabilities in countries' national military inventories. The purpose of Step One is to conduct the first several elements of this

process: to propose objectives, relevant operations, and associated capability requirements. These are then compared to states' forces in Steps Two and Three.

In particular, the outcomes of Step One are specific metrics to enable the measurement of states' Operational Suitability and Resilience, the first two military power assessment factors. As noted previously, Operational Suitability refers to whether a nation's military has the minimum equipment necessary to conduct needed operations at particular locations. Resilience refers to, if a country's forces *are* operationally suitable, how many losses they can suffer before becoming unsuitable. Logically, the more Resilience a force has, the more powerful it is, as it can better withstand accidental losses or those caused by an enemy.

### **Key Inputs**

This step is most importantly informed by the NeA-derived concepts of Geography, and Force Structure and Technical Capability. This reflects that the model seeks to define specific operations and their technical requirements, and then assess operational forces' (i.e., those that can actually reach an AO and usefully contribute) potential to achieve these. So, range requirements reflect the Geography factor. Further, Force Structure and Technical Capacity (which encompasses asset characteristics, especially in terms of range and weapon and sensor fit outs) helps define which military assets can contribute to meeting defined metrics.

### **A Process for Defining Needs and Requirements**

To define Operational Suitability and Resilience metrics involves determining a nation's militarily relevant objectives in a particular area, the operations that its armed forces need to conduct to achieve these, and hence what are the technical capability requirements for its military equipment to make such operations feasible. This analysis is performed through a broadly four-phase process.

## Phase A – Identifying Militarily Relevant Objectives, Targets and Outcomes

To usefully assess operational military balances, it must first be determined where force is likely to be used, and how. In this dissertation, this is done by identifying states' offensive militarily relevant objectives<sup>179</sup> – that is, what goals they might seek to use aggressive force to achieve, and where. The focus on offensive action reflects that armed power is, logically, used to change the status quo – resulting in a need to identify where aggression may occur.<sup>180</sup>

Once objectives are proposed, targets and outcomes are described to assist subsequently defining necessary operations. Targets are those physical objects (such as facilities or military platforms) or geographic areas where military force needs to be applied to achieve the desired objectives. Target(s) may comprise one or several AO, depending on their geographic proximity.<sup>181</sup> Outcomes are general simple statements of the results desired from armed action on a target, such as “the destruction of the ship” or “conquering the area”. Describing targets and outcomes assists to both define certain operational requirements (such as the range assets must have to reach a target) and to conceptually resolve what may be very broad militarily relevant objectives into discrete “operationally sized” aims suitable for assessing operational balances of power.

Any identification of objectives, targets and outcomes is informed by the analyst's judgement and subject matter expertise, aided by consideration of relevant materials. For example, objectives can be identified by reviewing states' declared aims, such as in policy papers or media releases, and assessing which are suitable for resolution by military power.<sup>182</sup> Alternatively, for some aims, states may also have overtly threatened the use of force; and both means of identification can occur in complementary ways.

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<sup>179</sup> Foreign policy goals suited to being directly resolved, partly or wholly, by the use of armed force.

<sup>180</sup> This is especially so for opening balances – that is, the status of forces *before* conflict commences.

<sup>181</sup> So, several nuclear facilities close together would logically be considered one AO, whereas if widely separated may well be classed as several.

<sup>182</sup> As discussed under ***Militarily Relevant Objectives*** in [Table 4.0](#).

Phase B – Determining Operational Needs, General Capability Effects and Associated Capability Requirements

Once military objectives, targets and outcomes have been defined, the likely types of operations needed to achieve these can again be determined through logical consideration informed by professional judgement and knowledge of the relevant literature.<sup>183</sup> The types of operations for both potential aggressors and defenders must be developed holistically, considering their respective potential to impact one another. This can, in particular, exacerbate the necessary requirements for an aggressor to achieve decisive victory.

For example, five nations make overt claims on islands in the SCS controlled by other states. These hence form targets for military action, with the desired outcome for the aggressor of seizing such sites. If any nation wished to capture a defended island quickly and at low risk, it would need to conduct both AA and Sea Control (SC) operations. The latter generate SC, the condition where a nation is able to freely use an area of sea for a period of time for its own purposes (often while it conducts another operation) while denying its use to an adversary (Tellis, 1990) – a necessary condition for amphibious attacks to proceed at low risk. While SC can be achieved in many ways (discussed in Annex B), the most straightforward involves being able to hold at risk (by being able to detect and fire a weapon at) *any* target that impinges on the SC area. Such a capability endangers any adversary efforts to attack the zone, and so provides a reasonable level of safety to assets located within it. In turn, achieving SC in this way may require (depending on the opponent) being able to *concurrently* threaten aircraft, ships, and submarines – and at *all times* until the AA force has completed its assault.

In contrast, six SCS nations have island-defence requirements, forming targets where the desired outcome is to retain control. To do so, nations must conduct SD

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<sup>183</sup> As discussed under ***What operations will nations seek to conduct in Table 4.1.*** Examples from a naval perspective include Till's *Seapower: A Guide for the Twenty-First Century* (2009) and Elleman and Paine's *Naval Power and Expeditionary Warfare* (2010).



operations, with SD being the condition where a nation denies an adversary the free use of an area of sea, noting this does not mean it can also freely use it for its own purposes (Tellis, 1990). To conduct SD requires, at minimum, the availability of some means, at some time, to threaten an invader; and as such even a single unit of air, surface, or submarine capability is sufficient. Comparing SD and SC highlights the differences in operational needs based on offensive and defensive objectives.

Further, operations can be broken down into the effects they rely upon for success (again, a matter of professional knowledge informed by literature), with these in turn used to identify key capability requirements. These are specific statements that define the minimum effects that armed forces must generate. For example, as discussed in Chapter Six, for a state to achieve SC its forces must be able to, among other effects, enforce a constant 50 km radius air-defence perimeter.

The capability requirements for the military assets needed to provide these effects are then developed into minimum lists of necessary equipment, which can later be compared to national military inventories.<sup>184</sup> So, an air-defence SC perimeter can be generated by fighter aircraft or ships with defensive missiles. Those armed with 50+ km range weapons can achieve the effect individually, or four or more vessels are required with weapons of range no less than 30 km. These requirements can be considered against the entirety of a nations' air force and navy. A focus on effects also aids considering diverse assets, an important issue when assessing Operational Suitability as states have shown ingenuity in using varied assets to deliver effects.

### Phase C – Nation-Specific Capability Requirements

With general requirements defined, nation-specific ones are developed. These are principally understood (particularly for naval and air combat) through the issue of

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<sup>184</sup> While nations can potentially use civilian equipment to achieve certain limited military ends, such assets typically have comparatively poor performance and lack the weapons and electronic equipment to make them useful in battle. As such, civilian resources are not further considered when assessing balances of power.

range. That is, what distances must forces be able to travel in order to reach an AO from their closest relevant bases<sup>185</sup> (such as airfields or naval ports), operate in the area for a period, and then return to base. Of course, specific range needs and other capabilities will vary from nation to nation.

#### Phase D – Statement of Consolidated Metrics

Once a cohesive list of requirements have been generated for each state, these are codified as Operational Suitability and Resilience metrics, the primary outputs of Step One. The final requirements are referred to as metrics as they provide the criteria against which military forces are literally measured.

For example, to achieve SC a nation may need to be able to maintain a constant 50 km air defence perimeter at an island 500 km from its nearest base. To achieve this will need one or more aircraft and/or ships with 50 km range weapons, or four or more ships with at least 30 km range weapons,<sup>186</sup> all with the range to persistently operate at the AO. Further, the need for a constant presence will in turn require larger numbers of aircraft,<sup>187</sup> since as those in the AO run low on fuel, they must be replaced by others. These metrics can then be compared to the state's inventory.

#### Caveats, Further Comments and Summary

There is of course potential for a diversity of minimum capability requirements to be identified, depending on the analyst. This can reflect issues such as differing appreciations of operational needs, necessary effects, and means of achieving them informed by an understanding of how military forces are used in battle. Ultimately,

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<sup>185</sup> Based on the logical presumption that states will seek to locate forces as close as possible to an AO to allow the maximum number of forces to be applied.

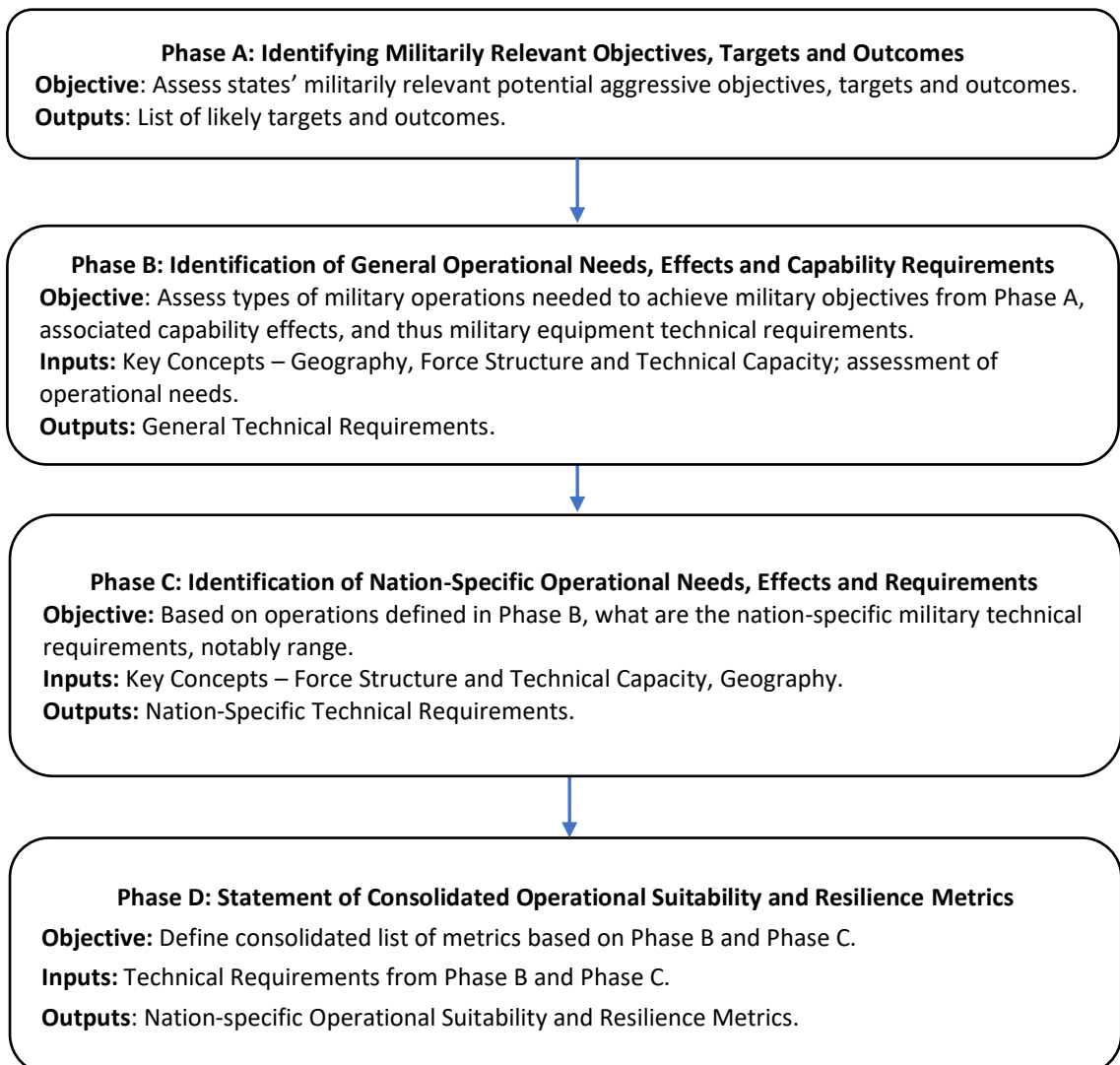
<sup>186</sup> Based on having weapons suitable to fend off the most commonly used Air-to-Surface Missiles that might be used against them; a matter discussed in Annex B.

<sup>187</sup> Developed via a calculation discussed in Annex B.

these are matters of professional judgement, and in this work are addressed by detailed commentary describing the conduct of the process.

More broadly, the capability requirements form the “counting rules” by which inventories can be assessed. That is, they define which items of inventory should literally be counted as applicable to scenarios, and then of these, how the effects that they generate can be considered (individually or cooperatively) to meet needs. The analyst may also determine further specific counting rules to address unique circumstances. Lastly, the logical phases, their interrelationships, and the inputs and outputs described above are summarised in [Figure 5.1](#) below. Also, as a practical note, the phases may not all necessarily be undertaken sequentially.

Figure 5.1: Step One Process Summary



## **Step Two: Identification of Operationally Applicable Forces**

Once metrics are defined, states' capabilities can be tested against them. This involves firstly identifying the forces that nations can apply to particular contingencies in a "stand-alone" sense before they are affected by enemy action.

### **Key Inputs**

Under an operations-focussed model, the power of an armed force is determined by what units it can apply to an AO, rather than its entire inventory. Such "stand-alone" forces can be defined by applying the concepts of Force Structure and Technical Capacity and Defence Responsibilities against metrics from Step One.

### **A Process for Defining Forces**

At its heart, this process applies the above key concepts to conduct a logical reduction of forces from those available in total to those that are likely to be present for particular contingencies. This is conducted in broadly three phases.

#### **Phase A – Identification of Overall Force**

An initial step is to examine which of a state's forces can meet the range requirements identified in Step One, either by their own capabilities or with support such as aerial refuelling. This information draws on the capabilities captured in the Force Structure criteria. Units that lack sufficient range are discounted. This process generates an initial number that shows all the units that a state can apply to an AO.

#### **Phase B – Identification of Operational Force**

However, generating the total force from Phase A in one area may denude others, opening the state to additional risk, which it would seek to avoid. Hence, a reduced figure is determined by cross-referencing the initial number against units' Defence

Responsibilities – that is, considering which are organically assigned to a particular AO and can hence be applied without denuding other areas. For example, China’s South Sea Fleet (SSF) has specific responsibility for the SCS, rather than its East and North Sea Fleets. Hence SSF forces, with appropriate range, are logically those that will be applicable to various SCS scenarios.

Taking such an approach aligns with the assumption that states will plan for reasonable adverse scenarios in surprise attack situations. So, potential aggressors must consider that other nations may attack elsewhere while the aggressor conducts its assault; to mitigate this risk, such nations are unlikely to denude other areas. And a defender, even if inclined to move in reinforcements from distant locations, is unlikely to have the time to do so (aside from air assets) in decisive victory scenarios, which by definition the aggressor conducts as swift attack.

Of course, in some situations states’ forces may be small enough, or their other threats sufficiently minor, that it is appropriate to consider their entire militaries as available to apply to a particular contingency. This is typically the case with smaller countries.

### Phase C – Identifying Offensive and Defensive Force Totals

Once a set of operational forces have been identified, these can be further reduced to reflect maintenance and training limitations. This generates offensive and defensive totals that better represent forces available for operations.

This consideration reflects that modern militaries prepare for operations using a “force generation cycle”. This involves, broadly, units engaging in roughly equal blocks of time being ready for or deployed on operations, recuperating from such activities, then training to be ready for operations again.<sup>188</sup> This split of time into

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<sup>188</sup> For illustrative discussions with reference to the Australian and American Armies see Australian Army (2017) and Campbell (2009), for the Chinese Navy see O’Rourke (2016, p. 26) and Office of Naval Intelligence (2015, p. 28).

thirds is particularly applicable to naval forces, which have substantial maintenance requirements driving their recuperation periods (Kirchberger, 2015, p. 175).

This leads to an expectation that different proportions of forces will be available for aggressor and defender nations in a conflict. An aggressor can choose the time and place of conflict, and should seek to maximise its preponderance. Hence, a reasonable assumption is that two-thirds of its military could be “surged” to provide offensive forces, as the remainder would be unavailable due to undergoing maintenance. In turn for a defender, the enduring combat-ready force available for a surprise conflict can be presumed as one-third of the assets available, with the remainder in maintenance or training.

Applying these considerations to Phase B figures generates, for each state, offensive totals (operational forces multiplied by two-thirds) and defensive totals (operational forces multiplied by one-third). These figures are those used when assessing “stand-alone” military forces and when comparing how nations are expected to fare in combat.

#### Further Comments and Summary

The above approach means that each nations’ offensive forces will be larger than its defensive ones. Incidentally, this allows for stronger testing of OR: as offensive power is favoured, opportune moments for aggression will occur more easily. This makes for a stronger case against OR if states still choose not to engage in conflict.

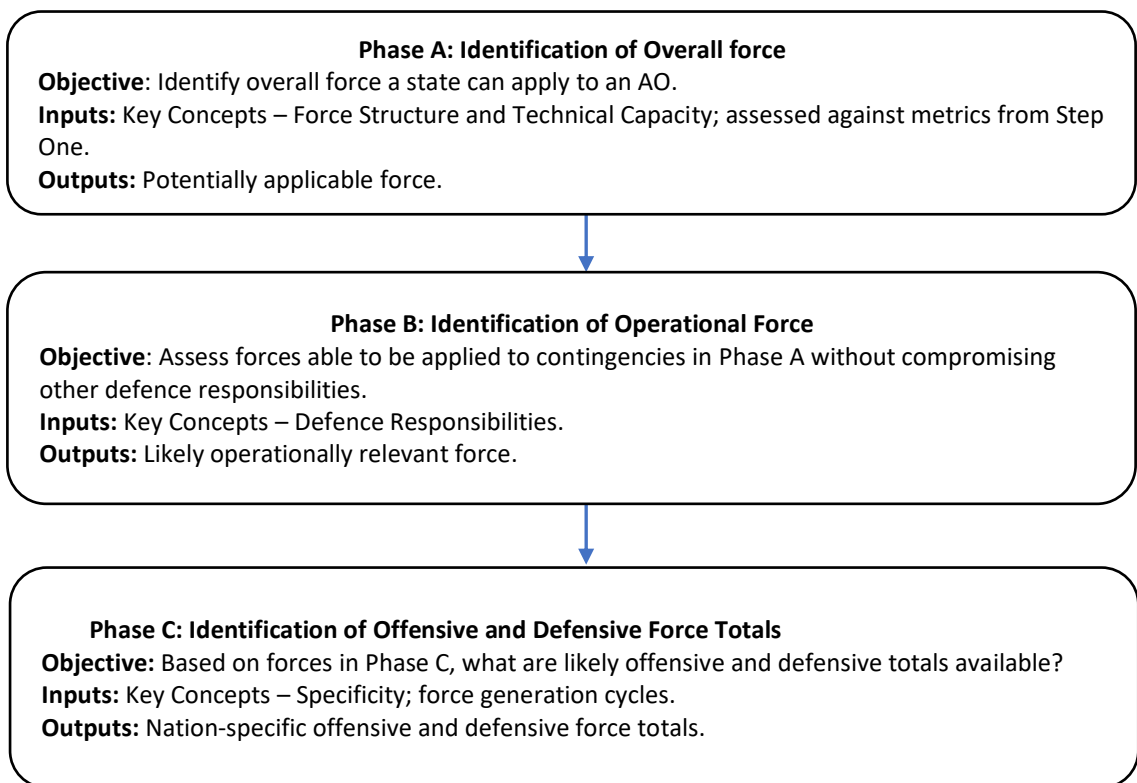
Also, and importantly, the above totals inform all succeeding steps of the power measurement process. Thus, assessments of Operational Suitability, Resilience, Asymmetry, Modernity and so on are informed by whether a nation has offensive or defensive objectives.

As part of such assessments, a state may be judged operationally suitable for offence, but unsuitable for defence due to the decreased numbers (although this is

somewhat compensated for by the fact that defensive operations generally have less stringent requirements). Likewise, it may be rated superior in Preponderance or Asymmetry when planning an attack on a nation but be inferior against that same state when on the defensive at another location.

The broad phases and interrelationships discussed above are shown below in [Figure 5.2](#). As a practical note, these phases may not be conducted sequentially. Also, for any particular situation, the analyst may need to determine individual counting rules to address unique circumstances.

Figure 5.2: Step Two Process Summary



### Step Three: Operational Suitability and Resilience Assessment

Once metrics are identified in Step One and the responsible forces defined in Step Two, an operational assessment can be conducted, with this done by measuring

Operational Suitability and Resilience. To do so involves applying the metrics and counting rules from Step One to the force from Step Two to identify whether the force meets the minimum requirements, and if so, how resiliently. This provides ratings for the first two assessment factors.

### **Key Inputs**

The key concept is Force Structure and Technical Capacity, applying equally to both factors being measured. This reflects that states' Force Structures define the assets that they can apply to meeting the requirements defined in Step One.

### **A Process for Measuring Operational Suitability and Resilience**

As noted above, the process used involves applying the metrics and counting rules from Step One to forces from Step Two. This is conducted in broadly two phases.

#### Phase A – Measuring Operational Suitability

In this phase, situation-specific forces are counted to examine whether they can meet the minimum operational equipment requirements. In contrast to the comparative variables discussed later in the model, this factor's outcome is a simple "yes or no": can the needed types of operations be conducted? This is shown for offensive forces in [Table 5.6](#) below.

Practically, offensive operations are considered first: does a force allow decisive victory, providing an "opportune moment" for aggression? Where a state has an offensive need but its forces are unsuitable to these ends, it is judged as weak in its overall power. In such cases, no further assessment is conducted at that time.<sup>189</sup> This reflects that a rational state should not attack at inopportune times, and indeed should withdraw from battle (if an aggressor or defender) if its forces are

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<sup>189</sup> As discussed in Chapter Six, assessments are practically conducted on an annual basis.



driven to a point of unsuitability – as it risks their prompt destruction for no gain. If a nation attacks (or continues to battle) when unsuitable, it behaves irrationally and falls outside the bounds of Realist assessment. And if it does not act aggressively, then its behaviour does not support distinguishing between DR and OR states.

Should a potential aggressor be judged operationally suitable, the same assessment is then conducted for the defender. This is because identifying whether the defender is weak or not influences how its strategy and behaviours towards the potential aggressor are later assessed. However, if a defender is judged as weak, no further assessment is conducted for its other factors at that time.

### Phase B – Measuring Resilience

For nations with operationally suitable forces, these are then measured for their basic Resilience further to the metrics from Step One. This requires comparing a nation's minimum Operational Suitability requirements with the forces available to it, identifying which critical effects depend on which assets, and of these which are the most scarce and thus form the basis for Resilience.

For example, for AA conducted under conditions of SC, the critical assets may be amphibious craft, or platforms generating air defence, or yet others providing protection from submarines. All critical effects must be considered, and those dependent on the minimum number of platforms define Resilience.

Practically, in this dissertation Resilience is assessed as critical if an operation is dependent on a single asset (red), weak if dependent on two (yellow), or reasonably sufficient if having three or more (green). This reflects that, for example, a nation dependent on one or two assets may be stymied by simple accidents, bad weather or maintenance issues well before any adversary's military action. Resilience is captured both numerically and in colour-coded assessments, as shown in [Table 5.6](#) for an offensive assessment.

**Table 5.6: Illustrative Offensive Operational Suitability and Resilience Assessments**

Assessment Factor	Measurement	Objective Suitability/ Likelihood of Victory	Assessment Outcome
<b>Offensive Operational Suitability:</b> Can forces rapidly and directly exert power to achieve state aims?	Review of Force Structure against operational needs	YES: military power is higher	
		NO: military power is lower	

Assessment Factor	Measurement	Objective Resilience/ Likelihood of Victory	Assessment Outcome
<b>Offensive Operational Resilience:</b> Is the operation dependent on any one or two points of failure?	Review of Applicable Force Structure at Operational Area	NO: chance of success is higher	
		YES – TWO ASSETS: chance is medium	
		YES – ONE ASSET: chance of success is lower	

Further Comments and Summary

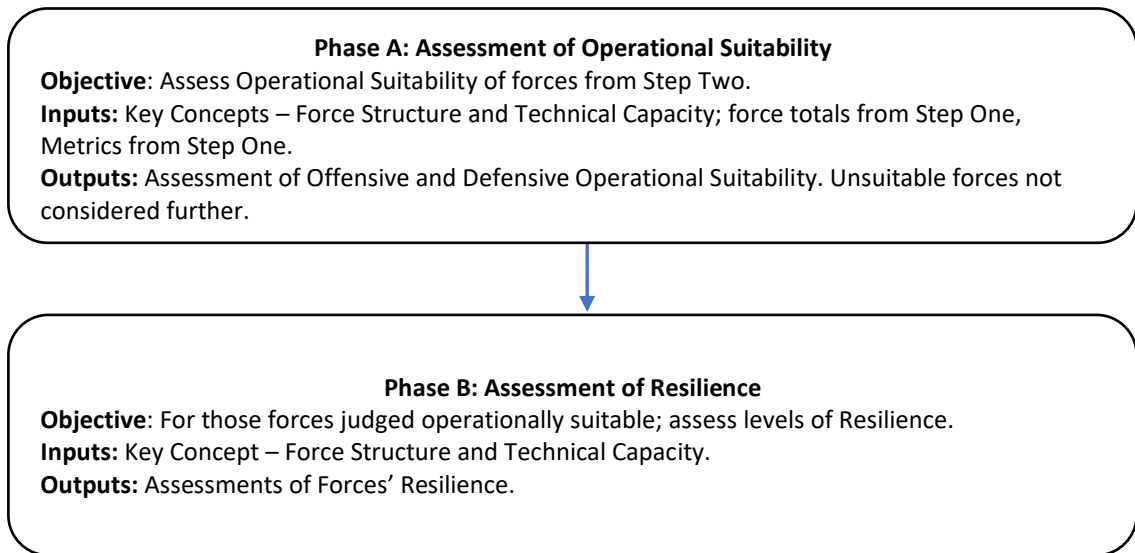
As with Operational Suitability, Resilience is a “stand alone” or “absolute” factor because its value is not relative to the capabilities of an adversary. However, from a qualitative perspective, nations with particularly high Resilience can be considered stronger, since they can withstand more losses than less resilient adversaries.<sup>190</sup>

Further, this variable is strongly affected by offensive and defensive force levels if the numbers of key assets are low. The broad phases and their interrelationships discussed above are shown below in Figure 5.3. Also, for any particular situation, the analyst may need to determine unique counting rules.

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<sup>190</sup> For example, if one nation has a Resilience of 10 and its competitor 3, both would be rated as reasonably sufficient, but the former nation would be stronger.

Figure 5.3: Step Three Process Summary



#### **Step Four: Comparative Forces Assessment**

Once operationally suitable forces are identified, it becomes necessary to assess how they will likely fare in battle. This is done by comparing nations' relative advantages in Asymmetry, Modernity, Personnel, Preponderance, and Geography. Of course, the importance of all these factors reflects their logical relationship to victory in battle, as discussed previously.

#### **Key Inputs**

The key applicable concepts are Modernity, Personnel, Preponderance, and Geography, in addition to Force Structure and Technical Capability and Weapon and Sensor Types and Ranges. All these, of course, relate to the actual assessment factors in terms of both defining how these are measured and representing the capabilities forces possess.

#### **A Process for Measuring Comparative Assessment Factors**

A state's relative advantage in each factor is assessed separately by measurement and comparison. This results in a five-phase process. Of note, Table 5.8, shown after

Step Five, shows colour-coding results used for all factors. Also, as each phase is considered separately, no diagram is provided illustrating their interrelationships.

### Phase A – Assesses Asymmetry

This factor is measured by comparing whether competitors' effective weapon ranges allow them to detect and attack an adversary without placing themselves at risk. Effective weapon ranges are defined as the lesser of any asset's own weapon or sensor range, based on the logic that assets cannot fire upon what they cannot detect.<sup>191</sup> Any pronounced range asymmetries in a nation's favour (including whether the state is able to attack targets that cannot retaliate at all) are assessed as providing that state a relative advantage. For the purposes of this model, a difference of over 20% was selected as an intuitively plausible one, noting the lack of any agreed asymmetry measures in the available literature. Thus, 20% range superiority provides advantage (green), less than 20% provides no advantage (yellow), while 20% inferiority provides disadvantage (red).

While the above approach is intuitively appealing, in reality a great range of practical adjudications or "counting rules" must be made, frequently to address situation- and force-specific idiosyncratic issues. However, certain broad considerations are usefully discussed here.

In particular, in naval combat of the type relevant to the SCS, different situations of asymmetric advantage can exist across all physical domains relevant to SC, that is, the surface, subsurface and air domains. This results in 27 potential variations of

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<sup>191</sup> Platforms can also notionally use other's sensor data, such as in the Cooperative Engagement Capability system (United States Navy, 2021). Such "third-party targeting" is not utilised in this dissertation due to it requiring further assumptions to be made in terms of the presence and effectiveness of such supporting platforms and the data they provide. In contrast, an asset can with much more confidence rely on its own weapons and sensors being present and effective.

advantage considering a potentially different rating in each domain,<sup>192</sup> as shown in the Table 5.7. Of course, for any state, the more consistent its overall advantage the stronger it is, with superiority in all three notably important for SC.<sup>193</sup>

As a simplifying measure to address these diverse outcomes, the following counting rules were determined. Two or more domains of advantage (green) with one of neither advantage (orange) are classed as providing overall asymmetric superiority to a party. Two or more domains of disadvantage (red) with one of neither advantage (orange) is classed as providing overall asymmetric inferiority to a party. All other combinations provide neither distinct advantage nor disadvantage. This is consonant with the very strong superiority needed to provide overall military advantage to a force in the real world.

Table 5.7: Space of Possible Domain Advantage Variations

	Asymmetric Advantage	Neither Benefit	Asymmetric Disadvantage
Air			
Surface			
Submarine			

Further general issues included determining what weapons assets would be armed with (noting that many can carry diverse numbers and types of weapons) and how to consider various weapon ranges across multiple platforms in battle at one location. These were addressed by rules presuming individual assets to be equipped with the longest ranged weapons suitable for them (aligning with the assumption that nations would seek to maximise their advantage in the military power factors,

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<sup>192</sup> This reflects that a state will have one of three different ratings (advantage, no benefit, or disadvantage) in the air, surface, and submarine domains. These three sets of three options (3x3x3) provide 27 possible outcomes.

<sup>193</sup> For example, if an offensive fleet had strong air and anti-submarine defence, but was still able to be targeted effectively by ship-launched missiles, this single avenue of attack would be sufficient to potentially defeat an attempted assault (Heginbotham et al., 2015, p. 331).

such as Asymmetry). In turn, the longest ranged weapons available to each competitor (considered across all assets) were compared to determine practical asymmetry, reflecting that a state must consider that it may be attacked by its enemy's longest ranged weapons first. Finally, while of course nations may have classified information on weapon and sensor ranges, by necessity only publicly available information could be used, noting that many weaker states too may only have access to such information.<sup>194</sup>

### Phase B – Assess Modernity

More modern (i.e., newer) equipment is typically more effective than older technology. Hence, the likelihood of mounting a successful operation should increase where one force has *more modern equipment*, with this also logically affected by whether such equipment exists *in greater numbers* than available to an adversary.

Unfortunately, assessing modernity on these terms is complex. Key issues include the lack of widely agreed definitions of what is “modern” equipment and national inventories being comprised of various quantities of different types of assets of different ages. This leads to practical issues in deciding whether assets are actually modern, and then logical issues for how they should be compared. So, two air forces’ fleets may be comprised of aircraft of various differing ages. As a result, each fleet has assets that are concurrently more, less, and equally modern to the those of its adversary. How should these differences be considered in terms of determining which force has the advantage? Should a fleet with a handful of very young aircraft be judged more modern than one with many slightly older aircraft? And should modernity overall be judged by ratios of modern aircraft to overall force, or total numbers? And these questions arise again for naval and land forces.

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<sup>194</sup> Unclassified information has also been argued to not differ too dramatically from actual weapon performance, reducing the impact of not being able to access classified information (Mearsheimer et al. 1989, p. 131).

As a simplifying measure, a straightforward summing approach is used. Assets are identified as modern (based on rules described below) and then all these in a domain (such as all modern fighters and bombers, or all types of modern ships) are summed to develop numerical totals for air, sea, and submarine modernity. If a nation has a greater quantity of modern assets in a domain (or has the only assets in it) then it is judged superior; if it has equal numbers, it has parity; otherwise it is inferior. This leads to 27 possible outcomes across three domains, which are judged as for Asymmetry to develop a single summary assessment.

Counting rules for asset modernity were developed for air and naval forces, as these are most applicable to the SCS. For fighters and fighter-bombers, modernity was classified using an existing system rating generations from first (oldest) to fifth, based on age and certain broad capabilities such as advanced electronics (Air Power Development Centre, 2012). Due to the focus on age *and* capability, aircraft constructed in one nation that are not as advanced as those in others can still be grouped into appropriate separate generations.<sup>195</sup> For counting purposes, third generation and later aircraft were considered modern. Similar concepts were applied to wider assets, such as bombers or maritime patrol aircraft.

In turn, there is no definition of modernity for naval ships or submarines. Instead, a measure drawn from other professional publications is used, with “modern” reflecting a qualitative judgement that a vessel is able to conduct offensive and defensive operations against what would be considered a capable equivalent foe at that time. This is based on a submarine’s or ship’s hull-age, the age of its sensors and weapons; and also, for ships, multi-mission capability (or strong single-mission capability) and ability to embark a helicopter (O’Rourke, 2016, p. 81; Heginbotham et al., 2015, pp. 30–31). On a side note, the definition of a modern vessel will

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<sup>195</sup> For example, while Chinese J-8D fighters manufactured in the early 2000s were considered third generation aircraft due to their limited technical capabilities, Russian Su-30 manufactured at the same time were fourth generation (Heginbotham et al., 2015, p. 76).

change over time, and any nation's fleet must be compared year by year against those of its competitors, which may be upgrading at faster or slower rates.

#### Phase C – Assess Personnel Training/Experience

The key common and broadly measurable factors affecting personnel quality are whether they receive appropriate and realistic training, and whether they have conducted deployments to actually gain experience. So, this factor examines and qualitatively sums the level of training or deployment experience achieved by the relevant arms (such as the navy or air force) of a state's armed forces to develop an overall summary rating, based on open-source commentary on training performance and observation of deployments (Erickson, 2010, pp. 295–377; Cliff, 2015, pp. 121–131). Observed qualities are treated as generalisable – that is, personnel deployed to an operational location are presumed to have the same level of overall quality as adjudicated for the armed force. As a qualitative measure, this dissertation assigns ratings of “poor”, “acceptable”, and “good”. If two forces have the same rating then neither side has a benefit, while of course if one is better, then it is judged superior.

#### Phase D – Assess Preponderance

Preponderance is assessed by comparing which nation has a greater weapon-to-target ratio. This is measured by numerically comparing the number of weapons that a nation has at each operational location against the number of relevant targets presented by its adversary, and vice versa. While a force can have varying degrees of dominance, a review of the literature found no specific measures to judge when a force can be judged superior, especially for naval settings.

To provide a consistent measure, a figure of 100% (i.e., double) an adversary's weapon-to-target ratio was selected as an intuitively plausible cut-off for a force to



be judged preponderant. Preponderant superiority, in naval operations, can exist in one, two or all domains, offering increasing relative advantage. Again, this offers 27 different ratings, which are summed into a single assessment based on the same rules as for Asymmetry.

#### Phase E – Assess Geographic Advantage in Terrain Effects

This factor is assessed through consideration of whether an area's geography is favourable for the probable offensive or defensive operations, informed by works such as *Military Geography* (Peltier & Pearcy, 1966). An appropriate rating of advantaged, neither advantaged, or disadvantaged is assigned to the aggressor.

#### **Step Five: Integrated Military Power Assessment**

Ultimately, the stand-alone and comparative steps provide seven factors for assessing the likelihood of operational success: Operational Suitability, Resilience, Asymmetry, Modernity, Personnel, Preponderance, and Geography. Once these have been analysed individually, an integrated assessment (i.e., a NeA) is made combining all the factors' impacts in alignment with the description given previously in Section I. This integrated result is the actual measure of a state's military power for that scenario (with its dyad counterpart having a mirrored level of power) and forms the final step in the 5-7-7 model.

#### **Conclusion**

With the model thus described, this chapter has met the overarching objective of developing an improved process to assess operational military power, with the aim of supporting the empirical investigation of a range of SR theories. While the application of the 5-7-7 approach to the SCS is conducted in Chapter Six and its Annex B, before discussing this it is prudent to examine whether the objectives laid out in Chapter Four's Table 4.1 have been met.

Table 5.8: Comparative Force Assessment Factors

Assessment Factor	Measurement	Relative Advantage/ Likelihood of victory	Assessment Outcome
<b>Asymmetry:</b> Do own forces have a clear asymmetric advantage in all domains?	Review of Force Structure and Technical Capacity; Weapons and Sensor Ranges.	Advantage: chance of success is higher	
		Neither Advantaged: chance is uncertain	
		Disadvantage: chance of success is lower	
<b>Modernity:</b> Do own forces have more modern assets in all domains?	Review of Force Structure age in comparison to adversary.	Advantage: all assets are more modern, chance of success is higher	
		Neither Advantaged: some assets are more modern, chance is uncertain	
		Disadvantage: all adversary assets are more modern, chance of success is lower.	
<b>Personnel:</b> Are own forces better trained and have more experience in the types of operations they are now conducting than the adversary?	Review of Personnel Training and Experience.	Advantage: chance of success is higher	
		Neither Advantaged: chance is uncertain	
		Disadvantage: chance of success is lower	
<b>Offensive Preponderance:</b> Are own forces at 200% or greater weapon-to-target ratio across all domains?	Review of numerical Preponderance of Force Structures.	Advantage: preponderance exists across all domains, chance of success is higher.	
		Neither Advantaged: preponderance exists across some domains, chance is uncertain.	
		Disadvantage: no preponderance, chance of success is lower.	
<b>Geography:</b> Does the geography of the area favour the operations sought to be conducted?	Review of Geography/Area of Operations.	Advantage: chance of success is higher	
		Neither Advantaged: chance is uncertain	
		Disadvantage: chance of success is lower	

The first set of goals was to develop a structured model that transparently proposed the most important factors for measuring military power, defined how these can be assessed and integrated to develop national power ratings, and showed how these can be compared to develop dyadic balances of power. These objectives have been largely met. The model is both structured and transparent in its methods and category selections, and while assessments still fall to the analyst's judgement, the basis of these should be clear.

Secondly, to support testing Realism, the model was to use simplified but representative considerations for nations' decision-making on the use of military force, be suited to assess militarily relevant aims, to generate results no worse than can currently be achieved, and be practical. These goals too have largely been met.

That is, the model aligns with Realist understandings of the rational application of force, harnesses NeA methods aligned with nations' measurement of military power, and uses a 5-7-7 power-process and key inputs and outputs directly related to the application of armed force. While how closely the selected factors correlate with success can be difficult to prove (noting the complexity of battle outcomes), they are logically related, present in the bulk of scholarly consideration, and deliberately avoid unrepresentative abstractions such as indirect measurement methods. Further, the model allows analysis of militarily relevant objectives (indeed it supports focussing on them) and generates assessments of likely defeat, uncertainty, or victory in battle – the minimum required to assess Realism. Finally, the model is complex but still practical. Counting rules have been developed to guide the use of the model, and while substantial data-gathering and organisation are required, once datasets are developed, multiple analyses can be conducted in a straightforward manner, comparing many different nations and locations. This is demonstrated in the next chapter.

Beyond these issues, the proposed approach is an important advance for the structured consideration of quantitative, technical and qualitative impacts on relative capabilities, military operations and state behaviour. Such an approach is a

rarity in the field and helps address a recognised “technical-political gap” in understanding the real-world consequences of technological innovations (Kirchberger, 2015, p. 6). Indeed, it represents the most detailed publicly available model of its type, to the author’s knowledge, especially with its focus on defining specific operational needs, capability effects and capability requirements.

With the development of the 5-7-7 model, the second key requirement for assessing the theories under consideration has been addressed. Now, the practical application of the strategy framework and power model can commence to address the third and final requirement: the assessment of states’ behaviour in a region where power has been shifting and territorial disputes have been occurring. For this work, of course, this region is the SCS.

## **Chapter Six – Territorial Disputes in the South China Sea:**

### **Military Balances and Behavioural Predictions**

The previous chapters have addressed the first two logical requirements for conducting an observational test of the five theories under consideration and so answering the research questions. These requirements were the development of theory-distinctive and power-sensitive strategy predictions, and a means to measure military power. This chapter now begins to fulfil the third and final requirement: the generation of a dataset that applies these methods to develop specific forecasts for state behaviour for a set of real-world case studies. Here, the cases used are actions by six states in SCS territorial disputes during 1995–2015. These forecasts are compared to the historical actions of these states in Chapter Seven to determine which theories have the most explanatory power.

Chapter Six develops the necessary forecasts by firstly using the 5-7-7 model to generate annual bilateral balances of power between the six contending states at 15 disputed locations over the period. This represents the most detailed publicly available dataset of its type, to the author's knowledge. Then, these power balances are harnessed to generate state behaviour predictions based on the strategy framework from Chapter Three.

This chapter proceeds in three sections. The first provides an overview of the SCS in terms of its geography, salience, territorial claims, and the broad changes in actors' military power that have occurred. This is used to explain why the area and its history since 1995 provide such a fertile ground for testing the various theories. The second section summarises and illustrates the process of applying the 5-7-7 model to the SCS, drawing on the separate Military Power Assessment (MPA) where this is done in detail. The third section reports on the actual contents and outcomes of the MPA. It discusses individual states' armed forces, their development during the period 1995–2015, how this led to changing balances of military power, and associated different predictions for state behaviour.

## **Section I: The South China Sea and Territorial Disputes** **from 1995 to 2015**

### **Geography**

As an initial step, a review of the SCS in terms of its geography, importance, ongoing territorial disputes, and developments with key actors, serves to demonstrate why the region is an excellent test case for this dissertation's approach. Also, describing the area is useful in general from a security studies perspective, as it is one of the most important and volatile areas of the world today.

The SCS comprises an area of some 3.5 million square kilometres (sq km) bounded by the People's Republic of China (China) and the Republic of China (Taiwan) to the north; Vietnam to the west; Malaysia, Indonesia and Brunei to the south; and the Philippines to the east (see [Figure 6.0](#) below). The region contains hundreds of mostly uninhabited geographical features, ranging from small islands to rocks, atolls, islets, cays, shoals, sandbars and reefs. Many of these are permanently underwater, with some visible only at low tide and others being permanently above water.

These various features,<sup>196</sup> shown in [Figure 6.1](#) below, are principally situated in the central and northern areas of the SCS. They are comprised of five groups of features<sup>197</sup> in total: three island chains (the Spratly, Paracel, and Pratas Islands), the Macclesfield Bank, and Scarborough Shoal (Xu, 2014; Pedrozo, 2014). To briefly describe the groups in order of decreasing area, the first are the Spratly Islands. These are located in the south-east of the SCS and spread across some 180,000 sq km of ocean, with individual features variously located closest to Malaysia, Brunei and the Philippines. Overall, this group is farthest from Vietnam, China and Taiwan.

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<sup>196</sup> All placenames used in this dissertation reflect common English usage; features typically have different names in non-English languages.

<sup>197</sup> While Macclesfield Bank and Scarborough Shoal are referred to in the singular, they are each comprised of a range of individual underwater reefs and (for the latter) also outcroppings of rocks.

Figure 6.0: The South China Sea



Source: United States Energy Information Administration (2013). Graphic used with permission.

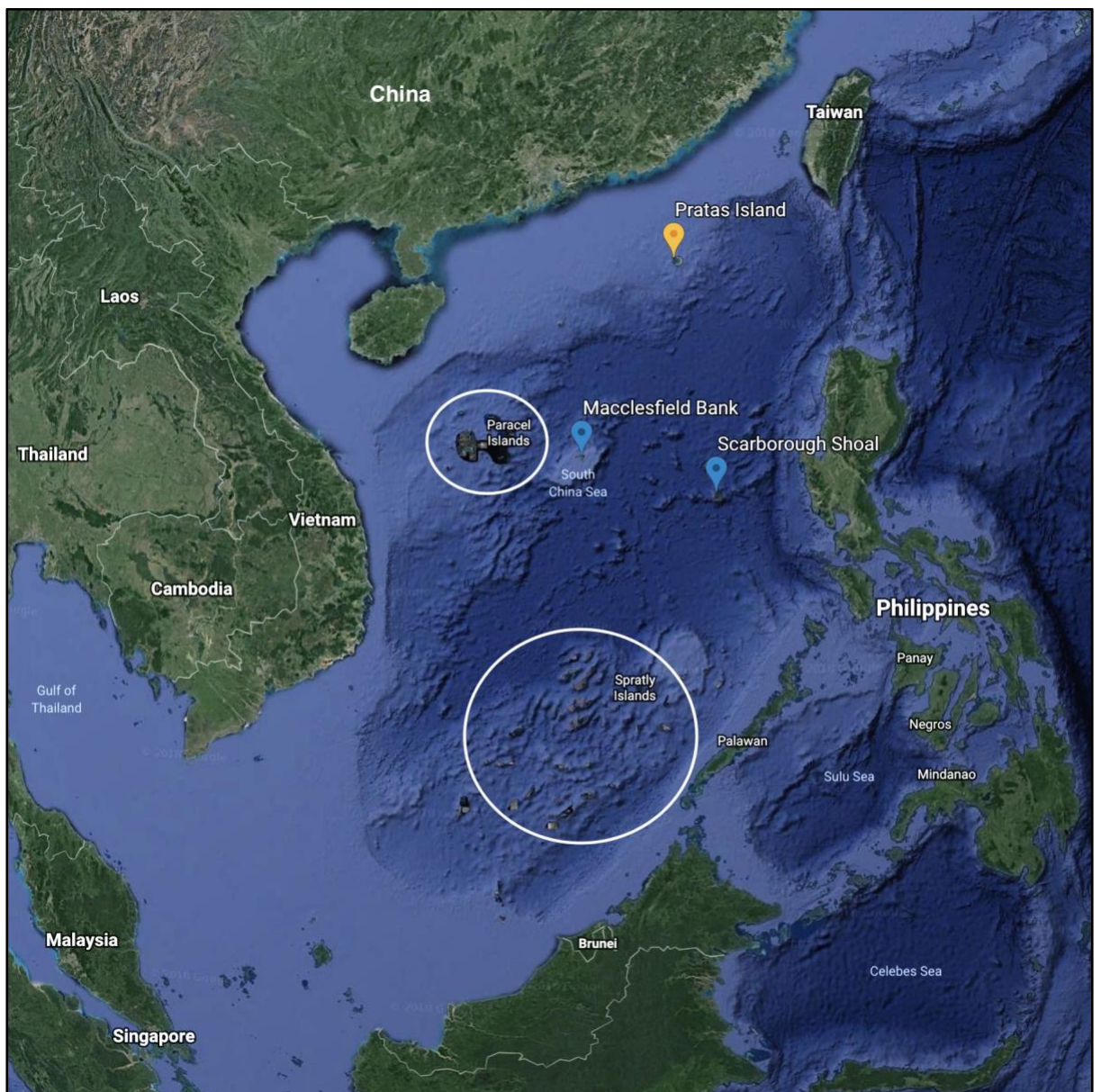
Secondly, there are the Paracel Islands, located in the north-west of the SCS and spread across some 16,000 sq km of ocean. These islands are closest to China and Vietnam, and furthest from Malaysia, Brunei and the Philippines.

Thirdly, located some 250 km east of the Paracels, is the completely submerged Macclesfield Bank, with an area of some 6,500 sq km. The Bank is almost equidistant between the closest points of China, Vietnam and the Philippines.

Fourthly, Scarborough Shoal is located east of the SCS and has an area of some 150 sq km. It is located closest to the Philippines.

Finally, there are the Pratas Islands in the north, closest to Taiwan and China. Only the main 2.8 km long Pratas Island is above sea level.

Figure 6.1: The South China Sea – Principal Clusters of Geographic Features



*Note: Author's map drawn from Google Earth.*



## **Economic and Strategic Benefits of Control**

The SCS offers vast economic benefits to nations that can control (i.e., use without challenge) some or all of the territory. The region potentially has the world's second largest oil and gas reserves (Kaplan, 2014, Chapter 1), with estimates of up to 7 billion barrels of oil and 900 trillion cubic feet of natural gas (Xu, 2014). This offers great wealth and energy security for nations able to exploit these resources. Further, the SCS not only provides some 12% of the globe's fishing catch (Sumaila & Cheung, 2015, p. 3) but is important for regional food security and employment, with the area's countries being particularly reliant on fish for nutrients and engaging nearly 4 million people in associated industries (Malasig, 2016). The importance of control over fishing grounds has been heightened by over-exploitation that has seen fish stocks decline by up to 95% since the 1950s (Malasig, 2016).

Militarily, if a nation can achieve SC over, or at least have the potential to exert force in, the SCS, this offers important strategic benefits. States whose militaries can affect the region have considerable global influence by threatening the trade routes (or Sea Lines of Communication [SLOC]) that transit the area, as these are the world's second busiest (Blazevic, 2012, p. 85). Indeed in 2016, these routes transported nearly a third of global trade, then valued at US\$3.37 trillion (Center for Strategic and International Studies [CSIS], 2018b) and saw nearly half of the world's seaborne oil transits (Kang, 2009, p. 15). Control also benefits regional SCS states' security, as they are highly dependent on local SLOCs, and the ability to exert force also grants them influence over likewise reliant neighbours. For example, some 80% of China's, and nearly 60% of Japan's, Taiwan's and the Republic of Korea's oil imports come through the SCS (Kaplan, 2014). Finally, the farther away that states can threaten potential adversaries' forces, the more they enhance their own security by keeping enemies at a distance.

To achieve control or influence over the SCS, in terms of both its land and maritime territory, states have two main logical avenues available. Firstly, there is de jure sovereignty, where other nations defer to the country, within the limits prescribed

under international law, such as UNCLOS, due to its recognised dominion over an area. Secondly, there is de facto control or influence by the unilateral exertion of military power. In practice, of course, the latter can be used to support the former.

For de jure matters, under UNCLOS, sovereignty over geographic features (i.e., land) generates maritime territory. So, states may claim up to a 370 km EEZ from their mainland or island shores, and a 22 km TS from the shores of their rocks. Low-tide elevations do not generate any maritime zone and are not subject to claim, but if within a states' EEZ they fall under that country's sovereignty by default (Rosen, 2014; Houlden & Hong, 2018).<sup>198</sup>

Due to the great diversity of geographic features (such as islands) in the SCS, uncontested sovereignty over these forms the primary mechanism by which de jure control over large swaths of ocean can be achieved. And where ownership is disputed, UNCLOS provides various voluntary legal mechanisms for resolving such issues,<sup>199</sup> such as the International Tribunal on the Law of the Sea. Although, as a practical matter, the United Nation's Permanent Court of Arbitration (PCA) has in fact administered all but one of the disputes under UNCLOS (PCA, 2018).

However, where sovereignty requires enforcement, or is disputed and states do not desire to resolve the issue through arbitration, or nations seek rights beyond those afforded by UNCLOS, countries may attempt to impose control over territory. This is typically through paramilitary (such as coastguard) and military forces.

### **Disputed Territories and Interested States**

Due to the vast potential benefits of control, and the various avenues to try to exercise it, no less than six nations dispute each other's dominion over all or some

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<sup>198</sup> A natural landmass only exposed at low tide.

<sup>199</sup> The UNCLOS also provides similar guidance and means of dispute resolution for purely maritime territory issues – that is, when neither state disputes the other's control over an area of land. Examples include the location of two nations' oceanic borders when their mainland EEZ overlap.

of the SCS: Brunei, China, Malaysia, the Philippines, Taiwan and Vietnam. These states' competing claims (for both oceanic territory and geographic features) have assorted legal bases,<sup>200</sup> varying degrees of alignment with UNCLOS, and include features from a few hundred to over one thousand kilometres distant from nations' shores. The claims also overlap each other in principle and in fact, as states occupy various territories that lie within each other's asserted borders (Buszynski, 2012).

The borders of the various claims (recalling that nations also assert title to all features that lie within these limits) and the occupiers of selected current features are summarised below. They are also shown in [Figure 6.2](#) with the exception of Macclesfield Bank (controlled by China) and Pratas Island (controlled by Taiwan), which can be viewed in [Figure 6.1](#) above.

Of note, the below discussion (and more detailed expositions later) focusses on nations' claimed (and already occupied) features in the SCS rather than their asserted oceanic borders. This reflects geographic features' greater importance for reasons including that their control allows states to exercise more easily (via stationing forces there) de facto control over an area; and that if such occupations are recognised, they provide the basis for de jure claims over large ocean zones. Also, such lands (as opposed to open water) are the primary targets available for physical conquest by aggressive states. Due to all these matters, features have been the key flashpoints for crises and military stand-offs between competing nations – and become the key objects of inquiry for this dissertation.

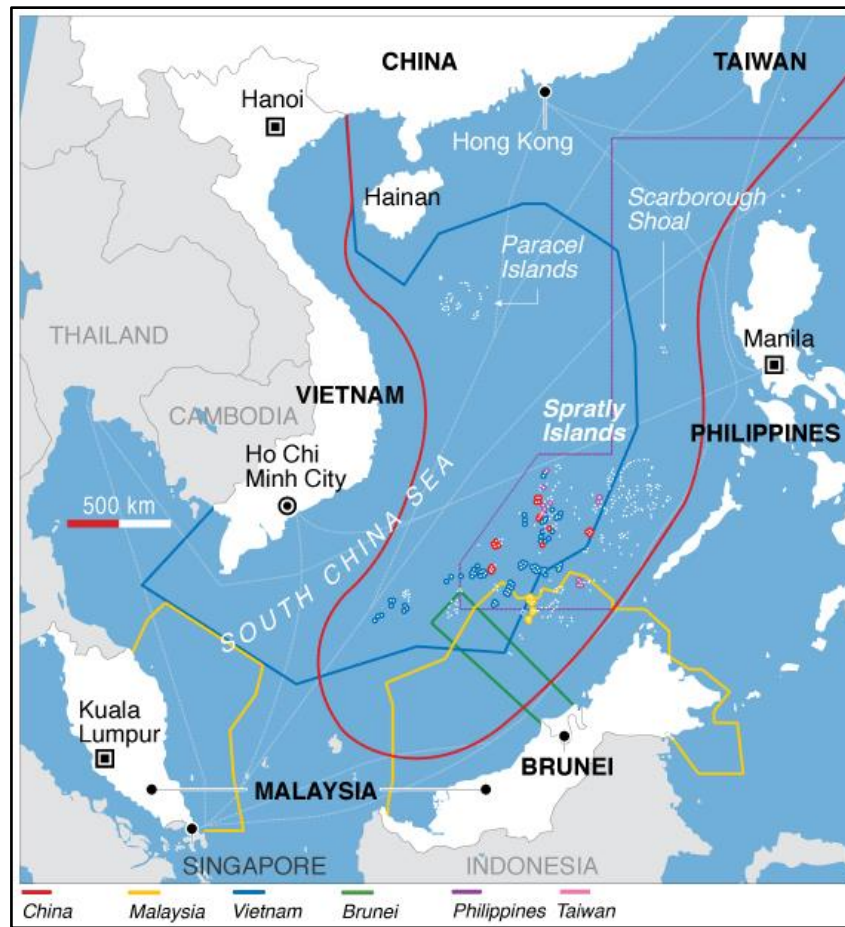
Also, from a practical perspective, the various states' occupied features are all here treated as rocks (with the exception of the completely underwater Macclesfield Bank) regardless of their title (such as the Pratas Islands). This reflects that the nature of features is heavily contested in the SCS, with their specific type unclear pending legal rulings.<sup>201</sup> Based on this, the UNCLOS definition of rocks was judged the most defensibly applicable to the various features.

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<sup>200</sup> For detailed legal appreciations see Roach (2014), Rosen (2014) and Pedrozo (2014).

<sup>201</sup> And indeed in 2016 the PCA found that no features in the Spratlys were islands (PCA, 2016).

Figure 6.2: Indicative Claims and Selected Occupied Features in the South China Sea



Source: Voice of America (2012). Image is in the public domain.

### An Overview of States' Claims

The most extensive claims are China's and Taiwan's effectively identical assertions over an enormous area of the SCS and all the geographic features within this zone, including the various island groups, Scarborough Shoal and Macclesfield Bank.<sup>202</sup> The claimed region, which is far beyond what would be afforded under UNCLOS from the nations' mainlands and the various features' marine territories, is represented on [Figure 6.2](#) by a solid red line. This is indicative of the so-called nine dash line: the literal nine dashes or marks put forward by China and Taiwan on maps to indicate the limits of their claims (Pedrozo, 2014; Beech, 2016).

<sup>202</sup> Reflecting that both claim to be the legitimate inheritors of the same maritime domains claimed by the previous imperial Chinese regime.

In fact, Beijing and Taipei's actual control of features is much narrower, limited to permanent Taiwanese outposts holding the Pratas Islands and similar Chinese facilities on the Paracels (seized from Vietnam in a short, bloody conflict in 1974) and several of the Spratly Islands. China also has effective control (by a constant coastguard and naval presence) of the Macclesfield Bank and Scarborough Shoal (seized from the Philippines in 2012).

The second most extensive claims are by Vietnam, the specific maritime extent of which remains undefined but includes the entirety of the Paracel and Spratly Islands but does not extend to Macclesfield Bank or Scarborough Shoal (Pedrozo, 2014). An illustrative representation is shown in [Figure 6.2](#), but this does not fully reflect Vietnam's claims to the Spratlys. Separately, and again shown on [Figure 6.2](#), Malaysia, Brunei, and the Philippines all claim smaller amounts of maritime territory in the SCS, with the principal disputed geographic features being in the Spratlys but with the Philippines also claiming Scarborough Shoal (Rosen, 2014; Roach, 2014).

As with China and Taiwan, all these states' actual control of features is much narrower than their claims. Vietnam, Malaysia, and the Philippines have some permanent stations in the Spratlys, while Brunei has no outposts at all.

Beyond these competing states, the US also plays an important role as arguably the pre-eminent military power in the region (Heginbotham et al., 2015; Li, 2016). While it has no formal views on the merits of the competing claims, it has expressed its view that the disputes be resolved "peacefully, without coercion, intimidation, threats, or the use of force, and in a manner consistent with international law" (O'Rourke, 2018, Summary). The US position is notable due to its military presence and alliance with the Philippines, complicating any efforts by a party to force a resolution.

Efforts to resolve this complex situation, with enormous national interests hanging in the balance, have broadly made little progress. Across the SCS, states have resisted avenues such as UNCLOS arbitration, likely due to the complexity of the

legal arguments involved rendering it unclear who would benefit. Efforts at bilateral or multilateral mediation have also not borne fruit. Instead, as discussed below, nations have focussed on asserting and cementing their practical and military control – a path that does not align well with consensual resolution. Due to this mixture of high stakes, multiple parties, lack willingness for mediation and increasing militarisation, the SCS presents an area of high risk for conflict.

### **Historical Activity 1995–2015**

The various disputed claims have not lain fallow and instead have seen bouts of activity across decades, including diplomatic, economic, military and paramilitary behaviours of the types predicted in Chapter Three, providing a rich dataset for analysis. Actions have ranged from stand-alone occurrences, such as legal challenges or isolated patrols by ships, to intense inter-state crises involving significant military assets, such as occurred between China and the Philippines at Mischief Reef in 1995 and Scarborough Shoal in 2012 (Yung & McNulty, 2015). National activity has also arguably displayed patterns, with several (but not all) analyses suggesting that China in particular grew more assertive with threats and displays of force after 2009 (Friedberg, 2014), but with this perhaps falling away again in 2013 (Li, 2016).

The various contenders have also been active in building facilities across the SCS to enhance their control of the region, with some 90 outposts built across 70 geographic features (CSIS, 2018c). Particularly notably, from 2014 China engaged in extensive island-building on territories including at Fiery Cross, Subi, and Mischief Reefs (McDevitt, 2015). This effort created more land in 12 months than similar actions by all other claimants over 40 years (Department of Defense, 2015). The process involved enlarging existing features via land reclamation<sup>203</sup> then adding infrastructure, including military assets such as missile launchers, fighter aircraft and radars (LaGrone, 2015; Starr & Sanchez, 2016). However, China has not been

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<sup>203</sup> This is conducted using specialised equipment on barges to siphon sand and rock from the seabed and deposit it on existing features.

alone in its actions. For example, Vietnam not only occupies the greatest number of the Spratlys (21 features, with other claimants holding less than 10 each) but also doubled the number of structures on them over the last 20 years (Vuving, 2016).

### **A Changing Balance of Power**

All these activities have occurred during a profound but uneven shift in military power in the region since 1995, particularly regarding China. Some 20 years ago, China's capabilities were extremely limited, notably for the maritime and air forces most suited to applying force in the SCS. The Chinese Navy (formally, the People's Liberation Army Navy [PLAN] and its associated Air Force [PLANAF]) in particular was essentially unable to project power to distant areas such as the Spratlys (ONI, 2009, 2015). However, in 1996 China's defence spending commenced unprecedented growth, rising 620% in real terms to 2015 and leading to a range of naval and air acquisitions that dramatically increased Beijing's power projection capacity (Heginbotham et al., 2015; Kirchberger, 2016; Cliff, 2015; Cole, 2017). Partially in response, since the 1990s Vietnam, Taiwan, Malaysia, Brunei and the Philippines also variously commissioned new submarines, major ships and advanced fighter aircraft (Kirchberger 2016; Chang, 2012; Goldrick & McCaffrie, 2013).

Importantly, the impact of these various changes on specific dyadic balances is not straightforward, especially at the disputed features that have been the focus of most crises. In particular, even with its vast investment, China is far from being clearly the most powerful actor in all cases. This reflects the operational nature of military power and highlights the need to carefully consider state actions using well-developed approaches to armed force. While this is discussed below, key issues include that each nation procured different equipment, in differing quantities, at various times. Thus, their respective force structures' assessed Preponderance, Modernity, and Asymmetry too varied dynamically. Also, the range effects of geography are strongly felt in the SCS. So, the Chinese-claimed but Malaysian-held Swallow Reef is 1,300 km away from China's closest bases, severely constraining Beijing's applicable forces, yet is less than 300 km from Malaysia's.

## The South China Sea as an Ideal Test Case

Due to these factors, the period 1995–2015 in the SCS represents an ideal case for this dissertation’s aim: testing the predictions of DR(GS)BOP, DR(GS)PTT, DR(GLS), OR(PTT) and OR(BOP) for states in territorial disputes against historical activity. This is for several reasons.

Firstly, the SCS represents an area where militarily relevant objectives exist, in the form of the territorial disputes are occurring. These generate the more determinate predictions discussed in Chapter Three, are suited to assessment under the 5-7-7 model, and the likelihood of predicted behaviours being observed is increased as the SCS can be judged as salient to its contending nations. So, all states should seek to both gain claimed territories and defend those they hold.

Secondly, the SCS since 1995 particularly supports the testing of BOP versus PTT due to the large shifts in military power that have occurred following China’s increase in defence expenditure and other nations’ responses. Hence, opportune moments under either theory (i.e., power superiority or power parity) should have often occurred for various states at various locations, affected by issues including the distance of AO from homelands and each side’s force structures.

Thirdly, useful data on state behaviour and military power factors is available in abundance for 1995–2015 (a period of 21 years when considered as whole years), providing a natural span on inquiry for the dissertation. This date range is the period of a dataset of nearly 2,700<sup>204</sup> SCS state behaviours developed by the National Defense University in Washington DC (Yung et al., 2017). Also, for this period the data to assess military power is readily available through avenues such as the International Institute for Strategic Studies’ publication *The Military Balance*.

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<sup>204</sup> Noting only some 1,650 entries were used in total, as several did not relate to relevant locations, although as discussed in Chapter Seven, the repeated applicability of certain entries meant that in fact some 24,000 instances of state behaviour were analysed,



Fourthly, the SCS in general represents a rich source of data as it involves no less than six claimants (plus one major external power) forming 15 different dyads<sup>205</sup> that contest, with varying degree of overlap, 15 different sites – which can be counted as 32 different territorial disputes.<sup>206</sup> This means that the 21-year period generates 126 country years (for six nations) or 315 dyad years (for 15 dyads) of information. Such a diversity decreases the reliance on outliers, increasing confidence in analytical outcomes.

Fifthly, several aspects of the political and strategic environment in the SCS increase its alignment with the conditions set by OR and DR for states to behave as they predict. This again increases the certainty that forecast behaviours will be observed, at least if the theories themselves are correct.

For example, while OR and DR focus on Great Powers, both note that their tenets apply to lesser states “insofar as their interactions are insulated from the Great Powers of a system, whether by the relative indifference of the latter or by difficulties of communication and transportation” (Waltz, 1979, p. 79; Mearsheimer, 2014, pp. 412–413). This well describes the situation in the SCS where the influence of the two Great Powers involved, China and the US, are curtailed. For China, this stems from its (until recently) weak Navy and Air Force being stymied by the effects of communications and transportation – namely, the need to travel great distances to project power. And for the US there are issues of indifference, as under OR, America should not intervene militarily to prevent conquests by local states unless this might result in a new regional hegemon that could threaten US primacy (Mearsheimer, 2014, pp. 234–267). This indifference was arguably borne out when the US did not militarily interfere in SCS contests between China and Vietnam in the late 1980s, or China and the Philippines in 1995 and 2012. Such inaction should have emboldened Revisionists, as conquering minor territories should be unlikely to provoke an American reaction.

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<sup>205</sup> With the US and The Philippines considered as a single entity.

<sup>206</sup> Counting only bilateral disputes between nations that control a site and potentially multiple other claimants, without further counting disputes over that location between those other claimants also.

Indeed, conditions in the SCS allow for particularly strong testing of OR as various claimants, being in the same region, are clearly competitors for regional dominance. Hence, they should be strongly motivated to treat one another with rapidly escalating and intensifying coercive strategies, with scant room for any cooperation.

The SCS should also enable the use of the full spectrums of behaviours by DR(GS) and DR(GLS) nations. For the former, low-level cooperative actions are enabled over time (preventing ready confusion with Revisionists) due to SCS nations meeting Waltz's definition for a loose association of states (see Chapter Three). In turn, as the size of the territories involved are small islands at most, DR(GS) states should be free to attempt actions up to and including conquest, as the resulting power increase should be slight enough to be unlikely to form coalitions against them.

Regarding DR(GLS) behaviour, nothing in the SCS environment prevents such states from being willing to defend their positions or to cooperatively resolve their claims on other nations' lands. Further, the SCS can be considered as militarised, having seen distinctive military coercion by various nations over time; hence, even DR(GLS) states can be expected to engage in normal defensive military actions, such as building infrastructure for their armed forces.

## **Section II: Applying the Military Power Model to the South China Sea**

With the SCS broadly described, it is possible to begin the process of assessing the fluctuating military balance of power between the various states. Once national positions in balances are identified, behavioural predictions can be generated and compared with the historical record to identify which of the theories is stronger. As will be recalled from Chapter Three, the importance of identifying states' positions stems from this being the key variable, according to the theories, driving countries' behaviour in territorial disputes. Because of this, nations' relative strength must be understood before their actions under the various theories can be forecast and the historical record assessed.

Identifying states' positions is conducted through applying the five-step model described in the previous chapter. For this study, it was decided to conduct this process annually to determine a power assessment and behavioural prediction for each state at each operational location. This allowed for the manageable and accurate aggregation of the necessary data, noting military capability information is principally published in an annual format.

Even for annual assessments, employing the model on the SCS is a complex procedure that requires and generates substantial quantities of qualitative and quantitative data. It also requires a range of assumptions and judgements to address logical and practical issues that arise in the application of the 5-7-7 model. To conduct this process within the bounds of a dissertation chapter, or even several, would be infeasible in terms of length and unwieldy in presentation.

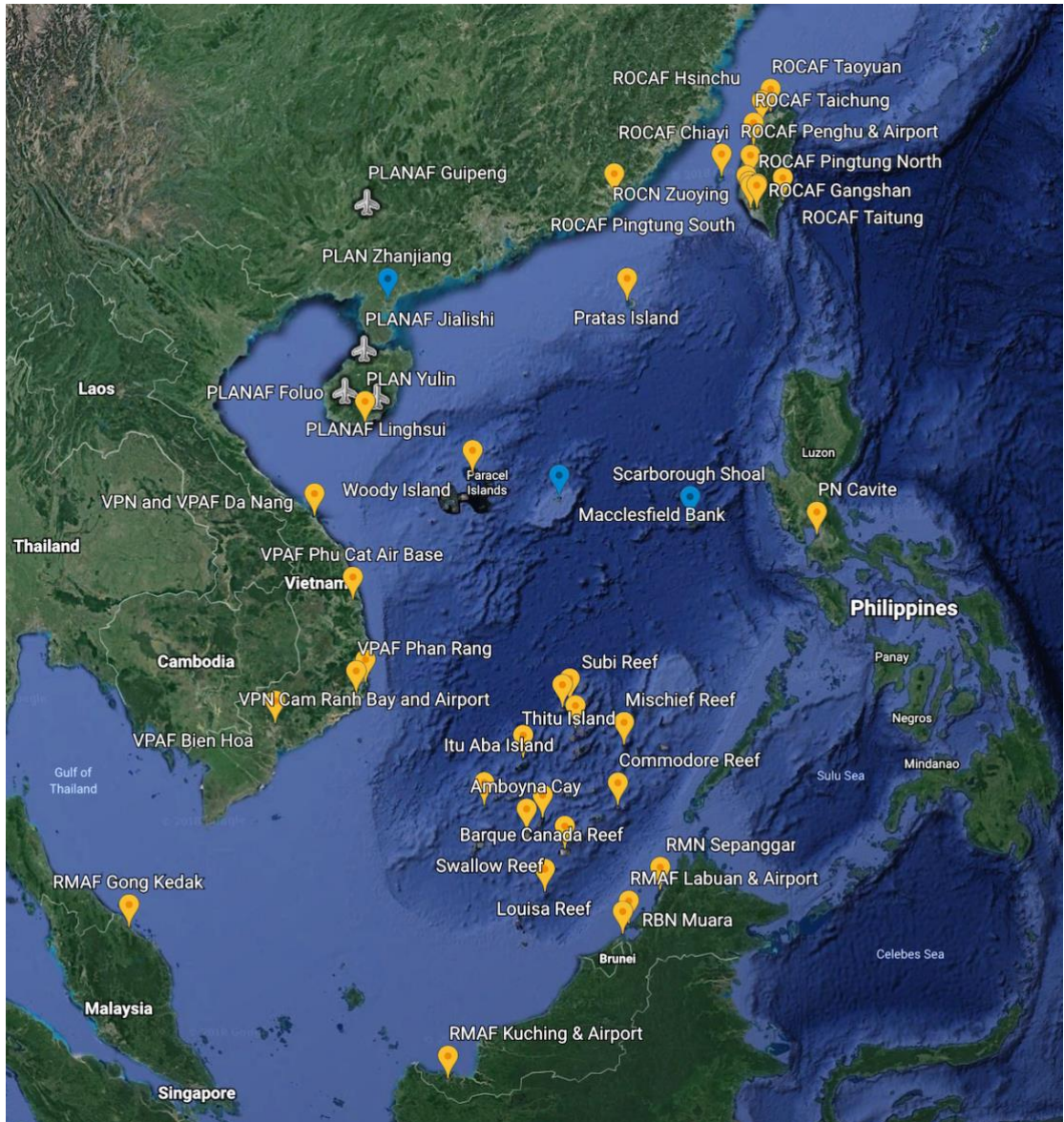
Instead, it is conducted in the MPA, key elements of which can be found at Annex B. This is comprised of a set of conceptual and explanatory notes (at Annex B) and two sets of Excel Workbooks (held separately as research data, available on upon request). The complete MPA contains some 215,000 cells of data and conducts the analysis to generate 315 dyad-years of military power and behavioural prediction assessments; it is the most detailed such work publicly available, to the author's knowledge. It includes 1,371 individual dyadic assessments at 15 locations, based on the capabilities and interactions of 115 major military asset classes located at 29 military bases and utilising 70 sensor and 70 weapon systems.<sup>207</sup> To provide a visual indication of the work involved, [Figure 6.3](#) below, drawn by the author from Google Earth, shows all 44 locations considered in the MPA, comprised of 29 basing locations and 15 AO.

Rather than repeating the MPA's information here, a summary approach is taken, with this Section II describing the application of each step of the model to the SCS. The following section then reports the key results.

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<sup>207</sup> This reflect all instances where states were in competition for a feature.

**Figure 6.3: Overview of South China Sea Claimant Bases and Operational Locations**



*Notes: Each base is identified through the acronym of its main military service (such as Vietnamese Peoples' Navy: VPN) and location name. Dual-use facilities (such as an airport that also is used by military forces) include the second use in the name. Brunei: Royal Bruneian Navy (RBN); China: People's Liberation Army Navy (PLAN), PLAN Air Force (PLANAF); Malaysia: Royal Malaysian Navy (RMN), Air Force (RMAF); the Philippines: Philippine Navy (PN); Taiwan: Republic of China Navy (ROCN), Air Force (ROCAF); Vietnam: Vietnamese People's Navy (VPN), Air Force (VPAF).*

*Source: Author's map drawn from Google Earth.*

## **Step One – Identifying Objectives, Operational Needs and Capability**

### **Requirements**

As discussed in Chapter Five, the principal aim of this step is to conceptually define the details of the Operational Suitability and Resilience criteria for particular locations and scenarios. For any geographic area of interest (in this case the SCS), this is done by identifying states' militarily relevant objectives, and then determining *what* military operations they will need to conduct *where* to achieve these. This then generates associated equipment capability requirements against which nations' armed forces can be assessed in Steps Two and Three. The process of identifying needs and requirements is now summarised below.

### **National Militarily Relevant Objectives**

To determine operational needs, it is necessary to first identify states' militarily relevant objectives in a particular area – that is, those foreign policy goals suitable to being directly achieved in whole or in part by the application of armed power. The nature of these aims will determine the types of military operations states must conduct in that region to achieve these goals.

As an initial point, all the disputant nations in the SCS can be understood as having essentially the same overall national aim: to exercise sovereignty – that is – absolute control, over the entirety of their claimed geographic features and marine territories. More particularly, sovereignty is defined as the condition when a state can freely use all these areas, at all times, for its own purposes while being able to deny them to a foreign nation. By achieving this ultimate goal, states can gain, safely, the various economic and strategic benefits discussed previously that can accrue to a controlling power.

Sovereignty is clearly a militarily relevant objective. It can, after all, be directly achieved by a nation achieving SC over its entire claim. Indeed, the definition of sovereignty used here reflects that of SC but extended to cover land areas and

ongoing control (as, logically, the need for a state to be able to exert control over its claim is constant rather than time-limited). And much as SC is a condition directly generated by military forces, then “sovereignty as expanded SC” can be shown to likewise be achievable by the application of armed power.

Despite this potential, claim-wide SC is not used as the militarily relevant objective for investigation, for practical and conceptual reasons. As an initial point, to achieve such sovereignty requires certain operational effects; namely, to be able to persistently hold at risk (by being able to detect and fire a weapon at) any adversary that exists in, or comes to impinge upon, the claimed territory through the available physical domains. These domains (and adversaries) are air (aircraft), sea-surface (ships), underwater (submarines), and land (to address any troops that may already occupy features). The capability requirements to hold such forces at risk are, in turn, having the weapons, platforms, and sensors in place to accomplish Anti-Air Warfare (AAW), Anti-Surface Warfare (ASuW), and Anti-Submarine Warfare (ASW) – with these three reflecting the classic SC mission – and also AA.<sup>208</sup>

Yet to apply such effects, persistently, across claims is an enormous task. The territories involved are vast and require correspondingly immense and complex AAW, ASuW, ASW, and AA activities. Due to this, any effort to achieve such broad and ongoing SC is difficult to sensibly consider in terms of even a range of discrete military operations – the focus of the 5-7-7 model. Further, due the scale of the task (which includes being able to concurrently hold at risk all targets within a state’s claim) the prospect of any nation seeking to achieve this seems remote. Hence assessing states’ military potential to produce claim-wide SC provides little insight into understanding their actions. Also, if such a power assessment was conducted, due to the intuitively high capability requirements, any of the contending nations would almost certainly be found to be weak – a situation where their actions again provide no insight into their underlying motivations.

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<sup>208</sup> Such amphibious attacks are required to achieve quick and cheap victory, sought under the 5-7-7 model, as opposed to potential blockades or bombing operations that may endure for months.

### A Principal Subobjective: Sole Control Over Features.

However, a more 5-7-7 suitable militarily relevant subobjective also exists, and is the one selected for investigation here: nations seeking sole control over their claimed features. By this goal is meant that states will seek to ensure no foreign nations possess (a term used here somewhat interchangeably with occupy and control) a feature within their asserted borders.

States seeking sole control was chosen for investigation for various reasons. Firstly, it relates to features – and such sites are highly important to nations’ efforts to control and exploit the SCS in general, as discussed in Section I. Secondly, as sole control relates to disputed territories it is clearly a militarily relevant goal. In more detail, for nations to achieve it requires that they both remove competing occupiers from within their claims, and then maintain control of any newly gained features and also any existing contested holdings. These outcomes can be directly served by armed force: states can use military power to eject competitors from their claims, to exert possession themselves; and to defend themselves from nations seeking to eject them in turn. Thirdly, it is a goal that should be held and actively pursued by all SCS claimants, as it is essential to their exercise of sovereignty and is unfulfilled, as all states possess features within one another’s claims, and/or vice versa. Hence nations should work eagerly to achieve possession – a notion verified by the dataset of state behaviours assessed in Chapter Seven being rich with examples of nations exhorting each other to withdraw from outposts within their borders. Finally, using features supports state-type assessment. So, since all claimants control various features within one another’s asserted borders, all have incentives to conquer and protect territory at these locations.<sup>209</sup> Each site forms a specific foreign policy goal for a nation (i.e., it seeks to gain or maintain control there), that it should pursue via strategies. This allows for state-type analysis by studying each nations’ behaviours as it seeks each goal, an aim supported by the SCS states’ active pursuit of control.

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<sup>209</sup> Most states must defend their areas of control and conquer those of other occupiers. But Brunei claims only one feature, Louisa Reef, and this remains unoccupied. Yet Brunei retains an offensive need to be able to secure control, and a defensive one to prevent another power claiming the Reef.

### *Refined Definitions*

Before discussing how sole possession drives the operation of the 5-7-7 model, it is useful to define how state control of individual sites can be described and identified, as sole possession relies on nations achieving multiple instances of such occupation. As an initial point, just as sole control is a less demanding subset of SC sovereignty, likewise are the criteria for possession sensibly defined in less strenuous terms. Thus, a state is held to control a feature when it can credibly defend its existing free use of the area and does not face a continuous challenge from other nations. Importantly, this differs from SC in that the occupying state does not need to be able to hold at risk any and all foreign units that may threaten its free use, as to achieve this would require at least permanent AAW and ASuW capabilities to defend against the most likely forms of attack.<sup>210</sup> Instead, a state has control, in practice, when it is the only nation *persistently* deploying an armed force at the site – and this force can *credibly* defend itself from a likely adversary.

This definition has two components, persistence and credibility, that are separate but operate together to give possession. In terms of the former, a state's control is most definitive when it is the only nation with (para)military forces (structures and/or personnel) visible on a feature. This reflects that if other armed forces are absent, they cannot easily interfere with its free use of the area. Or, at sites lacking any land-based forces from any nation, a state has control when its forces are the only regular (para)military air and/or ship-based patrolling presence at the area, with other nations not generally physically contesting such patrols or the activities of its civilian assets in the area, such as fishing vessels.<sup>211</sup> Again, having the only persistent presence, the state's use of the feature is broadly free.

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<sup>210</sup> Ongoing free use that held at risk all the most likely dangers would require constant defence, at least, against the missile, bomb, and troop assaults that could be launched – needing AAW and ASuW to defend against munitions and aircraft, and AA forces respectively.

<sup>211</sup> A nation would have control even if other states' occasionally patrolled the feature, and these units fired warning shots at its forces. Such actions would be highly coercive but not sufficient to interrupt its control. However, regular foreign patrols (let alone a continuous deployment) that consistently interfered with its forces or its civilian units would indicate control was contested.



In terms of credibility, this reflects that any possession is tenuous if the forces present can be easily overwhelmed. In turn, the minimum capabilities required for credible defence are scenario dependent. For situations of ongoing peacetime control, both land forces and patrols only need to be (and are expected to be) lightly armed: troops and coastguard ships equipped with machine guns and similar. Such “light forces” are able to defend themselves against the kinds of limited threats that can sensibly be proposed as still equating to peacetime coercion: small strike forces of light troops (such as saboteurs) and/or foreign civilian poachers or lightly armed adversary (para)military units. However, in the face of a major military attack (a “war” scenario), the defending state will deploy any and all of its available military assets to seek to destroy the aggressor. The peacetime versus war scenarios are based on the 5-7-7 model (which is intended to resemble real-world decisions), under which defenders expect to have enough warning of any attack to muster a proper defence (requiring in turn the aggressor to deploy stronger offensive forces). Hence light forces are suitable for ongoing peacetime control, although states may opportunistically use military units as part of patrols, or at times deploy heavier weapons (such as missiles) at sites. Of note, the above scenario is supported by observations of actual control forces in the SCS, with states generally having fairly sparse and light structures on features, heavy weapons being very rarely deployed, and coastguard patrols outnumbering naval ones.<sup>212</sup>

Finally, for clarity, a state with land-based forces in position is always deemed in control until these units are displaced – even if another nation regularly contests the site’s waters. This is because the country with land forces does, literally, have free use of the feature itself until another country seizes it. Based on this when nations seek to eject occupiers, they are considered to, at minimum, aim to replace the current form of occupation with its equivalent: land forces supplant land forces, patrols supplant patrols. This does not mean that a new possessor may not

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<sup>212</sup> The author is a former imagery analyst with the Australian Department of Defence. Imagery of island-based forces can be found at CSIS (2018c); and analysis of this showed no indication of permanently heavy armaments, with across the investigation period there being only one confirmed deployment of such weapons, by China in 2015 (The Guardian, 2015). Also, the dataset used in Chapter Seven showed coastguard patrols occurred at some double the rate of military ones.

build an outpost where none existed, simply that this is not presumed to occur. Also, since land forces are not expected to have heavy weapons that enable them to exert force into surrounding waters, any existing or succeeding land-based occupation is deemed to be supported by armed patrols, to enable control over local waters. Further, once a state has control, it is presumed to deploy civilian economic assets into the waters around the feature, such as fishing vessels, to make use of the rich SCS resources and so begin to gain the benefits of control.<sup>213</sup>

### Targets and Outcomes

With these definitions addressed, it is possible to continue with the 5-7-7 model. As noted above, states' common militarily relevant objective in the SCS is considered to be the exercise of sole control. Nations can achieve this by force via ejecting other states that control features within their claims, and then holding on to these and any other contested areas they already control. This leads, for all nations, to a set of targets: the various disputed sites within their claims. For these, states have two operational outcomes: to be able to defend territories that they already control, and to conquer those held by adversaries and/or to be able to reclaim their own if lost. To achieve these requires the conduct of certain types of operations, with associated equipment requirements common to all nations,<sup>214</sup> that can be assessed against state inventories. By doing so and determining nations' capacity to successfully conduct needed operations at various features (discussed below), their actions at these sites can be analysed to identify state-type.

### *Key Locations: Centres of Gravity and Secondary Targets*

Before examining operations, to compare the behaviours of states most effectively also requires selecting those geographical targets that should provide the most

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<sup>213</sup> Rich fishing grounds exist around many features, often causing quarrels over resources, such as that between China and the Philippines regarding the waters around Scarborough Shoal. For a review see Rosen (2014).

<sup>214</sup> Even Peaceful nations should have defensive capabilities and those needed to recapture features, and as these are logically indistinguishable from offensive needs, they are no proof of motivation.

incentive for nations to act acquisitively and thus provide data on their underlying motivations. This reflects that while a state should aim to eject all competing occupants in its claimed area of sovereignty, logically some locations should be preferred for capture first – and focussing on these should provide locations where state’s offensive and defensive actions should provide the most information.

In this dissertation, such first-order targets for all state-types are considered to be, where these exist within each of the five main disputed groups of features, what are referred to as a “Centre of Gravity” (CoG), and all nations are thus also expected to concentrate on defending such features. A CoG is defined as an island (natural or man-made) that hosts the more substantial facilities such as ports, airfields, and military outposts that allow it to form the core of a nation’s presence in an area.<sup>215</sup> The decision to utilise CoG as primary sites reflects that all state-types can be presumed to preferentially seek dominion over such locations so as to best be able to exert control over their claimed territories in the associated group of features. The appeal to acquisitive OR and DR(GS) should be clear – conquering CoG provides the best chance for a decisive victory to eject the heart of a foreign state’s power in an area, rather than a drawn-out campaign to capture smaller outposts. But CoG also have greater economic potential, not least as most are on larger features that have better prospects of granting an EEZ. This makes them more appealing to less violent DR(GS) and DR(GLS) states to gain control of without conflict or by reaching cooperative resolutions with the controlling nation short of conquest.

All the nations in the SCS have CoG with the exception of Brunei; these six sites, their contending states, and those nations’ military objectives are listed in [Table 6.0](#) below and discussed in detail in the MPA and summarised in Section III of this chapter. Importantly, in [Table 6.0](#) and onwards, countries’ objectives and capability needs for areas that they do not control are *framed from the perspective of seeking violent conquest*. This is because a presumption of offensive intent is the most effective basis to assess a nation’s military power and interpret its actions. That is,

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<sup>215</sup> The military benefits of control of CoG are further discussed in the MPA.

once a country's potential to conquer an area by force is determined, *then* its actions in terms of acting coercively or cooperatively can be fairly assessed.

Where CoG do not fall within a disputed area, as secondary aims states are taken to seek to conquer whatever features do exist that are occupied by their adversaries.<sup>216</sup> They may seek to do so for reasons including simply achieving their objectives of sovereignty; pre-empting any efforts by the current occupier to further embed their control, such as by island-building; or seeking to ensure their own exclusive economic exploitation of the area (concerns which also apply to CoG). Such secondary targets range from islands or rocks through to submerged features, and these can be controlled by an incumbent through avenues such as outposts or simply permanent naval or air patrols. When attempting to conquer such territories, the attacking state is presumed to seek to eject the occupier, in whatever form it exists, and then control it through their own outposts or patrols.

Nine secondary features, controlling and claimant states, and military objectives, were selected as key exemplars and listed in [Table 6.0](#). These include two sites (Macclesfield Bank and Scarborough Shoal) that were the only features in a region, and also happen to be (with Louisa Reef) the only sites with no land-based forces present. Also, three Chinese-held rocks (Subi, Mischief, and Fiery Cross Reefs) were selected due to Beijing commencing substantial land reclamation there in 2014, sufficient to make them tempting targets in 2015.<sup>217</sup> These features hence are case studies to examine whether other claimant nations' behaviour changed as these sites became potentially easier to conquer via amphibious assault (a matter discussed further below). Further, Mischief Reef was seized by China in late 1994 or early 1995 (the exact date is unclear) from territory controlled by Manila (Rosen, 2014). As such, the site is also used in this dissertation as a case of when one of the 'war initiating' behaviours being tested for is conducted – that is, China's landgrab.

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<sup>216</sup> Again, such behaviour is only actually expected of OR and on occasionally aggressive DR(GS) nations, but all state-types will have requisite capabilities regardless. Thus, the actions of countries towards secondary targets provide a basis for determining underlying motivations.

<sup>217</sup> Strictly, only Fiery Cross commenced major reclamation in late 2014; however, all Reefs are judged suitable for AA in 2015, and treated collectively for analytical convenience.

In addition, four other targets were selected (Amboyna Cay; and Barque Canada, Commodore, and Louisa Reefs) due to being concurrently contested by the greatest number of states under investigation. This was done to have a manageable number of sites and also provide insight into the actions of the greatest number of states.<sup>218</sup>

#### National Militarily Relevant Objectives: Overview and Caveats

Through the process of identifying these primary and secondary targets, a list of 15 AO has been developed<sup>219</sup> that provides specific militarily relevant targets for national efforts (i.e., strategies) to attempt to maintain control and/or gain control. Hence, specific military balances of power can now be assessed at these sites, and thereafter strategies assessed to identify state-types.

Also, while no position is taken on the rightful ownership of the various features, to define where states had offensive or defensive objectives it is still necessary to adjudicate which nations were in possession of which features, and when. In short, the counting rule was used that nations in control (as defined previously in this Section) of a site on 1 January 1995 were considered to be in de facto control.<sup>220</sup> Any subsequent change to site possession was held to occur when a new state was able to display the relevant control characteristics for a particular feature.<sup>221</sup> These results are reflected in Table 6.0 and throughout this chapter and the MPA.<sup>222</sup> Finally, it is of course not incumbent upon states to seek to conquer new features, let alone in the order described above (i.e., by focussing on CoG and secondary targets), or in the ways proposed below (i.e., large scale military operations). But as a working concept this dissertation presumes nations have these objectives and aim to pursue them via the means described. Indeed, even should states seek conquest

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<sup>218</sup> Of course, many other sites exist also. For example, some 20 sites alone are contested between the Philippines and one or more of Taiwan, China, Vietnam, or Malaysia.

<sup>219</sup> The targets are considered to be suitably dispersed as to comprise separate AO.

<sup>220</sup> Of course, de facto control itself is divided into regular and longstanding de facto control based on the duration of a state's possession, however this is not addressed here as it is not relevant to the 5-7-7 process. These issues are discussed in Chapter Three, Section IV; Chapter Seven; and Annex C.

<sup>221</sup> Under these rules, China is considered to be in de facto sole control of Mischief Reef from 1995, even though the exact date of its seizure of the site is unclear.

<sup>222</sup> More detailed counting rules are also described in Chapter Seven and Annexes B and C.

by other means (such as a drawn-out blockade of a site), the results of the 5-7-7 model can be understood as informing their views of what a military assault scenario would involve, potentially providing incentive to use other approaches.

### **Operational Needs, Effects and Capability Requirements**

Further to the above, states are presumed to seek to conquer and defend specific CoG and secondary targets in the SCS. Thus, to assess balances of power, countries will consider their potential to successfully conduct military operations that progress these aims. As these operations depend on specific capability effects, which generate associated equipment requirements, nations (and scholars) can assess their capabilities against these to determine balances of power.

This process is summarised below, with a much more detailed discussion in the MPA. Of note, the requirements developed are applied only to mainland-based naval and air forces able to reach these locations. While air, naval, and land units located on islands could also be included, they are not, as the nature of the presumed operational scenario (discussed below) renders them moot. Also, quite extensive needs are identified for offensive operations due to the definition of an “opportune moment” for aggression being one that allows quick and *cheap* victory – one that has minimised losses. This requires that an attacker be able to proceed with a measure of safety, driving greater requirements for effective self-defence.

### **Offensive Needs, Effects and Capability Requirements**

Nations seeking to conquer (or reclaim) primary or secondary features will conduct broadly similar operations, generating broadly similar needs, regardless of the nature of the target and their intended means of exerting control (land-based occupation or enduring patrols). However, certain key differences exist in detail, discussed below, and also in terms of when the “initial battle” (that is the focus of the overall power assessment process) is considered to occur – with this addressed in detail in the operational scenario section. Importantly for the discussion here,

however, the initial battle is not considered to occur in all instances when the aggressor first seizes control, indeed it may occur many months later – if that is when the defender is best placed to strike. Further, the aggressor is presumed to believe that after the initial battle, if it is victorious, that the defender will sue for peace, allowing it to use light forces for occupation. This aligns with the noted Realist focus on short-term victory rather than the potential for long-term wars.

To capture any feature with a measure of safety, and then enjoy its benefits in similar circumstances, an aggressor essentially needs to complete two tasks. Firstly, it must generate a zone of SC encompassing the feature so that those assets vital to occupying and exploiting the area (i.e., light land-based and patrol units, and economic exploitation assets<sup>223</sup>) have a reasonable chance of protection when threatened by the defender during the initial battle. To achieve such SC inherently involves the attacker defeating or driving off any defending naval and air platforms using its own equivalent forces; a process that also grants it preliminary control (noting defending land forces are not considered relevant). Secondly, afterwards, it must begin the process of enforcing its ongoing peacetime possession, either via land-based forces on CoG and some secondary targets, or by armed patrols. While this process encompasses two successive tasks, these can in practice occur concurrently. For example, the same forces that a state uses to defeat defending platforms can then, effectively immediately, begin enforcing ongoing control. Despite this overlap, the way the (re)conquest process generates operational needs can most easily be understood by considering the tasks separately and in reverse.

### *Ongoing Control Enforcement Needs*

To address first those situations where nations seek to exert ongoing control via a land-based presence, for these they must engage in some form of amphibious operation to actually deploy such forces onto a feature. In fact, two types of operation can be determined. A full AA is applicable to larger features and involves

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<sup>223</sup> Recalling civilian assets are presumed to begin exploiting an area once a state first seizes a site.

the landing of specialised troops such as Marines to seize the site and gain possession. In turn at secondary features, amphibious operations involve construction operations (using mainly civilian Construction Resources [CR]) to either reclaim land or install or rebuild outposts on stilts.<sup>224</sup> Such works may take months to complete, but once done, also allow for the exercise of control. These issues lead to the first operational need for an aggressor: to be able to conduct AA and/or CR activities at site(s), depending on the features it claims.

Separately, where a state seeks to enforce control by enduring patrols, it must of course be able to actually deploy at least light forces regularly. This requirement also applies where it has land-based forces, to allow control over nearby waters. This leads to the second operational need for the aggressor: the ability to conduct persistent lightly armed ship and/or air patrols.

### *Sea Control Needs*

Of course, the aggressor realises that at some point, the defending force will seek, at a time most advantageous to itself, to defeat its effort to gain and enjoy control, and do so by destroying the relevant vital assets. For AA situations, these targets are the amphibious forces (as without them the assault cannot occur), and the ideal (but brief) window is before the assault, when these units are concentrated aboard vessels and vulnerable to attack from the air, surface, or subsurface. For CR, the vital assets are the civilian units engaged in long-term construction (without which there can be no occupation), but the window is broader – they are vulnerable to all avenues of attack for months while at work. This situation too applies in maritime patrol situations, but with the defending state seeking to destroy the vital civilian economic assets exploiting local waters. Of course, such assets are not as crucial to the attacker's control as are AA or CR units in their respective situations.<sup>225</sup> But they are key targets in patrol scenarios due to aggressor's need to defend them: as noted in Chapter Three, (para)military forces exist in part to protect citizens' lives.

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<sup>224</sup> As whatever small facilities existed initially would likely have been destroyed in the initial attack.

<sup>225</sup> Hence even though such assets may be present in those scenarios, they are not counted as vital.



The main effort by the defender occurs during what is considered the “initial battle” but as noted above the specific timing of this may vary. Considering this uncertainty, for the aggressor to be able to conduct its amphibious and/or economic operations with a measure of safety, it must be able to provide its vital units with protection against any and all likely attack avenues, at least until the initial battle is concluded. This translates to a requirement for SC.

In particular, the aggressor must be able to generate a MEZ. A MEZ is a localised area of SC that protects the vital assets up to and during the initial battle. It is generated by armed escorts as amphibious craft – being transport vessels – have little self-defence capacity, and civilian assets even less so. As described in the operational scenario, the MEZ forces are solely responsible for the initial battle – no separate initial strikes on defenders are considered to occur. Therefore, the MEZ escorts are the aggressor’s forces counted for this battle. Also, although not a relevant factor in the power assessment process, MEZ forces can be considered to provide fire support during any amphibious operation, attacking either CoG land-based defenders or those at secondary sites.

Two types of MEZ can be determined. A “standard” one for amphibious assaults (AA/MEZ) is put in place by air and naval units and is centred around the invasion force until the initial battle occurs and, if this goes well, then the feature itself as the land forces gain control, allowing MEZ forces to withdraw. As the initial battle occurs quickly (i.e., before the troops conduct the assault) the AA/MEZ need only remain in place for a few days. Alternatively, an Enduring MEZ (EMEZ) is put in place in the same ways but potentially for months, and to achieve the same end, for either CR or permanent patrolling situations. The AA/MEZ and EMEZ are identical in requirements but differ in force structure implications, as discussed in Step Two.

These issues lead to the second operational need for an attacker: to be able to conduct AA/MEZ and/or EMEZ operations, depending on the nature of the features it claims. Of note, due to this offensive association, *all references to MEZ in this dissertation relate to aggressive actions to capture territory.*

With operational needs defined, their *general capability effects* can now be considered. For amphibious operations these are to be able to land troops and support equipment, or to deploy marine CR. For patrol operations, the required effect is to be able to deploy air and/or ship patrol units to a site, effectively continuously. In turn, this dissertation proposes that the effects necessary to generate an effective MEZ are that a force must be able to detect and destroy air, surface, and submarine targets out to a range of 50 km (i.e., a circle of 100 km diameter). As is discussed in the MPA, the 50 km figure was chosen as it places an invasion force (or civilian assets exploiting a feature) beyond the reach of the most commonly available air, sea and submarine-launched weapons that may threaten it, based on a notional deployment where the vital assets are at the centre of a ring of defending escorts.<sup>226</sup> Also, the requirement for such a tridimensional MEZ may be tailored if an adversary lacks certain threats, such as submarines.

These capability effects hence drive the *general capability requirements*. For amphibious operations, these are for a state to have appropriate heavy AA equipment (large amphibious vessels able to land troops and equipment such as missiles) – nations are presumed to be able to access sufficient CR assets. A further AA requirement would be for a nation to have suitable landing forces (such as Marines). As a review of *The Military Balance* showed all states have such forces, this requirement is considered to be met and is not further discussed here, although it is touched on in the MPA. For patrols, nations must have appropriate air or maritime light patrol units – essentially any ship or aircraft that can be armed even with a light machine gun. While of course more heavily armed units can be used, these are considered to be reserved for MEZ needs – discussed below.

For MEZ, the capability requirements are platforms (ships, aircraft, and submarines) with the weapons and sensors to generate, individually or cooperatively, a 50 km SC perimeter. This requires assets able to conduct AAW and/or ASuW, and/or ASW to this range. A force that is able to meet any one of these requirements can conduct

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<sup>226</sup> Of course, this represents a simplification for analysis, presuming in effect that an invasion force or civilian economic assets can essentially be considered to be clustered at a single point.

AAW SC, ASuW SC and ASW SC – with the ability to achieve all three (as tailored by adversary capabilities) required to implement a MEZ. Also, only missile or torpedo armed assets are considered suitable. This avoids counting those platforms with such minor combat capabilities (due to being armed purely with cannon and/or unguided bombs) that they contribute little to victory in modern battle.

In turn, a state's *national capability requirements* are to have the appropriate types of general assets (amphibious ships, MEZ escorts and so on) that can also reach the respective AO from its bases. As is discussed in the MPA, this involves issues both of absolute range and, for ships, sea-keeping, as some smaller vessels are generally considered unable to safely travel over long distances in the open ocean. From a practical perspective, this requirement is applied only to assessing states' heavy AA and MEZ assets as nations are presumed to be able to access sufficient suitable CR, civilian economic and light patrol assets to meet their needs.<sup>227</sup>

#### Defensive Needs, Effects and Capability Requirements

To defend MPA sites, states need to achieve SD. In practice, this merely requires the general effect of being able to attack the vital elements of an adversary's operation: the invasion forces, or the civilian economic assets. Thus, the general and national requirements for SD are simpler: any air, surface or submarine assets that can reach an AO and fire a weapon at a surface target. Further to this, *all references to SD operations in this dissertation relate to defensive efforts by nations seeking to protect their existing territories.*

#### Consolidated Operational Needs and Capability Requirements

The above meets the needs for Step One of the 5-7-7 model: the development of Operational Suitability and Resilience criteria against which national forces can be assessed. Specifically, there is now a list of national objectives and operational

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<sup>227</sup> This reflects both that nations have extensive coastguard forces, and that, at worst, plentiful civilian ships exist that could be pressed into service as lightly armed patrol craft.

needs at key locations, as shown in Table 6.0 below, with these in turn providing operational-effect capability requirements for each state.<sup>228</sup> The *operational needs* generate the criteria for assessing Operational Suitability and Resilience at each location. Simply put (having removed those requirements that all nations easily meet) can the forces that a nation is able to project to an AO conduct, as required, an AA and/or (E)MEZ, or SD? And if so, how many assets could these forces lose before becoming unable to achieve these ends? In turn, the answers are determined by applying the *capability requirements* for these operations against the various national inventories to determine whether they can fulfil the needs at locations. This analysis is conducted for each state in Steps Two and Three.

#### Assumed Operational Scenario

Finally, it is important to briefly describe the operational scenario within which these capabilities are considered. This is because it both highlights a variety of important issues that affect the application of the 5-7-7 model and, while the scenario is essentially common to all MPA sites, certain important differences exist between MEZ and EMEZ situations.

As an initial point, and as discussed previously, the 5-7-7 model assesses power based on reasonably adverse surprise attack scenarios, where nations still seek to maximise their strength. In a practical sense, this manifests most logically in a single large air and naval battle at an AO (i.e., an MPA site), with aggressors seeking to impose an AA/MEZ (and land troops) or EMEZ and defenders seeking to conduct SD. The single large battle arises because a surprise attack provides, by its nature, little time for the defender to mount attacks ahead of the assault force reaching the AO, nor should the attacker mount early raids that signal its intent. Further, a single large battle allows both forces to maximise their strength to achieve success.

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<sup>228</sup> To avoid a confusion of overlapping figures in the table, each nations' range requirements are provided in its individual power overview in this chapter's Section III.

### *All Forces are Deployed and All Forces are Targets*

As noted above, defending forces are seeking to destroy, via ASuW strike, the amphibious and civilian assets vital to the attacker, and the aggressor seeks to preserve these forces. Yet, practically, any and all assets available to either side and capable of contributing to AAW, ASuW or ASW are considered to be deployed to the AO, and to target any and all suitable adversary platforms – from vital assets to military equipment. As a result, when assessing Asymmetry and Preponderance, almost all available weapons and platforms (as targets) are counted, with some limitations discussed under the Resilience calculation notes further below.

This outcome reflects several considerations. Firstly, forces seek to maximise their strength. Therefore, any assets that can be deployed, and might make some impact on any part of the enemy force, are deployed. In doing so they at least complicate the adversary's attempts to achieve victory. Secondly, nations of course seek to attack each other's critical vulnerabilities, so that a force quickly loses its operational suitability and hence is defeated. Such weaknesses can occur anywhere, and so are targeted. For example, a MEZ force may rely on fighter aircraft for its AAW perimeter. In this case, the SD force has every incentive, in addition to its ASuW strikes, to attempt to destroy these fighters so as to render the aggressor's force unsuitable and thus cause it to withdraw. Finally, for ASuW in particular, the MEZ force of course seeks to destroy all SD ships. In turn, the defender's forces also attack all the aggressor's MEZ units, as their destruction can cause the MEZ to fail (if enough are destroyed) and also because these ships, as described above, form a ring around the amphibious and civilian ships. Hence missiles launched at the centre of the ring still have every chance of in fact homing in on the escort forces first – indeed providing such diversion is one of the roles of such a force.

### *Forces Excluded*

No attempt was made to judge the impact of land-based defenders on the chances of success for any amphibious operation. This reflects a lack of existing major

land-based defences and the judgement that in such conditions, if a MEZ was successfully emplaced, then an aggressor would be well placed for a “cheap and easy” victory. Specifically, a surprise attack scenario limits the need to consider major island-based defences, with these defined as large (i.e., long-range) AAW or ASuW missile launchers. As detailed in the MPA, such assets are usually so large that they require transport by ship. This prevents their positioning by a defender in time for a surprise attack except if features permanently hosted such forces, and this did not occur during 1995–2015. And without such capabilities any land-based defending units would be vulnerable to unopposed destruction once their supporting air and naval assets had been driven off in the initial battle: they would have no means to attack any (E)MEZ force, which could destroy them at their leisure. In turn, while such missile launchers could be positioned by an aggressor on a feature to aid in the attack of a nearby AO, this is judged unlikely due to the risk of fratricide in a large-scale battle at the site, where forces may intertwine.

Also, increasing forces by basing aircraft rapidly flown to an island would be possible to affect battles. But analysis of imagery showed that between 1995–2015 no island had the appropriate hangar, maintenance, fuelling and arming facilities to make this feasible or a major contribution to balance of power calculations. Finally, the effects of patrol forces are not considered, noting their marginal combat ability.

#### *Considering the Circumstances of the Initial Battle at CoG and Secondary Sites*

Under the 5-7-7 model, the power assessment process focuses on when the initial battle happens between aggressors and defenders. In this dissertation, such a battle is considered to occur under different circumstances for AA/MEZ and EMEZ scenarios. For AA/MEZ, the battle occurs when the assault force approaches the AO. Then, defending naval and air units fight the attacker’s corresponding forces. If the aggressor loses, it withdraws, but if victorious, it embeds its control by landing its Marines and possibly fortifying the site and deploying heavy weapons – making any attempt to recapture the area by the defender much more costly. It is because of this that the defender is presumed to stand and fight: it is rational to do so.

In contrast, in EMEZ situations the initial battle is considered to occur later. In these scenarios the aggressor must hold on to the site with its naval and air forces for months, to protect new facilities as they are built and/or any civilian assets that begin to exploit the area, and to exert control in general. In this situation the defender has little to gain from standing fast. Instead, to maximise its strength (in alignment with the 5-7-7 model's assumptions) it is presumed to decline combat, wait for its adversary's forces to wane and its own to build, and then strike back powerfully with a surprise SD attack at the AO at a time of its choosing. And this is when the initial battle is taken to occur (with the EMEZ force still considered as the aggressor, and the SD force as the defender) for power assessment purposes.

#### *Considering Louisa Reef*

All the sites listed below are controlled by a claimant, providing a natural "counterpart" to allow for balance-of-power assessments for an aggressor, except Louisa Reef – as no structures exist on the site nor is there evidence for persistent patrols by any state. However, for the Reef, Brunei was considered to be (and is treated as) the defending force for power assessment purposes.

This reflects that Louisa Reef is the sole feature claimed by Brunei, providing the nation the greatest incentive to defend it. In turn other countries, while too claiming the Reef, already have other possessions (including CoG) that serve their purposes. Hence, they were considered less likely to defend the Reef. Also, Brunei was treated as the rightful holder of rights granted by UNCLOS related to Louisa Reef's TS, noting the site is uncontrolled but within Brunei's EEZ.

Table 6.0: Key Areas of Operation, National Objectives and Operational Needs in the South China Sea

	Geographic Feature and Type														
	Woody Island (CoG)	Spratly Island (CoG)	Fiery Cross (Sec B/A)*	Subi Reef (Sec B/A)*	Mischief Reef (Sec B/A)*	Thitu Island (CoG)	Itu Aba Island (CoG)	Swallow Reef (CoG)	Amboyna Cay (Sec A)	Barque Canada Reef (Sec B)	Commodore Reef (Sec B)	Louisa Reef (Sec B)	Pratas Islands (CoG)	Macclesfield Bank (Sec B)	Scarborough Shoal (Sec B)
Claimed	CHN, TWN, VNM	CHN, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, TWN, VNM, MLY	CHN, MLY, PHL, TWN, VNM	CHN, MLY, PHL, TWN, VNM	CHN, MLY, PHL, TWN, VNM	CHN, TWN, VNM, MLY, BRN	CHN, TWN	CHN, TWN	CHN, PHL, TWN
Controlled	CHN	VNM	CHN	CHN	CHN	PHL	TWN	MLY	VNM	VNM	PHL	N/A	TWN	CHN	PHL– 1995–2011 CHN – 2012+
Objective and Need: BRN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Control (EMEZ)/ Def (SD)	N/A	N/A	N/A
Objective and Need: CHN	Defend (SD)	Conquer (AA/MEZ)	Defend (SD EMEZ/SD)	Defend (SD EMEZ/SD)	Defend (SD EMEZ/SD)	Conquer (AA/MEZ)	Conquer (AA/MEZ)	Conquer (AA/MEZ)	N/A (focus on CoG)	N/A (focus on CoG)	N/A (focus on CoG)	Control (EMEZ)	Conquer (AA/MEZ)	Defend (SD)	Control 1995-2011 (EMEZ) Defend (SD EMEZ) 2012+
Objective and Need: MLY	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Defend (SD)	Conquer (AA/MEZ)	Conquer (EMEZ)	Conquer (EMEZ)	Control (EMEZ)	N/A	N/A	N/A
Objective and Need: PHL	N/A	N/A	Conquer (EMEZ-AA/MEZ)	Conquer (EMEZ-AA/MEZ)	Conquer (EMEZ-AA/MEZ)	Defend (SD)	N/A # (TWN allied US)	N/A	Conquer (AA/MEZ)	Conquer (EMEZ)	Defend (SD)	N/A	N/A	N/A	Defend (SD EMEZ) 19952011 Control (EMEZ) 2012+
Objective and Need: TWN	Conquer (AA/MEZ)	Conquer (AA/MEZ)	Conquer (EMEZ-AA/MEZ)	Conquer (EMEZ-AA/MEZ)	Conquer (EMEZ-AA/MEZ)	N/A # (PHL allied US)	Defend (SD)	Conquer (AA/MEZ)	N/A (focus on CoG)	N/A (focus on CoG)	N/A (focus on CoG)	Control (EMEZ)	Defend (SD)	Control (EMEZ)	Control (EMEZ) 2012+
Objective and Need: VNM	Conquer (AA/MEZ)	Defend (SD)	Conquer (EMEZ-AA/MEZ)	Conquer (EMEZ-AA/MEZ)	Conquer (EMEZ-AA/MEZ)	Conquer (AA/MEZ)	Conquer (AA/MEZ)	Conquer (AA/MEZ)	Defend (SD)	Defend (SD)	N/A (focus on CoG)	Control (EMEZ)	N/A	N/A	N/A

Notes: Country Codes – BRN: Brunei; CHN: China; MLY: Malaysia; PHL: Philippines; TWN: Taiwan; VNM: Vietnam. Feature Type: CoG: Centre of Gravity; Sec-A: Secondary, Amphibious Assault Possible, Sec-B: Secondary, construction effort or naval patrolling required; N/A: Not Applicable. \*These Reefs were unsuitable for amphibious assault before 2015 and are included as additional data points to assess state behaviour. # Both Taiwan and Philippines have defensive security arrangements with the US, so are considered not to target one another's outposts. Dates in various entries and associated changes of objectives reflect changes of control discussed in Section III.



## **Step Two – Identification of Applicable Forces**

Nations' assessed Operational Suitability and Resilience at each AO depend on what portion of their military inventories they can project to each location. The ability of these forces to generate necessary effects can then be assessed.

As discussed in Chapter Five, to identify the applicable forces at each location is a three-part process. As this is done in detail in the MPA and the results reported in Section III of this chapter, the discussion below focusses on a brief overview and various scenario-specific assumptions employed to assess forces.

### **Assumptions Regarding Defence Responsibilities**

Firstly, the fraction of a nation's armed forces considered to be available is determined, noting that defence responsibilities may prevent some units from being assigned to some contingencies.

For the SCS, all nations barring China and the US are presumed to use their entire armed forces. This reflects that the smaller nations lacked more important maritime contingencies that might keep their units away and also that their armed forces were sufficiently minor as to need to operate cohesively to maximise their chances of victory. This assumption might seem unusual for Taiwan, which could be argued to wish to retain its long-range forces to help defend its mainland from Beijing. However, Taipei is presumed to be content to allow its domestic security to rely on its substantial short-ranged coastal defence and air forces, and US support; hence, its large ocean-going fleet is available for SCS offensive operations.

In turn, for China and the US respectively, only the forces of the SSF and the 7th Fleet based at Yokosuka were considered. For China, this is due to the SSF being the force with geographic responsibility for the area; Beijing's other fleets having their own key responsibilities (notably, threatening Taiwan); and the SSF itself (comprised of a great many PLAN maritime and PLANAF assets) being large and

powerful enough that it has a robust chance of success against most adversaries without reinforcement.<sup>229</sup> For the US, the 7th Fleet is the only major force permanently close enough to the SCS to respond to a surprise attack scenario.

Also, for US forces, these are considered only in relation to disputed features involving the Philippines, because it is the only claimant nation with which Washington has a defence alliance. American involvement is factored into those situations where Filipino troops are likely stationed (Thitu Island and Commodore Reef) and hence where any attack on them would trigger a US response under the *Mutual Defense Treaty Between the United States and the Republic of the Philippines* (1951). As America takes no position on the ownership of the disputed features (Rosen, 2014), the United States Navy (USN) is considered as not involved in any Filipino efforts to conquer territory claimed by Manila.

### **Consideration of Maintenance and Training Effects on Force Totals**

Secondly, of the available forces it is then necessary to determine what proportion of these a nation could practically apply to an operational theatre. This is done by considering the overall fraction of forces available to a state and multiplying them by two-thirds for aggressors in AA/MEZ operations and one-third for SD defenders.

However, these totals are reversed for EMEZ situations, with an attacker's forces multiplied by one-third and a defender's by two-thirds (written as a SD EMEZ situation for the latter). This is designed to reflect a more realistic allocation of forces, noting that in an EMEZ scenario an aggressor will likely require months to develop a feature to the point where it can host land-based defences – if it chooses to do so at all. In such situations, the defender logically has more motivation to (and indeed is presumed to) withdraw its units. It can then afford to wait, building up its own forces to two-thirds of its overall strength while those of the “new” occupier

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<sup>229</sup> Certain other units were also deliberately excised. For example, the Chinese Air Force has aircraft with the range to be involved in SCS operations. But these assets have other responsibilities, notably the defence of mainland China, and hence were excluded. These issues are discussed in Annex B.

slowly draw down to the persistently maintainable one-third. The original defender can then launch a SD strike, aiming to destroy the vital units and their escorts.

Of note, because of the above AA/MEZ operations are easier for attackers to conduct – it is easier for them to achieve a favourable balance of power. This means that when features such as Subi, Mischief, and Fiery Cross Reefs are developed to the extent such an attack becomes feasible, different behaviours might arise from other claimant nations, depending on their motivations.

### **Consideration of Range Effects**

Thirdly, of the available forces a check is made to see which have the range capabilities to reach the area. These distance requirements are developed by comparing the locations of AO with the nearest bases used by responsible national forces. Those platforms unable to travel these ranges are set aside, with the remainder forming the applicable forces. Technical sources (mainly *The Military Balance* and the *Janes* series) are discussed in detail in the MPA.

### **Step Three – Operational Suitability and Resilience Assessment**

The applicable forces at each location are then assessed in terms of the operational effects that they can generate with respect to the needs identified in Step One. Nations that cannot achieve these effects are rated operationally unsuitable and militarily inferior to their competitor (unless the adversary too is unsuitable, in which case neither has superiority), with no further assessment done for that year. Practically, such outcomes only ever occur for SC as SD requirements are so low. Should a force be rated suitable, its Resilience is then judged by identifying the minimum number of assets it could lose before a needed operational effect could no longer be achieved. Again, SC situations had the weakest Resilience scores due to needing to generate the broadest range of effects. Also, as noted in the MPA, CR, economic, and patrol assets were not counted for Resilience as such units do not contribute to a needed capability effect, and/or are treated as easily replaceable.

#### **Step Four – Comparative Forces Assessment**

In this step, the five factors of Asymmetry, Modernity, Personnel, Preponderance, and Geography are examined to determine where relative advantages exist, based on the data in the MPA. For geography effects in the SCS, in AA/MEZ situations the terrain is assessed to favour the defence for reasons including that an amphibious attacker can clearly be sunk while a defender cannot. In EMEZ situations, with one state attacking the other's outposts or naval patrols, geography provides no particular benefit to either: an outpost can be easily destroyed by cannon or missile fire, and patrols must face each other equally on the open sea.

#### **Step Five – Integrated Net Assessment**

This step conducts the individual summation and then comparative integrated assessment for every claimant's relative military power at every location for every year under consideration. The means of summary assessment are those discussed in Chapter Five, with each Integrated Assessment in the MPA supported by a written description to capture any qualitative factors that, in the analyst's judgement, affected the outcome beyond the basic data presented.

#### **Realist Behavioural Prediction Assessment**

Finally, the Integrated Assessment is used to generate broad predicted behaviours for the theories, using [Table 6.1](#) below copied from Chapter Five ([Table 5.4](#)). As all the information to populate [Table 6.1](#) and generate the behavioural predictions is in the MPA, these forecasts are also conducted and captured in that database. Also, in the SCS multiple states often contest the same piece of territory, even though the site is only controlled by one nation at any one time. Hence at each location every aggressor will have one rating per year of its position in the military balance, but a defender will have multiple ratings depending on which states threaten it.

Table 6.1: Military Power-Realist Behaviour Assessment Table

Power Inferiority	Disadv'd Parity	Rough Parity	Advant'd Parity	Power Superiority
<p><b>Irrational State:</b> Initiate and respond with distinctive coercive actions.</p> <p><b>OR/DR State:</b> Focus on Cooperative resolution.</p> <p><b>OR/DR State:</b> Defend in face of military attack.</p>	<p><b>OR(PTT):</b> Focus on initiating and responding with escalating distinctive coercive <u>(para)militarised</u> strategies, including <b>major conquest</b>.</p> <p><b>OR(BOP):</b> Focus on initiating and responding with escalating distinctive coercive <u>non-(para)militarised</u> strategies.</p>		<p><b>OR(PTT):</b> Focus on initiating and responding with escalating distinctive coercive <u>non-(para)militarised</u> strategies.</p> <p><b>OR(BOP):</b> Focus on initiating and responding with escalating distinctive coercive <u>(para)militarised</u> strategies, including <b>major conquest</b>.</p>	
	<p><b>DR(GS)BOP:</b> Focus on initiating, and responding in kind to, normal coercive or cooperative strategies. Will use strongly mixed strategies. Will respond in kind to distinctive coercion in defence; but show restraint in offence.</p> <p><b>DR(GS)PTT:</b> As for DR(GS)PTT at power superiority, but may initiate and respond with escalating distinctive coercive strategies, including <b>minor conquest</b>, in offence should normal strategies fail.</p>		<p><b>DR(GS)BOP:</b> Same as for DR(GS)BOP at power parity, but may initiate and respond with escalating distinctive coercive strategies, including <b>minor conquest</b>, in offence should normal strategies fail.</p> <p><b>DR(GS)PTT:</b> Focus on initiating, and responding in kind to, normal coercive or cooperative strategies. Will use strongly mixed strategies. Will respond in kind to distinctive coercion in defence; but show restraint in offence.</p>	
	<p><b>DR(GLS):</b> Focus on initiating and escalating cooperative strategies, including to distinctive levels, and show restraint in response to coercion.</p>			
<p><b>OR/DR State:</b> Focus on general control-enhancing behaviours in occupied territories.</p>				

Notes: Offensive Realism (OR), Defensive Realism (DR), Power Transition Theory (PTT), Balance of Power Theory (BOP), Gains Sensitive (GS), Gains Less-Sensitive (GLS). Grey cells are actions unsuited to differentiating state-types. Beyond the actions above, an OR state should consistently initiate new disputes and pursue existing offensive ones. A DR(GLS) state should not initiate new disputes, and may allow existing offensive ones to lie fallow. A DR(GS) state may occasionally initiate new disputes, and intermittently pursue existing offensive ones.

### Section III: Reporting of Power Assessment Results

Clearly, the above process generates a wealth of data regarding a diverse array of relevant military power factors in the SCS. However, the most dissertation-relevant

outputs of the model's application are the actual Integrated Assessments, representing each nation's position in the balance of military power at each location, and the associated behavioural predictions. These are hence the focus of reporting below. Also provided is a brief overview of each country's claims; operational needs; applicable military forces, with a summary of their development with respect to other competitors; and any noteworthy range effects that have constrained its military power.

In terms of format, each nation's entry begins with a country overview, in the format described above, after which its Integrated Assessment is presented. This is comprised firstly of a brief description of how a nation's military power has waxed or waned with respect to its competitors. But the heart of the information is presented in an accompanying summary table. This shows the state's operational need at every AO, each area's distance from its key bases, and the state's annual Integrated Assessment outcome at each AO against each competitor.

These tables, together, capture the 1,371 individual Integrated Assessment outcomes that reflect the balance of power between various competing states at all contested features over the 21-year period. This total does not include any instances of comparing the Philippines to Taiwan, as neither is assumed to target the other. However, cells are still reserved in the tables to capture the "fact of" these nations having competing claims, but with the power rating listed as "N/A".

The behavioural predictions under the various theories for each state, at each location, for every year can be determined by cross-referencing the country's annual power rating with the Realist Assessment tool at [Table 6.1](#). These are also provided in written summary form in the MPA, focussing on the long periods when states' power positions did not alter, or when they moved sufficiently to lead to expectations of behavioural change (predicted to occur with movements from clear inferiority or superiority to some form of parity, or vice versa). For illustrative purposes, the written summary for Brunei is provided in its entry below; however, this is not done for later nations as the content is broadly similar and repetitive.

## **Key Findings**

Perhaps the most significant issue from the power review is that it emphasises the lack of a linear correlation between overall armed strength and military power at particular locations. As previously discussed, military power is operationally specific: it must be judged in terms of what nations seek to achieve and where, in competition with each other using the forces they can muster there. While many states had wide disparities in their overall armed forces to begin with, and these generally grew over time, notably with respect to China's rapid military development, this did not translate into immediate superiority for the side with the larger navy or air force. In particular, even smaller nations like Malaysia and Vietnam would be superior, when engaging in SD close to home, than much overall stronger states such as Taiwan or China if these competitors were to attempt AA/MEZ or EMEZ operations distant from their own bases.

In turn, this leads to differing predictions for behaviour depending on the scenario, location and states involved. Of course, this must be discussed on a state-by-state and location-by-location basis. This is now done below.

## **Brunei**

Brunei has the smallest claim to the SCS, a 370 km EEZ from its mainland shoreline as afforded by UNCLOS. This contains one main feature, the uninhabitable Louisa Reef, which is claimed by Brunei; the Reef has never have been occupied by any state (Roach, 2014). Brunei's claim is contested by China, Taiwan, Vietnam and Malaysia.<sup>230</sup> None of Brunei's claim contests any feature occupied by another nation. As noted previously, despite the Reef being unoccupied (by either an outpost or permanent patrols), it is treated as being 'defended' by Brunei for assessment purposes as Bandar Sari Begawan is considered most likely to defend the site from an attempt at control by other nations. Brunei is also treated as having

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<sup>230</sup> It is possible that Malaysia has withdrawn its claim to the Reef (Roach, 2014, p. 39).

relevant UNCLOS maritime zone rights (i.e. use of the Reef's TS) due to the site being uncontrolled but within Brunei's EEZ.

Brunei's national objectives are hence to defend its maritime claim and Louisa Reef. This leads to operational needs for EMEZ, should it seek to occupy the Reef or permanently patrol it, and SD EMEZ to defend this against other nations. The military responsibility for doing so resides with the Royal Brunei Air Force (RBAF) and the Royal Brunei Navy (RBN), which are the smallest armed forces of any of the claimant states. The RBAF and RBN's efforts are unaffected by range issues due to Louisa Reef's short distance (250 km) from the main base at Maura. A figure showing these locations is in the MPA, with this information also captured in the Integrated Assessment table below.

In terms of force development, Brunei's Order of Battle (ORBAT) did improve during the period with the introduction of new and more potent *Darusalaam* ships during 2011–2014 to replace the elderly *Waspada* class vessels. However, these changes were substantially outpaced by enhancements engaged in by all of Brunei's potential adversaries. From a stand-alone perspective, overall Brunei's armed forces are assessed as being operationally unsuitable during 1995–2015 to achieve its EMEZ objectives but suitable for its SD tasks. This is because the RBN forces lack the necessary AAW capability to enforce an EMEZ against the other four claimants' air assets. However, the RBN does have a reasonably effective SD capability.

### **Integrated Net Assessments**

To assess Brunei's behaviour across the various offensive and defensive scenarios generates a need for 105 Integrated Assessments, with the outcomes of these shown in [Table 6.2](#). But in overview, due to Brunei's military improvements being outpaced by its competitors, the armed forces were less powerful in 2015 than in 1995. In particular, being unsuitable to conduct SC during 1995–2015, Brunei is assessed as clearly inferior to the other claimants should it seek to conduct EMEZ operations at Louisa Reef. Brunei is also clearly outmatched even in defensive SD



missions against China, Malaysia and Taiwan – these nations can apply a sufficient weight of force that surpasses Brunei’s resources on almost every military power factor. The sole exception is Vietnam where, due to Hanoi being unable to enforce a MEZ until 2004, until then Brunei is judged to have parity. After this Brunei has disadvantaged parity until 2012, when new Vietnamese ships render it inferior.

### **Predicted Behaviours Overview**

Based on these power assessments, predictions can be made about Brunei’s behaviour over time on an annual basis. This is done by correlating the Integrated Assessment outcome with the predicted behaviours summary at [Table 6.1](#). This is now also done in written form below.

#### Defensive Realism (Gains Less Sensitive)

Offensively, Brunei should not seek to initiate confrontations at Louisa Reef. It should, with all states, focus on either allowing the issue of sovereignty to lie fallow or initiate and escalate cooperative dispute resolution strategies, and definitely not initiate distinctive (para)militarisation or attempts at conquest. Defensively, Brunei should engage in self-initiated (i.e. without reference to the behaviours of other nations) generic normal control-enforcing behaviours (including military ones) such as printing maps and making statements of sovereignty, though avoiding initiating distinctive coercion. Of note, since Brunei does not actually control the Reef, such behaviours can equally be classed as offensive, although either way the focus will remain on not engaging in distinctively coercive actions.

When responding to other states’ cooperative or confrontational initiatives, Brunei should seek to de-escalate confrontations if and when these occur, focus on cooperative dispute resolution strategies, and seek to build distinctive cooperation. For defensive reactions, Brunei may infrequently respond to non-(para)militarised coercion with increased coercion, such as escalating to a formal protest in response to some declaratory action, but it should avoid escalating to any form of distinctive

coercion, let alone a (para)militarised threat. Also, it will respond to distinctive (para)militarised strategies in kind, though with a decreased level of coercion, seeking to de-escalate the confrontation, but will defend itself strongly if attacked. Lastly, it should also aim to avoid lethal or potentially lethal force against poachers.

#### Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory

Offensively, as a clearly inferior power from an EMEZ perspective, Brunei should not seek to initiate confrontations by building outposts on Louisa Reef. It should behave as a weak state with all nations, effectively acting identically to the DR(GLS) entry.

Defensively, being clearly inferior to China, Malaysia, Taiwan and, after 2012, Vietnam, Brunei should likewise behave as weak state. This includes for the types of self-initiated control-enforcing actions it might engage in. But regarding Vietnam, during the period Brunei has parity, it should be willing to respond to Hanoi with normal cooperation or coercion in kind, potentially (de)escalating its response as it sees fit. Brunei should also be willing to offer Vietnam up to practical normal economic, paramilitary or military cooperative measures regarding the Reef. But Brunei should demur most offers of distinctive cooperation and match forms of distinctive coercion in kind, including the threat or use of (para)military force, though aiming to ultimately decrease level of tension over time.

The exceptions are, firstly, if towards Vietnam Brunei is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently respond by initiating non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – although it will seek to de-escalate if these do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing defensive confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if the aggressor matches its coercion, even progressing to militarised strategies if at an opportune balance of power. Regardless of either approach, it will of course defend itself strongly if attacked. And in the defence of its territory against

poachers, it should be willing to occasionally use potentially lethal force, such as warning shots, particularly as part of an escalation following less intense measures.

For theory-specific differences; when responding to Hanoi under BOP, since parity is not an opportune moment for aggression, Brunei *should not initiate or escalate distinctive paramilitary or militarised coercion* – only engaging in such strategies in response to their use by Vietnam. But under PTT, Brunei *may indeed respond by initiating such activities* (but is far from certain to), to head off further threats.

### Offensive Realism – Balance of Power/Power Transition Theory

As a clearly inferior power from an offensive EMEZ perspective, Brunei should not seek to initiate confrontations by engaging in distinctive coercion at Louisa Reef. It should behave as a weak state. Defensively, it should likewise behave as a weak state towards China, Malaysia, Taiwan and, after 2012, Vietnam. This includes for the types of self-initiated control-enforcing actions it might engage in.

During the period when Brunei has parity with Vietnam, when responding to efforts by Hanoi to resolve the dispute, Brunei should strongly favour escalating confrontational strategies. In particular, it should respond in kind and with escalation to the threat or use of distinctive coerce strategies against it, and be readily willing to use warning shots or lethal force in defence of its territory against Vietnamese poachers. It will of course also defend itself strongly if attacked. During parity Brunei should offer or accept no more than limited cooperation.

In terms of theory-specific behavioural differences; under BOP, when responding to anything short of distinctive (para)militarisation from Hanoi, Brunei should react with escalating *non-(para)military* distinctive coercive strategies (i.e. up to economic and diplomatic measures), while seeking to avoid being the first to begin distinctive (para)militarisation. However, under PTT, Brunei should react with escalating *(para)militarised* distinctive coercive strategies, including crisis initiation. Of course, Brunei should behave as a weak state towards Vietnam from 2012.

Table 6.2: Brunei Power Summary

		Geographic Feature and Type				
		Louisa Reef (Sec-B)				
Claimed		BRN, MLY, CHN, TWN, VNM				
Controlled		N/A				
Distance from Bases		250 km				
Brunei Operational Need		EMEZ	SD EMEZ - MLY	SD EMEZ - CHN	SD EMEZ - TWN	SD EMEZ - VNM
Integrated Military Power Assessment	1995					RP
	1996					RP
	1997					RP
	1998					RP
	1999					RP
	2000					RP
	2001					RP
	2002					RP
	2003					RP
	2004					DP
	2005					DP
	2006					DP
	2007					DP
	2008					DP
	2009					DP
	2010					DP
	2011					DP
2012						
2013						
2014						
2015						

Notes: AO distances from Labuan Naval Bases. Rating Scale: I: Inferior; DP: Disadvantaged Parity; RP: Rough Parity; AP: Advantaged Parity; S: Superior; N/A: Not Applicable. Feature Type: CoG: Centre of Gravity; Sec-A: Secondary, Amphibious Assault Possible, Sec-B: Secondary, construction effort or naval patrolling required. Total number of assessments: 105.

## **The People's Republic of China (China)**

China has, with Taiwan, the largest claim in the SCS, encompassing all the geographical features and large swaths of ocean territory beyond even that afforded by UNCLOS. This claim, and Beijing's occupied features within it, are contested in whole or in part by every other nation. China occupies close to thirty features in the Paracels and Spratlys, together with controlling Macclesfield Bank and (from 2012) Scarborough Shoal using naval patrols. China thus has CoG to defend at Woody Island, and secondary targets suitable for AA/MEZ attack at Subi, Mischief, and Fiery Cross Reefs from 2015, when land reclamation activities made them tempting targets. China also has secondary targets to defend against EMEZ attack at Macclesfield Bank and the above Reefs<sup>231</sup> before 2015; and also at Scarborough Shoal from 2013.<sup>232</sup> In turn, the various other states have in total several dozen occupied features claimed by China, including CoG at Pratas and Itu Aba Islands (Taiwan), Spratly Island (Vietnam), Swallow Reef (Malaysia) and Thitu Island (the Philippines) (Pedrozo, 2014). Secondary targets are Scarborough Shoal (before 2012) and Brunei's Louisa Reef.

Beijing's national objectives are hence to defend its maritime borders and occupied features while ejecting competing claimants from territories that it asserts are its own. This leads to operational needs for AA/MEZ, EMEZ and SD operations across 12 AO.

As noted above, the military force considered when assessing China's military power at the AO is the SSF. This fleet, which has assets including ships, submarines and aircraft, has responsibility for the SCS and is one of the most substantial formations among all the claimant nations.

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<sup>231</sup> In reality these Reefs would have been poor targets before 2015 but are included as useful data points to assess if other nations' actions with respect to them changed as balances of power shifted.

<sup>232</sup> For counting purposes, Mischief Reef is treated as Chinese controlled from 1995. Scarborough Shoal is classed as an offensive objective for Beijing to 2012 (inclusive), and defensive from 2013.

Regarding issues of range, the SSF's key bases are 300 km–1900 km from the various AO. This allows all major naval units to participate in operations but smaller craft are limited to closer sites due to seakeeping issues. Also, these distances impose limitations on the ability of aircraft to support operations, with quantities of long-range assets not entering service until 2004. A figure showing key locations is in the MPA, and distance information is also captured in the Integrated Assessment table below, referring to AO ranges from the SSF's closest airbase at Lingshui on Hainan Island.

In terms of development, the SSF was a particular beneficiary of improvements affecting the Chinese armed forces from around 1996. In short, the entire PLAN and PLANAF saw extensive enhancements across all the military power factors identified by this dissertation. In particular, key equipment improvements included Type 52C and 52D destroyers, with advanced ASW and AAW capabilities, and long-range JH-7/A multi-role and J-11 fighter aircraft. These changes over time fundamentally outpaced similar efforts attempted by most of China's competitors. Indeed, only USN and Filipino forces stayed broadly unchanged, although considering the USN's substantial potency China never gains clear superiority over it at the contested AO in the SCS.

From a stand-alone perspective, the SSF is assessed as being operationally suitable through the study period to conduct SD operations at all sites but only capable of conducting MEZ missions in all AO from about 2005. This reflects that at least four locations (Itu Aba, Pratas, Spratly, and Thitu Islands) are defended by forces equipped with submarine or air capabilities or both, and the SSF did not demonstrate an ASW SC capability deployable to all these sites before 2000 and AAW SC capability before 2004. However, the force always maintained a robust air- and especially ship-launched ASuW missile capability, providing it with the potential to credibly threaten attackers with a strong SD capability.

## Integrated Net Assessments Overview

To assess China's behaviour across the various offensive and defensive scenarios generates a need for 402 Integrated Assessments,<sup>233</sup> with the outcomes of these shown in [Table 6.3](#). But in overview, from a relative power perspective, the improvements outlined above result in China moving from a period of frequent inferiority to potential opponents to meeting and then outmatching their capabilities, and doing so for increasingly challenging scenarios. Hence Beijing's overall position much improved over 21 years for both offensive and defensive missions, including against Taiwan.<sup>234</sup>

As a special note, while China is treated as being in control of Mischief Reef from 1 January 1995, and hence to have defensive aims there, in the MPA a power assessment was also conducted for a Chinese EMEZ attack on the site in late 1994 or early 1995. This was to support the consideration of Beijing's action to seize the Reef from Manila. The result of this assessment was that China acted at a time of pronounced power superiority, based on the assumption that Beijing (correctly) assessed it was only facing Manila's forces. If USN forces had been expected, then Beijing would have been attacking at a period of weakness, an irrational behaviour that would have removed the incident from the consideration of state-types.

## Predicted Behaviours

Based on these power assessments, predictions can be made about China's behaviour over time on an annual basis. This is done by correlating the Integrated Assessment outcome with the predicted behaviours summary at [Table 6.1](#).

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<sup>233</sup> For the avoidance of doubt, this number does not include, of course, the years where Scarborough Shoal was not occupied by Taiwan, although these are shown in Table 6.3 listed as "N/A" to reserve an appropriate column for displaying the China-Taiwan power balance from 2013.

<sup>234</sup> The inclusion of Taiwan might be debated as both nations have mainly supported or at least not conflicted with one another's claims. However, this dissertation assesses the chance of conflict as real as it would both provide Beijing with leverage to pressure Taipei and/or allow it to gain power directly, as predicted by OR.

Table 6.3: China Power Summary

Geographic Feature and Type																				
	Woody Island (CoG)	Pratas Island (CoG)	M'field Bank (Sec B)	Scarborough Shoal (Sec B)*	Subi Reef (Sec B to 2014; Sec A in 2015)			Thitu Island (CoG)*	Itu Aba Island (CoG)	Fiery Cross Reef (Sec B to 2014; Sec A in 2015)	Mischief Reef (Sec B to 2014; Sec A in 2015)**			Spratly Island (CoG)	Swallow Reef (CoG)	Louisa Reef (Sec B)				
Claimed	CHN, TWN, VNM	CHN, TWN	CHN, TWN	CHN, PHL, TWN	CHN, PHL, TWN, VNM			CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM			CHN, PHL, TWN, VNM	CHN, TWN, VNM	CHN, MLY, TWN, VNM	BRN, CHN, MLY, TWN, VNM				
Controlled	CHN	TWN	CHN	CHN	CHN			PHL	TWN	CHN			CHN	VNM	MLY	N/A				
Distance from Bases	310	660	550	900	950			950	1000	1050			1100	1100	1300	1400				
Chinese Operational Need	SD - TWN	SD - VNM	AA/MEZ	SD EMEZ	EMEZ / SD EMEZ - PHL*	SD EMEZ / SD - PHL	SD EMEZ / SD - TWN	SD EMEZ / SD - VNM	AA/ MEZ - USN*	AA/ MEZ	SD EMEZ / SD - PHL	SD EMEZ / SD - TWN	SD EMEZ / SD - VNM	SD EMEZ / SD - PHL	SD EMEZ / SD - TWN	SD EMEZ / SD - VNM	AA/ MEZ	AA/ MEZ	EMEZ	
1995	DP	S	I	I	S	N/A	S	RP	S	I	I	S	RP	S	S	RP	S	I	I	S
1996	DP	S	I	I	S	N/A	S	RP	S	I	I	S	RP	S	S	RP	S	I	I	S
1997	DP	S	I	I	S	N/A	S	RP	S	I	I	S	RP	S	S	RP	S	I	I	S
1998	DP	S	I	I	S	N/A	S	RP	S	I	I	S	RP	S	S	RP	S	I	I	S
1999	DP	S	I	I	S	N/A	S	RP	S	I	I	S	RP	S	S	RP	S	I	I	S
2000	DP	S	I	DP	S	N/A	S	AP	S	I	RP	S	AP	S	S	AP	S	I	I	S
2001	DP	S	I	DP	S	N/A	S	AP	S	I	RP	S	AP	S	S	AP	S	I	I	S
2002	DP	S	I	DP	S	N/A	S	AP	S	I	RP	S	AP	S	S	AP	S	I	I	S



2003	DP	S	I	DP	S	N/A	S	AP	S	I	RP	S	AP	S	S	AP	S	I	I	S
2004	DP	S	DP	RP	S	N/A	S	AP	S	I	RP	S	AP	S	S	AP	S	DP	RP	S
2005	RP	S	DP	RP	S	N/A	S	AP	S	I	AP	S	AP	S	S	AP	S	DP	RP	S
2006	RP	S	DP	RP	S	N/A	S	RP	S	DP	AP	S	RP	S	S	RP	S	RP	AP	S
2007	RP	S	DP	RP	S	N/A	S	RP	S	DP	AP	S	RP	S	S	RP	S	RP	AP	S
2008	RP	S	DP	AP	S	N/A	S	AP	S	RP	AP	S	AP	S	S	AP	S	RP	AP	S
2009	RP	S	DP	AP	S	N/A	S	AP	S	RP	AP	S	AP	S	S	AP	S	RP	AP	S
2010	RP	S	DP	AP	S	N/A	S	AP	S	RP	AP	S	AP	S	S	AP	S	AP	S	S
2011	RP	S	DP	AP	S	N/A	S	AP	S	RP	AP	S	AP	S	S	AP	S	AP	S	S
2012	RP	S	RP	AP	S	N/A	S	AP	S	RP	AP	S	AP	S	S	AP	S	S	S	S
2013	AP	S	RP	S	S	S	S	S	S	RP	AP	S	S	S	S	S	S	S	S	S
2014	AP	S	RP	S	S	S	S	S	S	RP	AP	S	S	S	S	S	S	S	S	S
2015	AP	S	RP	S	S	S	S	AP	S	RP	AP	S	AP	S	S	AP	S	S	S	S

Notes: AO distances from Lingshui airbase. Rating Scale: I: Inferior; DP: Disadvantaged Parity; RP: Rough Parity; AP: Advantaged Parity; S: Superior; N/A: Not Applicable. Feature Type: CoG: Centre of Gravity; Sec-A: Secondary, Amphibious Assault Possible, Sec-B: Secondary, construction effort or naval patrolling required. \*At the uninhabited Scarborough Shoal, ratings are presented comparing Chinese forces to Filipino ones; however, the MPA also shows illustrative comparisons for Chinese forces facing USN defenders.. Once seized by China, the assessment compares Chinese defenders against Filipino attackers. Thitu Island reflects USN involvement. \*\*China is also assessed to have offensive EMEZ superiority when it seized Mischief Reef in late 1994 or early 1995. Total number of assessments: 402.

## Malaysia

Malaysia claims an area of the Spratlys that includes islands, reefs and rocks, and occupies five sites including a CoG at Swallow Reef (Roach, 2014). This claim is contested in whole by China, Taiwan, and Vietnam, requiring the defence of Swallow Reef in particular, and in part by the Philippines and Brunei – although as these nations do not claim Swallow Reef their targets are not considered. Also, Vietnam occupies two secondary features (Amboyna Cay and Barque Canada Reef) claimed by Malaysia, with the former suitable for amphibious assault. The Philippines occupies one secondary target (Commodore Reef) while Brunei claims one (Louisa Reef). Also, several of Malaysia's occupied features not including Swallow Reef are claimed by the Philippines, forming secondary targets for it to defend; however, these are not considered.

Malaysia's national objectives are hence to defend its maritime borders and occupied features while ejecting competing claimants from territory it asserts as its own. This leads to operational needs for AA/MEZ and EMEZ operations to conquer secondary targets and SD needs to protect Swallow Island. The military responsibility for doing so resides with the Royal Malaysian Air Force (RMAF) and Royal Malaysian Navy (RMN). These form a roughly mid-sized armed force compared to the other claimant states. Regarding issues of range, the RMN's key base is less than 400 km away from the most distant AO, with the RMAF's key bases 300 km–900 km from the locations. This allows all naval units to participate but does impose some limitations on the ability of aircraft to support operations, although this is to a degree ameliorated by Malaysia's limited in-flight refuelling capabilities. A figure with key locations is in the MPA. Distance information is also captured in the Integrated Assessment table below, referring to AO ranges from the RMAF's closest airbase at Labuan.

In terms of force development, Malaysia's ORBAT improved between 1995–2015, with the introduction of new long-range multi-role Su-30 and F/A-18 aircraft, improved surface ships and, from 2009, a submarine capability. These changes

exceeded improvements made by Brunei, matched those of Vietnam, but were outpaced by China and never came close to Taiwan or the USN's potency. Further, the RMN lost its heavy amphibious capability in 2010, preventing it from readily conducting AA/MEZ tasks. From a stand-alone perspective, Malaysia's armed forces are assessed as being operationally suitable to achieve its amphibious objectives until 2010, when the capability to conduct AA falls away, but the potential for EMEZ remains. The forces also remain suitable for its SD tasks across the entire period.

### **Integrated Net Assessments Overview**

To assess Malaysia's behaviour across the various offensive and defensive scenarios generates a need for 147 Integrated Assessments, with the outcomes of these shown in [Table 6.4](#). But in overview, from a relative power perspective, Malaysia began the study period able to achieve its offensive objectives against Brunei and Amboyna Cay (one of Vietnam's sites) and defensive ones against Vietnam and China, but clearly unable to defend against any Taiwanese attack or to seize Vietnam's Barque Canada Reef or the Philippine's Commodore Reef. While Malaysia did improve its armed forces from 1995–2015, these changes were generally insufficient to affect the balance of power against major nations or were outpaced by their military advances. Further, the loss of a heavy amphibious capability imposed a key capability gap from 2010. As a result, Malaysia was generally worse off in the SCS balance of power in 2015 than in 1995. Specifically, Malaysia retained clear superiority over Brunei and, defensively, against Vietnam and the Philippines. But regarding offensive operations, Malaysia remained inferior to the USN and Taiwan and lost its parity at Amboyna Cay with Vietnam. And against China, Malaysia's ability to defend Swallow Reef dropped from superiority to inferiority.

### **Predicted Behaviours Overview**

Based on these power assessments, predictions can be made about Malaysia's behaviour over time on an annual basis. This is done by correlating the Integrated Assessment outcome with the predicted behaviours summary at [Table 6.1](#).

Table 6.4: Malaysia Power Summary

	Geographic Feature and Type						
	Louisa Reef (Sec B)	Swallow Reef (CoG)			Commodore Reef (Sec B)	Barque Canada Reef (Sec B)	Amboyna Cay (Sec A)
Claimed	PRC, ROC, VNM, MLY, BRN	CHN, MLY, TWN, VNM			CHN, MLY, TWN, VNM	CHN, MLY, TWN, VNM	CHN, MLY, PHL, TWN, VNM
Controlled	N/A	MLY			PHL/USN*	VNM	VNM
Distance from Bases	250	280			330	390	390
Malaysian Operational need	EMEZ	SD - CHN	SD - TWN	SD - VNM	EMEZ	EMEZ	AA/MEZ
1995	S	S	I	S	I	I	DP
1996	S	S	I	S	I	I	DP
1997	S	S	I	S	I	I	DP
1998	S	S	I	S	I	I	DP
1999	S	S	I	S	I	I	DP
2000	S	S	I	S	I	I	DP
2001	S	S	I	S	I	I	DP
2002	S	S	I	S	I	I	DP
2003	S	S	I	S	I	I	DP
2004	S	RP	I	S	I	I	DP
2005	S	RP	I	S	I	I	DP
2006	S	DP	I	S	I	I	DP
2007	S	DP	I	S	I	I	DP

2008	S	DP	I	S	I	I	DP
2009	S	DP	I	S	I	I	DP
2010	S	I	I	S	I	I	I
2011	S	I	I	S	I	I	I
2012	S	I	I	S	I	I	I
2013	S	I	I	S	I	I	I
2014	S	I	I	S	I	I	I
2015	S	I	I	S	I	I	I

Notes: AO distances from Labuan bases. Rating Scale: I: Inferior; DP: Disadvantaged Parity; RP: Rough Parity; AP: Advantaged Parity; S: Superior; N/A: Not Applicable. Feature Type: CoG: Centre of Gravity; Sec-A: Secondary, Amphibious Assault Possible, Sec-B: Secondary, construction effort or naval patrolling required. \*Reflects USN involvement. Total number of assessments: 147.

## The Philippines and the United States

In the SCS the Philippines claims some 20 features in the Spratlys, with these considered by Manila to be part of a separate geographical formation it refers to as the Kalayaan Island Group (KIG), together with Scarborough Shoal (Rosen, 2014). Among these features, the Philippines' CoG is at Thitu Island; and while no outpost existed at Scarborough Shoal the feature was considered as de facto administered by Manila through ongoing patrols until its seizure by China in 2012 (Green et al., 2017). The Philippines' claims encompass a range of features controlled by other states, including one CoG at Itu Aba Island (Taiwan); Chinese-held features at Mischief,<sup>235</sup> Subi, and Fiery Cross Reefs; and an assortment of over 20 other small features occupied by these nations and also Vietnam (such as Amboyna Cay and Barque Canada Reef) and Malaysia (Rosen, 2014; Roach, 2014). In turn, the Philippines claims are contested in their entirety by China and Taiwan, with all of the KIG disputed by Vietnam (but not Scarborough Shoal), and the Philippine-controlled Commodore Reef in the Spratlys desired by Malaysia. Brunei's claim does not conflict with Manila's.

The Philippines' national objectives are hence to defend its maritime borders and occupied features while ejecting competing nations from territories it claims. This situation leads to operational needs for the Philippines for SD, in particular to defend Thitu Island, but also AA/MEZ to conquer Itu Aba and EMEZ to capture smaller disputed features controlled by China, Vietnam and Malaysia.<sup>236</sup> However, as noted previously, of the many secondary features claimed by Manila, only Mischief, Subi and Fiery Cross Reefs, and Amboyna Cay and Barque Canada Reef, are used to assess states' behaviour.

Of note, as Taiwan and the Philippines share the US as a security guarantor, Manila is considered not to attempt to capture Itu Aba. Likewise, the Philippines is unable

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<sup>235</sup> Occupied from the beginning of 1995, hence requiring recapturing from then on.

<sup>236</sup> As per the China entry, for counting purposes Scarborough Shoal is considered a defensive objective for Manila up to and including 2012, and then an offensive objective from 2013.

to conquer the various secondary features due to its armed forces being operationally unsuitable for conquest (discussed below). Hence, neither operations against Taiwan or these secondary features are considered in any detail; although for the latter behavioural predictions are still developed as the Philippines should act as a clearly inferior power.

The responsibility for these tasks would fall to the Philippine Navy (PN) and Philippine Air Force (PAF). But due to lacking any missile-armed ships or combat aircraft, neither of these forces meets the capability requirements for power assessment. Hence range issues are also moot. For reference, a figure showing AO distances from the main naval base at Cavite is in the MPA, with information also captured in the Integrated Assessment table below.

As noted above, 7th Fleet forces are considered when assessing power balances related to the Philippines as the US is obliged to come to Manila's defence (and vice versa) under the *Mutual Defense Treaty Between the United States and the Republic of the Philippines* (1951). These units are taken as only applying to defending territories where Filipino forces are typically stationed, namely Commodore Reef and Thitu Island. No US support to aggressive Filipino operations is presumed.

In turn, the 7th Fleet is typically comprised of an aircraft carrier, some 11 destroyers and cruisers and two submarines (United States Navy, 2017), with this force being one of the most powerful in the region. As these units have ranges of thousands of kilometres that easily compass the entire SCS, they have no range constraints.

For force development, the 7th Fleet's assets remained broadly stable across the period, comprising varying aircraft carriers over time (of the *Forrestal*, *Kitty Hawk*, and later *Nimitz* Classes); *Arleigh Burke* I and II and *Spruance* Class destroyers; and cruisers of the *California* and *Ticonderoga* Classes. The air wing of the various carriers comprised for the most part of different versions of F/A-18 *Hornet* aircraft. From a stand-alone perspective, the PN and PAF remained clearly inferior to all other nations from defensive and offensive perspectives, lacking the capability to

either attack features or protect them effectively. In turn, the USN remained entirely suitable for its SD role in defence of Thitu Island and Commodore Reef.

### **Integrated Net Assessments Overview**

To assess the Philippines' behaviour across the various offensive and defensive scenarios generates a need for 189 Integrated Assessments,<sup>237</sup> with the outcomes of these shown in [Table 6.5](#). But in overview, from a relative power perspective, the Philippines and USN commenced and ended the period being, respectively, dramatically weaker and stronger than most of their potential adversaries. While neither's forces changed much over this time, the original extent of their relative inferiority and superiority meant this did not affect their final position in the balance of power despite most other nations' improvements. The exception is China, whose dramatic enhancements moved Beijing from clear inferiority into closer parity with the US.

Due to the weakness of the PN and PAF in all offensive roles, for convenience all the secondary targets in the Spratly/KIG group of features are grouped into a single column in [Table 6.5](#), as Manila's inferiority is consistent regardless of the adversary or distance from bases.

### **Predicted Behaviours Overview**

Based on these power assessments, predictions can be made about the Philippines behaviour over time on an annual basis. This is done by correlating the Integrated Assessment outcome with the predicted behaviours summary at [Table 6.1](#).

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<sup>237</sup> This does not include any potential Philippines-Taiwan scenarios since these nations are not considered to threaten one another's features. But cells are reserved in the table to record the "fact of" the competing claims between Taipei and Manila, with those power balances recorded as "N/A".



Table 6.5: Philippines Power Summary

	Geographic Feature and Type							
	Scarborough Shoal (Sec B)		Thitu Island (CoG)			Itu Aba Island (CoG)	Commodore Reef (Sec B)	Assorted Spratly (KIG) Features (Various)**
Claimed	CHN, PHL, TWN,		CHN, PHL, TWN, VNM			CHN, PHL, TWN, VNM	CHN, MLY, PHL, TWN, VNM	CHN, VNM
Controlled	PHL (2012)/CHN +2012		PHL/USN*			TWN	PHL/USN*	Various
Average Distance Base	340		810			840	910	Various
Philippine Operational Need	SD CH Pre-2012/ EMEZ	SD TWN Pre-2012	SD - CHN	SD - TWN	SD - VNM	N/A	SD - MLY	Various AA/MEZ & EMEZ
1995	I	N/A	S	N/A	S	N/A	S	I
1996	I	N/A	S	N/A	S	N/A	S	I
1997	I	N/A	S	N/A	S	N/A	S	I
1998	I	N/A	S	N/A	S	N/A	S	I
1999	I	N/A	S	N/A	S	N/A	S	I
2000	I	N/A	S	N/A	S	N/A	S	I
2001	I	N/A	S	N/A	S	N/A	S	I
2002	I	N/A	S	N/A	S	N/A	S	I
2003	I	N/A	S	N/A	S	N/A	S	I

2004	I	N/A	S	N/A	S	N/A	S	I
2005	I	N/A	S	N/A	S	N/A	S	I
2006	I	N/A	AP	N/A	S	N/A	S	I
2007	I	N/A	AP	N/A	S	N/A	S	I
2008	I	N/A	RP	N/A	S	N/A	S	I
2009	I	N/A	RP	N/A	S	N/A	S	I
2010	I	N/A	RP	N/A	S	N/A	S	I
2011	I	N/A	RP	N/A	S	N/A	S	I
2012	I	N/A	RP	N/A	S	N/A	S	I
2013	I	N/A	RP	N/A	S	N/A	S	I
2014	I	N/A	RP	N/A	S	N/A	S	I
2015	I	N/A	RP	N/A	S	N/A	S	I

Notes: AO distances from Cavite naval base. Rating Scale: I: Inferior; DP: Disadvantaged Parity; RP: Rough Parity; AP: Advantaged Parity; S: Superior; N/A: Not Applicable. Feature Type: CoG: Centre of Gravity; Sec-A: Secondary, Amphibious Assault Possible, Sec-B: Secondary, construction effort or naval patrolling required. \*Reflects USN involvement. \*\*Mischief, Subi and Fiery Cross Reefs (controlled by China), and Barque Canada Reef and Amboyna Cay (controlled by Vietnam). Total number of assessments: 189.

## **The Republic of China (Taiwan)**

Taiwan, as with China, claims the largest area in the SCS, covering all the main groups of features, namely the Paracel, Spratly and Pratas Islands, Scarborough Shoal, and Macclesfield Bank. In these areas, Taiwan has CoG on Pratas Island and at Itu Aba in the Spratlys. Further, its claims encompass other nations' key facilities at Woody Island (China), Spratly Island (Vietnam), Thitu Island (the Philippines), and Swallow Reef (Malaysia). Taipei's asserted borders also encompass secondary targets at Brunei's claim to Louisa Reef and Subi, Mischief and Fiery Cross Reefs (China). In turn, Taiwan's claims are contested in whole by China, for the entirety of the Spratlys and Paracels by Vietnam, areas of the Spratlys and Scarborough Shoal by the Philippines, and some of the Spratlys by Malaysia and Brunei.

Taiwan's national objectives are hence to defend its maritime borders and occupied features while ejecting competing claimants from territories that it asserts are its own. These considerations lead to operational needs for SD to defend Taipei's CoG, AA/MEZ operations to conquer competitors nations' CoG, and EMEZ operations to gain control of Louisa Reef, Scarborough Shoal<sup>238</sup> and Macclesfield Bank. Taipei is not considered to attempt to attack the Philippines' Thitu Island or Scarborough Shoal since both Taiwan and Manila share the US as a security guarantor.

To address these needs falls to the Republic of China Air Force (RCAF) and the Republic of China Navy (ROCN), two very powerful forces. Regarding range, the AO are 400 km – 2000 km distant from the main ROCN and RCAF bases. These distances hampers the ability of smaller warships to reach these areas, or for most aircraft to be involved beyond the closest AO at Pratas Island, but are well within the capabilities of larger vessels and submarines. Of note, a figure with key locations is in the MPA, and distance information is also in the Integrated Assessment table below, showing AO ranges from Taiwan's main naval base at Zuoying.

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<sup>238</sup> In alignment with the China and Philippines entries, Scarborough Shoal is considered an offensive objective for Taiwan from 2013. Prior to this, Taipei is not considered to threaten the site, since it is controlled by Manila.

For force development, both services' ORBAT improved from 1995–2015, including large-scale modernisation and expansion of the ROCAF multi-role fighter force with F-16, *Mirage 2000-5*, and *Ching-Kuo* fighters. The ROCN replaced its older *Fu Yang*, *Po Yang* and *Kun Yang*-Class destroyers with *Chien Yang* and *Kee Lung* vessels, with the latter being equipped with long-range AAW missiles. These changes outpaced those of every competitor nation, with the exception of China. From a stand-alone perspective, the ROCN and ROCAF were assessed as being operationally suitable to meet the Taiwan's various needs from 1995–2015. This reflects that both services were relatively large, maintained advanced equipment, and had well-trained forces able to execute the full range of SD, AA/MEZ and EMEZ missions.

### **Integrated Net Assessments Overview**

To assess Taiwan's behaviour across the various offensive and defensive scenarios generates a need for 234 Integrated Assessments,<sup>239</sup> with the outcomes of these shown in [Table 6.6](#). But in overview, from a relative power perspective, Taiwan began and ended the study period clearly superior to every nation in both offensive and defensive capability except for China. This reflects both that Taiwan's forces were originally superior to every other state and that its modernisation programs outpaced those of most competitors. But the sheer speed and scale of Beijing's improvements saw Taiwan's offensive potential steadily degrade from superiority to inferiority, or worsening degrees of rough parity, while for simpler defensive missions Taipei moved from clear superiority to rough parity.

### **Predicted Behaviours Overview**

Based on these power assessments, predictions can be made about Taiwan's behaviour over time on an annual basis. This is done by correlating the Integrated Assessment outcome with the predicted behaviours summary at [Table 6.1](#).

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<sup>239</sup> This does not include any potential Philippines-Taiwan scenarios since these nations are not considered to threaten one another's features. But cells are reserved in the table to record the "fact of" the competing claims between Taipei and Manila, with those power balances recorded as "N/A".

Table 6.6 Taiwan Power Summary

	Geographic Feature and Type													
	Pratas Island (CoG)	Scarborough Shoal (Sec B)	Macclesfield Bank (Sec B)	Woody Island (CoG)	Subi Reef (Sec B/A)	Thitu Island (CoG)	Itu Aba Island (CoG)			Mischief Reef (Sec B/A)	Fiery Cross Reef (Sec B/A)	Spratly Island (CoG)	Swallow Reef (CoG)	Louisa Reef (Sec B)
Claimed	CHN, TWN	CHN, PHL, TWN	CHN, TWN	CHN, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM			CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, TWN, VNM	CHN, MLY, TWN, VNM	BRN, CHN, MLY, TWN, VNM
Controlled	TWN	CHN	CHN	CHN	CHN	PHL	TWN			CHN	CHN	VNM	MLY	N/A
Distance from Bases	420	870	950	1050	1430	1450	1500			1500	1650	1800	1830	1960
Taiwanese Operational Need	SD	EMEZ	EMEZ	AA/MEZ	EMEZ - AA/ MEZ	N/A	SD - CHN	SD - PHL	SD - VNM	EMEZ - AA/MEZ	EMEZ - AA/MEZ	AA/MEZ	AA/MEZ	EMEZ
1995	S	N/A	S	AP	RP	N/A	S	N/A	S	RP	RP	S	S	S
1996	S	N/A	S	AP	RP	N/A	S	N/A	S	RP	RP	S	S	S
1997	S	N/A	S	AP	RP	N/A	S	N/A	S	RP	RP	S	S	S
1998	S	N/A	S	AP	RP	N/A	S	N/A	S	RP	RP	S	S	S
1999	S	N/A	S	AP	RP	N/A	S	N/A	S	RP	RP	S	S	S
2000	S	N/A	AP	AP	DP	N/A	RP	N/A	S	DP	DP	S	S	S
2001	S	N/A	AP	AP	DP	N/A	RP	N/A	S	DP	DP	S	S	S
2002	S	N/A	AP	AP	DP	N/A	RP	N/A	S	DP	DP	S	S	S

2003	S	N/A	AP	AP	DP	N/A	RP	N/A	S	DP	DP	S	S	S
2004	AP	N/A	RP	AP	DP	N/A	RP	N/A	S	DP	DP	S	S	S
2005	AP	N/A	RP	RP	DP	N/A	DP	N/A	S	DP	DP	S	S	S
2006	AP	N/A	RP	RP	RP	N/A	DP	N/A	S	RP	RP	S	S	S
2007	AP	N/A	RP	RP	RP	N/A	DP	N/A	S	RP	RP	S	S	S
2008	AP	N/A	DP	RP	DP	N/A	DP	N/A	S	DP	DP	S	S	S
2009	AP	N/A	DP	RP	DP	N/A	DP	N/A	S	DP	DP	S	S	S
2010	AP	N/A	DP	RP	DP	N/A	DP	N/A	S	DP	DP	S	S	S
2011	AP	N/A	DP	RP	DP	N/A	DP	N/A	S	DP	DP	S	S	S
2012	RP	N/A	DP	RP	DP	N/A	DP	N/A	S	DP	DP	S	S	S
2013	RP	I	I	DP	I	N/A	DP	N/A	S	I	I	S	S	S
2014	RP	I	I	DP	I	N/A	DP	N/A	S	I	I	S	S	S
2015	RP	I	I	DP	DP	N/A	DP	N/A	S	DP	DP	S	S	S

Notes: AO distances from Zuoying naval and air bases. Rating Scale: I: Inferior; DP: Disadvantaged Parity; RP: Rough Parity; AP: Advantaged Parity; S: Superior; N/A: Not Applicable. Feature Type: CoG: Centre of Gravity; Sec-A: Secondary, Amphibious Assault Possible, Sec-B: Secondary, construction effort or naval patrolling required. Total number of assessments: 234.

## Vietnam

Vietnam claims the entirety of the Paracel and Spratly Islands in the SCS. Within these areas, Vietnam has occupied some 27 different features in the Spratlys, with its CoG being Spratly Island (CSIS, 2018c). Vietnam's claims also encompass other nations' key facilities at Woody Island (China), Thitu Island (the Philippines), Itu Aba Island (Taiwan), Swallow Reef (Malaysia), and secondary targets at Subi, Mischief and Fiery Cross Reefs (China) and Brunei's claim to Louisa Reef. In turn, Vietnam's claims are contested in whole by China and Taiwan, and for certain areas of the Spratlys (but not including Spratly Island) by the Philippines, Malaysia, and Brunei.

Vietnam's national objectives are hence to defend its own maritime borders and occupied features while ejecting competing nations from territories that it claims are its own. These considerations lead to operational needs for SD to defend Spratly Island and other minor territories claimed by other states (although of the latter only Amboyna Cay and Barque Canada Reef are examined), AA/MEZ operations to conquer competitors nations' CoG, and EMEZ operations to conquer Louisa Reef.

To address these needs is the responsibility of the Vietnamese People's Navy (VPN) and Vietnamese People's Air Force (VPAF). These are effectively mid-strength forces among those in the region. Regarding issues of range, the various AO are 450 km–750 km distant from the main VPN and VPAF bases. Such distances hamper the ability of smaller warships to reach these areas (which form the majority of the VPN) but are well within the capabilities of larger vessels and submarines. Such distances also form the main constraint on the VPAF, particularly for the short-ranged Mig-21 aircraft that formed much of its inventory, although most of its other aircraft can reach even the farthest AO. A figure showing key locations is in the MPA. Distance information is also captured in the Integrated Assessment table below, referring, firstly, to AO ranges in the Paracels from the closest VPAF and VPN facilities at Da Nang. In turn, ranges for the Spratlys are from the closest facilities at Cam Ranh Bay.

In terms of force development, the ORBAT for both services improved steadily during 1995–2015, focussing on modernisation. The VPAF upgraded its Su-22 strike aircraft from 2004 to provide all-weather capabilities and introduced advanced and long-range Su-30MK2 multi-role aircraft from 2007. The VPN's most substantial improvements occurred in 2012 with the introduction of *Gepard*-class frigates and in 2015 with the introduction of its first submarine capability with *Kilo*-class vessels. These changes outpaced those of Brunei and the Philippines, broadly matched those of Malaysia, were surpassed by Taiwan and China, and never managed to approach the initial capability of the USN.

From a stand-alone perspective, the VPN's and VPAF's operational suitability to meet the nation's offensive and defensive needs between 1995–2015 is heavily dependent on the specific adversary, distance to the AO, and the complexity of the task. Offensively, in the nearby Paracels, Vietnam's armed force could work cooperatively to impose a MEZ but lacked the capability to achieve this in the more distant Spratlys until 2004, due to a lack of SC assets able to operate there. Further, the retirement of the VPAF's only ASW MEZ capability in 2013 rendered the force operationally unsuitable for MEZ operations against any adversary with submarine forces – by that point every nation but Brunei. But defensively, Vietnam's forces were SD suitable across the entire period.

### **Integrated Net Assessments Overview**

To assess Vietnam's behaviour across the various offensive and defensive scenarios generates a need for 294 Integrated Assessments, with the outcomes of these shown in [Table 6.7](#). But in overview, from a relative power perspective, Vietnam began the study period able to achieve its offensive objectives against Brunei and defensive ones against Malaysia and China, but clearly unable to defend against any Taiwanese attack or to seize any other states' occupied features. While Vietnam did manage to achieve a range of material improvements to its armed forces during 1995–2015, these were generally of an insufficient scale to affect the balance of power against major nations or were outpaced by their military advances.



While Hanoi's position did improve against secondary targets related to more minor powers such as Brunei and Malaysia, its potential to hold on to its CoG at Spratly Island against China degenerated dramatically. As a result, Vietnam's position in the SCS was worse in 2015 than in 1995. Specifically, Hanoi gained clear offensive superiority over Brunei but remained clearly inferior if attempting offensive operations against China, Taiwan and Malaysia. Defensively, it retained superiority over the Philippines and Malaysia, and indeed improved its position by default against the latter when Kuala Lumpur lost its heavy amphibious capability. But Vietnam remained clearly inferior to Taiwan and moved from clear superiority at Spratly Island against China to clear inferiority.

### **Predicted Behaviours Overview**

Based on these power assessments, predictions can be made about Vietnam's behaviour over time on an annual basis. This is done by correlating the Integrated Assessment outcome with the predicted behaviours summary at [Table 6.1](#).

### **Conclusion**

In this chapter the balance of military power in the SCS between six competitors (Brunei, China, Malaysia, the Philippines, Taiwan, and Vietnam) was determined at 15 assorted AO across 1995–2015. This resulted in 1,371 assessments of dyadic balances of power, allowing associated behavioural predictions to be made for each under the various theories. This provides the last step in generating model-specific forecasts that can then be assessed against historical data.

As discussed in the first section of this chapter, the SCS was selected for this work as it has global relevance due to the enormous physical (such as oil and gas), human (in terms of local populations) and trade resources that exist in and flow through the area. Further, it also represents in many ways a technically ideal test case as the SCS is an area where:

Table 6.7 Vietnam Power Summary

	Geographic Feature and Type													
	Woody Island (CoG)	Spratly Island (CoG)		Fiery Cross (Sec B/A)	Subi Reef (Sec B/A)	Thitu Island (CoG)	Itu Aba Island (CoG)	Barque Canada Reef (Sec B)		Amboyna Cay (Sec A)		Swallow Reef (CoG)	Mischief Reef (Sec B/A)	Louisa Reef (Sec B)
Claimed	CHN, TWN, VNM	CHN, TWN, VNM		CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, MLY, TWN, VNM		CHN, MLY, TWN, VNM		CHN, MLY, TWN, VNM	CHN, PHL, TWN, VNM	BRN, CHN, PHL, TWN, VNM
Controlled	CHN	VNM		CHN	CHN	PHL/USN*	TWN	VNM		VNM		MLY	CHN	N/A
Distance from Bases	450	460		480	540	560	590	600		610		700	730	750
Vietnamese Operational Need	AA/MEZ	SD - CHN	SD - TWN	EMEZ - AA/MEZ	EMEZ - AA/MEZ	AA/MEZ	AA/MEZ	SD - MLY	SD - PHL	SD - MLY	SD - PHL	AA/MEZ	EMEZ - AA/MEZ	EMEZ
1995	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
1996	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
1997	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
1998	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
1999	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
2000	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
2001	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
2002	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
2003	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
2004	I	AP	I	I	I	I	I	S	S	AP	S	I	I	AP
2005	I	AP	I	I	I	I	I	S	S	AP	S	I	I	AP

2006	I	RP	I	I	I	I	I	S	S	AP	S	I	I	AP
2007	I	RP	I	I	I	I	I	S	S	AP	S	I	I	AP
2008	I	RP	I	I	I	I	I	S	S	AP	S	I	I	AP
2009	I	RP	I	I	I	I	I	S	S	AP	S	I	I	AP
2010	I	DP	I	I	I	I	I	S	S	S	S	I	I	AP
2011	I	DP	I	I	I	I	I	S	S	S	S	I	I	AP
2012	I	DP	I	I	I	I	I	S	S	S	S	I	I	S
2013	I	DP	I	I	I	I	I	S	S	S	S	I	I	S
2014	I	DP	I	I	I	I	I	S	S	S	S	I	I	S
2015	I	I	I	I	I	I	I	S	S	S	S	I	I	S

Notes: Woody Island distances from Da Nang bases, Spratly distances from Cam Ranh Bay bases. Rating Scale: I: Inferior; DP: Disadvantaged Parity; RP: Rough Parity; AP: Advantaged Parity; S: Superior; N/A: Not Applicable. Feature Type: CoG: Centre of Gravity; Sec-A: Secondary, Amphibious Assault Possible, Sec-B: Secondary, construction effort or naval patrolling required. \*Reflects USN involvement. Total number of assessments: 294.

- multiple territorial disputes are occurring (providing a greater diversity of data, reducing the influence of outliers, and strengthening confidence in analytical outcomes);
- there have been pronounced shifts in the operational balance of military power between nations at diverse locations, reflecting both quantitative and qualitative improvements in armed forces (principally but not exclusively for China) as moderated by matters such as distance to AO. This again provides multiple instances of being able to assess the impact of power parity and disparity, to test the relevance of BOP and PTT in particular;
- extensive data exists regarding military developments and state behaviour over the period; and
- the geographic nature of the area (where small nations are in many ways insulated from the actions of powers such as the US and China), and the nature of relations between states within it (loose associations of countries that can still compete for regional dominance in a militarised environment), meet the logical criteria proposed by DR and OR for allowing the full breadth of behaviours to be demonstrated by various state-types.

For this region, the process of developing balances of power was conducted using the 5-7-7 model developed in the previous chapter. To generate the resulting MPA involved the development of specific general capability effects and system requirements for AA, MEZ and SD missions, and national capability requirements for the six nations under consideration. These metrics were then applied to assess 1,371 balances, informed by consideration of 115 major military asset classes located at 29 military bases and utilising 70 sensor and 70 weapon systems. Of note, this overall dataset represents the most detailed publicly available resource of its type to the author's knowledge.

Perhaps the most significant result from the power review was that it emphasised the lack of a linear correlation between overall armed strength and military power at particular locations. As previously discussed, military power is operationally specific: it must be judged in terms of what outcomes nations seek to achieve and where, and their chances for doing so against specific competitors – with each side using the forces it can muster at a particular location. While many states had wide disparities in their overall armed forces to begin with, and these generally grew over time (notably with respect to China’s rapid military development), this did not translate into immediate superiority for the side with the larger navy or air force. Even smaller nations like Malaysia and Vietnam would be more judged more powerful, when engaging in SD close to home, than much overall stronger states such as Taiwan or China if these competitors were to attempt AA/MEZ or EMEZ operations distant from their own bases.

In turn, this led to differing predictions for behaviour depending on the scenario, location and states involved. It is now possible to compare these to the historical record to empirically assess which observed behaviours better aligned with the various theories’ predictions. This is done in the following chapter.

## **Chapter Seven – Testing State Behaviour and Answering**

### ***If, How, and When***

This chapter conducts the final logical step necessary to test *if, how, and when* in the three-phase manner originally proposed. These phases were to develop behavioural predictions for the five theories under assessment as affected by the balance of power (Chapters Two and Three); develop a structured means to measure military power (Chapters Four and Five); and then use these means to develop 1,371 power assessments and behavioural forecasts for six states involved in territorial disputes in the SCS between 1995–2015 (Chapter Six). Now, the third phase can be concluded by comparing these predictions to the historical record of actual state behaviours in the region over this period. Through this observational test, the largest of its type to the author’s knowledge, the explanatory power of the five theories under investigation can be tested and, ideally, high-confidence answers developed for the research questions.

Chapter Seven proceeds to conduct, report on and discuss the results of this analysis in three sections. The first reviews the dataset used, and processes developed, to identify individual states’ strategy-relevant actions and assess them for scope and direction in alignment with Chapter Three. This includes a discussion of the novel counting rules and guidelines created to support the robust and repeatable identification and assessment of strategies even in complex analytical environments. The second section reports the aggregated results from applying the methods in Section I to the 1,371 assessment opportunities that span the historical conduct of the six states under investigation for the period 1995–2015. Of note, both Sections I and II draw on the Theory Analysis Document (TAD), located at Annex C, where the various relevant processes are described and conducted in detail. Finally, Section III discusses and analyses the results, including to propose that DR overall, and with some limitations DR(GS)BOP in particular, best answers *if, how, and when*. Some constraints on confidence in these outcomes are also discussed, and comparisons with results in other works made.

## Section I: Assessing Patterns of State Behaviour – Practical Considerations and Key Concepts

To situate the practical process developed and associated decisions reached to assess state behaviours, it is useful to briefly summarise the objectives of the dissertation and the chosen methodology for their pursuit. As discussed in Chapter One, this work aims to answer three key security studies questions: *if* nations are generally primed to initiate war, or whether they seek to avoid it; *how* tendencies for strong belligerence or peaceful cooperation can be identified in individual countries; and *when* nations are most likely to attack – in terms of what military power conditions support commencing conflict.

The means used to answer these questions was to conduct an observational test of five different theoretical models – DR(GS)BOP, DR(GS)PTT, DR(GLS), OR(BOP) and OR(PTT) – that propose different answers to the questions. To conduct such a test required the development of testable predictions for the models aligned to the questions, and then comparing these to the real world to examine the extent to which they manifest. The more that any theory's forecasts occur more frequently, the greater its explanatory power (i.e., its degree of correctness) in terms of its answers to *if, how, and when*.

This objective was realised by developing distinctive predictions for the five theories for the types of strategies (including war) that states motivated by each model<sup>240</sup> should prefer, as moderated by the balance of power, as they seek to resolve territorial disputes. These were developed in Chapter Three and summarised there in Table 3.4.<sup>241</sup> Since these forecasts encompass war, state behaviour (in the sense of strategy choices), and balances of power, all the key elements of the research questions are captured. These predictions were further developed in Chapter Six and the MPA (at Annex B) into 1,371 annual power assessments and associated

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<sup>240</sup> In the sense of operating under a worldview that the model describes.

<sup>241</sup> And of course, essentially identical tables but with more precise representations of balances of power are presented and used in Chapters Five and Six. These representations are interchangeable.

strategy forecasts, reflecting the expected behaviours during 1995–2015 for six states (Brunei, China, the Philippines, Malaysia, Taiwan, and Vietnam) involved to varying degrees in territorial disputes at 15 sites in the SCS.

The methodology now used in this chapter to assess these predictions, and answer the research questions, is a mixed focussed comparison (qualitative) and statistical-correlative (quantitative) test that is conducted in two parts. Firstly, the actual strategy choices made by the states in each of the equivalent 1,371 instances must be analysed to identify which model best explains each individual observed result. This work is essentially a qualitative analysis of nations' behaviour against the frameworks in Chapter Three, and results in 1,371 assessments of each nations' "state-type", such as that one year a country acted as an OR(BOP) state. Secondly, the individual outcomes are summed together and quantitatively assessed against the key research queries. The theory for which predicted results are observed most often, as noted above, has the greatest explanatory power for *if, how, and when*.

### **Practical Considerations Supporting Best Practice Assessments**

While the above process is straightforward in concept, in practice it raises a range of issues. Not least are the challenges involved in the development of a formal process and associated counting rules (i.e., analytical guidelines) to assist with the structured, repeatable conduct of the qualitative assessment in particular. As discussed previously, using such techniques aligns with analytical best practice in the social sciences, as they support clarity of method, reduced contestability of results, and increased likelihood of common (i.e., repeatable) outcomes.

The processes developed here arose logically from consideration of the methodology of assessment and the associated data used to conduct the testing. So, the means used to determine a nation's annual state-type involves considering what strategies it used to pursue its territorial objectives against a particular other nation, at a specific location, as moderated by the balance of power between the two there at that time.



Of course, to assess state-type in this way requires an actual dataset of these behaviours. The one used here is not publicly available but was graciously provided by Dr Phillip Saunders of the National Defense University (NDU) in Washington DC – namely the *South China Sea Database* (Yung et al., 2017).<sup>242</sup> The data comprises nearly 2,700 actions, drawn from various types of unclassified reporting, relating to the behaviours of over a dozen actors relevant to the SCS during 1995–2015. These include the six nations under investigation, the US, multilateral organisations such as the Association of Southeast Asian Nations (ASEAN) and a range of other states including Singapore and Indonesia. The data also covers close to 60 geographic features, including the 15 MPA sites that are the focus of this dissertation.

Regarding formatting, the database was comprised of an Excel spreadsheet. In it, each action was listed in a row comprised of multiple columns. These captured information including the action’s date; its reporting source; a summary of the action; the actor(s) initiating the behaviour, such as China, or China and Malaysia; the area it related to, with this ranging, across various instances, from the SCS as a whole to groups such as the Spratlys, or even individual features; and the target of the action, in terms of the state it was directed towards.

The diversity of information available in this resource (let alone any other), and the requirements of the methodology chosen to assess the data, led to the need for a framework and counting rules to address three key logical issues:

- a means to determine, of the 2,700 actions in the NDU dataset (or any other), which were relevant to a state’s strategy for any particular territorial dispute;
- a means to classify identified relevant actions in terms of their position on the framework developed in Chapter Three; and
- guidance on how to assess the resulting actions for scope and direction.

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<sup>242</sup> Access to the database may be requested from Dr Saunders directly.

Of these three points, certain elements were either easily addressed or had been earlier in the dissertation. So, for the first issue, the decision was taken to exclude all actions related to nations or locations not under assessment, with some rare exceptions captured in the TAD. For example, behaviours by Indonesia were not considered; nor were actions by, say, the Philippines that addressed Reed Bank (a non-MPA site). Also excluded were most actions by private-sector actors, as these were considered to lack a strong logical link with states' strategies. As a result of these exclusions, some 1,650 behaviours remained (with these including a handful of additional entries selected by the author). Of note, all references hereafter to relevant behaviours relate to these 1,650 examples.

In turn, the second point is largely met through the analyst's consideration of the nature of an action against the typology developed in Chapter Three. Conducting this process also inherently addresses the matter of scope.

### **Identifying Strategy-Relevant Actions and Assessing Direction in Complex Conditions**

Yet challenges exist both in identifying strategy-relevant actions and then determining direction with regards to how nations act towards various states. This reflects the decision taken here (as noted in Chapter Three) to consider both directly and indirectly relevant actions (i.e., those with explicit and implicit causal links to a strategy) when assessing nation's behaviours.

The benefits of this approach are that it allows for a far more holistic assessment of states' strategies and hence motivations, and thus, in one way, a stronger test of theory. In terms of costs, the decision unavoidably increases complexity (since many more actions are considered) and arguably also increases the contestability of results, since the relevance of various implicit actions can be debated.

Despite these issues (which are also discussed in more detail further below), the broader interpretation of relevant actions was preferred, due to the potential benefits. Further, costs were sought to be addressed via process and counting rules. So, the counting rules firstly needed to identify relevant behaviours. This matter is complex as, intuitively, there are a plethora of direct and indirect ways that nations can seek to exert, or imply, costs and benefits towards other states as part of their strategy to attain some end. And these must be differentiated (in a logical and consistent way) from any number of other, likely unrelated, actions they conduct.

Secondly, once relevant actions had been identified, they needed to be consistently considered to assess direction – in the sense of a state preferring an escalating coercive, matched, or escalating cooperative strategy, and to what level of escalation. This is of course considerably complicated when the totality of a state's strategy towards another nation is comprised of any number of indirect and direct actions. For example, Beijing frequently published nine-dash line maps claiming sovereignty over almost all of the SCS and hence applying to all MPA sites by default. These of course concurrently applied to any number of other nations and locations, and often at varying balances of power. And such acts needed to be combined with far more specific direct behaviours by China, focussed on particular countries and sites, to assess its strategy towards each individual claimant.

Further, direction involves not merely a nation's own actions but how it responds to others' behaviour, and actions may interact in complex ways. For example, in 2012, China effectively seized Scarborough Shoal from the Philippines after a multi-month stand-off. In reaction to this, Manila in 2013 commenced arbitration proceedings against Beijing in the UN Permanent Court of Arbitration (PCA). But Manila's case addressed not just Scarborough Shoal, but more than half a dozen other features too, including the Chinese-occupied Fiery Cross, Mischief and Subi Reefs – MPA sites in this assessment. And while Beijing refused to engage with this process, in 2014 Vietnam lodged a brief with the PCA supporting the Philippines' position – even though any PCA ruling might also adversely affect Hanoi's *own claim* to many of these features, which it also contests with China, the Philippines and Taiwan. And

of course, all these nations throughout this period had varying balances of power at these sites between each other, and some of these balances were shifting.

To address these various complications, both a structured assessment process and a range of novel counting rules were created. The counting rules focussed on identifying strategy-relevant actions both by their geographic proximity and their thematic applicability to MPA sites. A process was then developed to collate or “stack” the various types of relevant behaviours to provide holistic lists of actions. Such site-specific stacks were qualitatively assessed to identify state-type, using different counting rules for where states held offensive vice defensive objectives, noting that many defensive actions are common to all state-types and so provide no insight into assessing motivation. Analyses were also influenced by the balance of power, since weak state actions also provide no information. Further, when assessing direction, different weightings were applied to certain types of actions.

The key elements of the details of these decisions, and the logic behind them, are summarised below, described through an overview of the qualitative and quantitative analytical processes writ large. This is followed by a more detailed discussion of the costs and benefits of the approach and selected concepts and counting rules that the author found noteworthy. To the best of the author’s knowledge, these comprise among the most detailed sets of such rules available to assess direct and indirect actions in a structured qualitative manner.

Of course, all these matters are also discussed in more detail in the TAD at Annex C. Regarding the TAD, this serves as a set of explanatory notes and a place to capture both state-level aggregated results and a range of decision rules created to address idiosyncratic elements of the NDU information. The TAD is also comprised of the Actions and Assessments Database (AAD), a set of six Excel workbooks (one for each claimant nation) that capture the process of organising and assessing the various state behaviours and then making 1,371 qualitative assessments of state-type.

Finally, while the below discussion is conducted in terms of applying the analytical processes and counting rules to the NDU dataset and the SCS, these processes and rules have been deliberately designed to be applicable to any territorial dispute dataset that already captures the relevant information. Alternatively, they may guide the development of new resources that aim to apply the methodology.

### **Overview: Qualitative Analysis Process**

To assess individual nations' annual state-types required identifying the scope and direction of the strategies that each country used to further its aims *against each other claimant at each relevant MPA feature* during 1995–2015. This process was conducted (in practice in the AAD) through five logical steps. These are described below, with further information on ***bolded italicised*** terms for the interested reader available in [Table 7.0](#), followed by additional practical examples and figures. Of note the description below includes both an overview of the key steps in the process together with brief discussions of certain key principles relevant to its operation, as well as selected concepts relevant to its application in the SCS.

#### **Step One: Classification**

For every nation under consideration, it was firstly necessary to identify from its annual pool of actions those that were relevant to each MPA location and competing claimant state. This pool needed to include both actions initiated by the country and its responses to behaviours by other nations.

Conceptually, the ***direct or indirect relevance*** of any action (or response) to an MPA site and other claimant(s) was identified by considering its geographic (physical proximity) and/or contextual nature (its thematic content). Direct actions were physical behaviours (such as patrols) occurring within 22 km of site(s), or thematic ones (such as media releases) referring to them by name. Indirect actions were physical behaviours placed more broadly (such as “the Spratlys”), or thematic acts that affected a broader zone. The 22 km distance was derived from the UNCLOS

**maritime zones** judged most relevant to the MPA features: that is, since most sites are considered as rocks, they are hence entitled to a 22 km TS.

This process led to the classifying of actions into **three broad groups**, leading to the name of this step. Firstly, “General Actions” related to multiple nations and/or MPA sites without evidently targeting specific countries. Secondly, “Nation-and-Location Relevant Actions” were behaviours identified as part of a state’s strategy towards a specific nation and relating to one or more MPA locations. Thirdly, “Location Specific Actions” were defensive control-enforcing behaviours conducted by a nation at a specific site that affected all other countries.

Of note as part of this process, states’ actions were assessed in the narrowest appropriate manner in terms of their geographical remit. This was to reflect a key principle used in the operation of the model, that of **minimising data extrapolation**, to support the most defensible and robust analysis.

### **Step Two: Categorisation**

Once a nation’s annual pool of the various types of action had been generated, each action was assigned a category rating based on its alignment with the strategy frameworks in Chapter Three. For example, the publishing of a map claiming sovereignty of a feature would be rated as a normal coercive administrative/legal diplomatic action, and so on. Also, as discussed in Chapter Three, some actions are normal or distinctive depending on **where they occur**, for example if they are conducted within the TS of a feature controlled by another state, which is considered the beneficiary of the UNCLOS afforded zone. The beneficiaries at each site from 1995–2015 are those captured in [Table 6.0](#), and Brunei for Louisa Reef.

### **Step Three: Assignment and Stacking**

Once the annual pool was categorised, it was necessary to assign the various action types (General Actions and so on) to each MPA site and competing claimant, based

on the outcomes of Step One. This was done by combining or “stacking” the various types of actions to develop an annual list, noting that general actions might apply to many sites, whereas Nation-and-Location relevant behaviours might apply to only one location and claimant. Once finalised, each stack comprised the nation’s annual strategy towards that site and the claimants there. This step was hence referred to as assignment and stacking.

Where a state had offensive objectives, one stack was created to reflect its strategy towards the occupier. Where a state had defensive objectives, multiple stacks were created to capture its different strategy towards each claimant.

#### **Step Four: State-Type Assessment**

Each stack of categorised actions was then assessed in terms of its best-fit ***pattern-matching alignment*** with the various theories’ scope and direction predictions from Chapter Three to identify the nation’s annual state-type. The assessment process was informed by factors including the actions’ individual category ratings and the balance of power at the site between the nation and the target(s) of its strategy.

Added weighting was placed on distinctive actions (since these are more overtly theory-specific), ***substantive actions*** (i.e., actions that are distinctive and directly relevant), and ***deliberate responses*** by nations to the acts of others. Also, in some instances, a ***lack of action*** could indicate state-type – such as the absence of the persistent coercion predicted from Revisionists.

Where a state had offensive objectives, all its actions were considered to be part of the nation’s deliberate strategy to gain control of the feature. But in defensive scenarios, as all state-types are considered to share some common actions, only distinctly coercive behaviours, directly cooperative ones and those that could be overtly identified as relating to another claimant were considered.

Also, while in this step more precise identification was preferred (e.g., an OR(PTT) state), often only a coarser identification was possible (e.g., a DR state) or ***even no useful assessment*** at all. The latter could occur due to a state's weakness, or because its defensive actions were simply common to all state-types.

Of note, in some instances state behaviour was judged as irrational (when distinctive coercion was conducted at times and places of power inferiority). As a key principle, such actions were not considered to reflect any broader irrationality on the part of states, as opposed to a willingness to take occasional risks. Instead, in alignment with Realism, there was a presumption of general rationality for states' actions.

#### **Step Five: Sensitisation and Recording**

Finally, the overall assessment of the nation's state-type at each MPA location towards each other claimant was captured, including a narrative description of why the particular decision had been reached. As part of this, any necessary ***sensitisation*** (modification) of data was conducted and its impact on decisions noted. For example, if a state made factually incorrect statements on some matter, these could be withdrawn from considering its pattern of behaviours.

Once the annual assessment had been concluded, the state-type result (such as DR(GLS)) was transferred to a summary table for subsequent quantitative analysis.

Finally, in some instances, the consistent application of the counting rules produced outcomes – referred to as “artefacts of process” – which may appear dubious, or which could be more cogently explained by applying different reasoning or “bending the rules”. In such instances, no such “bending” was conducted, because doing so would undermine the very purpose of having a consistent process. Also, such instances were rare and generally resulted in states' behaviour being judged as irrational – and so being subtracted from consideration rather than altering test outcomes.



Table 7.0: Five-Step Qualitative Analysis Process – Expanded Key Definitions and Commentary

<b>Key Terms and Selected Commentary (Listed in the Order That They Appear in the Text)</b>
<p><b>Assessing direct and indirect geographic and contextual relevance.</b> Geographically directly relevant actions were defined as certain physically localised behaviours (principally paramilitary or military activities) which could be identified as occurring in the immediate proximity of MPA site(s); defined as within 22 km, reflecting the TS afforded to rocks under UNCLOS (noting all the features barring the submerged Macclesfield Bank meet at least this criteria). For such activities, this proximity provided the direct causal link to strategy. Indirectly geographically relevant actions were of the same type but could only be placed more generally in an area, such as the Spratlys or even the SCS, and so could notionally affect all features in that area by default. In turn, directly contextually relevant behaviours were those which were overtly associated with site(s) by name, such a media releases claiming sovereignty. Indirectly relevant actions were those which overtly or implicitly affected a broader area. These included maps that might encompass (and claim) several MPA sites, or discussions between states (such as Vietnam and Malaysia) on their disputed SCS features, which by implication were considered to apply the MPA locations.</p> <p>In practice, the information requirements for conducting such assessments were well-met by the descriptions of locations and target states in the NDU dataset.</p>
<p><b>Feature maritime zones.</b> To identify when physical actions are related to a specific feature it is necessary to define some logical criteria to allow them to be categorised as such. The decision taken here was to determine actions’ relevance by reference to features’ maritime zones, reflecting these are areas of control afforded under UNCLOS. In general, the 22 km rule was used as all MPA features (bar the submerged Macclesfield Bank) are treated as rocks, which under UNCLOS are entitled only to a 22 km TS. This reflects, in the author’s opinion, the most defensible classification of most features and also aligns with the PCA ruling in 2016.</p>
<p><b>Minimising data extrapolation.</b> As a key principle, state’s actions were assessed in the narrowest appropriate manner in the sense of their geographical remit (i.e., how many MPA locations the action may relate to), the number of nations affected (i.e., minimising consideration of the impact on third parties), and its degree of cooperation or coercion (i.e., normal vice distinctive). This supports the most defensible and robust analyses of state behaviour at MPA locations, rather than involving actions which were unlikely to be part of relevant strategies, or by seeking to classify as distinctive behaviours those that should sensibly be considered as normal. As part of this, in general only the bilateral effects of any actions were considered, with the impact on any “third parties” (such as other claimants) not addressed.</p>
<p><b>Where actions occur.</b> As noted in Chapter Three, certain physical actions (such as coastguard enforcement) are normal in maritime zones where a nation has the legal authority to conduct such behaviours but are distinctly coercive where a nation has no authority. To classify such actions requires proposing maritime zones for the MPA features and defining which nations are their beneficiaries, noting both these issues are disputed by the claimants. As noted above, all areas bar Macclesfield Bank are treated as rocks, which under UNCLOS are entitled only to a 22 km TS. The beneficiaries are those nations shown in <a href="#">Table 6.0</a>, and also Brunei for Louisa Reef.</p>

**Groups of strategy types.** General Actions were activities by a state that related to multiple nations and/or MPA sites, without evidently targeting specific countries; for example, China's nine-dash line maps, or a military patrol by Malaysia "in the Spratlys". Nation-and-Location Relevant Actions were behaviours identified as part of a state's strategy towards a specific nation and relating to one or more MPA locations; for example, SCS coastguard cooperation agreements between Vietnam and the Philippines. Lastly, Location Specific Actions were defensive control-enforcing behaviours, such as building paramilitary infrastructure, done by a nation at a specific site that affected all other countries in common.

**Pattern-matching process.** Each stack of categorised actions was assessed in terms of its pattern-matching alignment with the various theories' scope and direction predictions from Chapter Three to identify the nation's annual state-type. While this process was qualitative, additional weighting was placed on distinctive actions, substantive actions, and responses by nations to the acts of others.

When assessing state-types, this was determined by matching observed behaviours' best-fit alignment with theories' core predictions. For example, various forms of low-level cooperation are part of the preferred scope for DR(GS) and DR(GLS) states, but also allowed for Revisionists. Should a nation engage in such low-level cooperation, it would be preferentially identified as a DR state, rather than an OR nation that happened to be behaving cooperatively.

Also, all nations can and do act in diverse ways. This may include behaving in manners where there are conflicting patterns of scope and direction, or outlier actions contradictory to the main patterns observed. In such instances these behaviours were generally taken to indicate a DR(GS) state as their broad flexibility in approach is taken as the best fit for such patterns. Of course, such assessments were also influenced by the broader pattern of actions that nations engaged in. For example, consistent Revisionist aggression matched with a handful of instances of DR(GS) or DR(GLS) behaviour would tend to be judged as OR overall.

**Substantive actions.** When nations engage in *directly relevant* and *distinctive* cooperation or coercion towards a feature, such actions are classed as "substantive behaviours" as these are most clearly relevant to a state's strategy regarding a target site and nation, and have the highest potential impact on the competing claimant.

**Responses.** Responses are specific actions taken in reply to individual behaviours by another country that are constrained in time and space. So, one state might make a media release claiming sovereignty of a feature. If another nation replied to this specifically with a diplomatic protest, this would be classed as a response. Responses are considered to have particular value in identifying motivation as they allow the clear identification of direction. So, a response indicates whether a nation has chosen to escalate, match, or de-escalate the level of coercion or cooperation in the initial action. Responses also have additional value in that they are considered to have two "pieces" of information: the category rating of the action itself, and its relative escalation in comparison to the initial action. This provides more data than initiated actions or reactions, which have only the category rating – for the latter as the reaction is in reply to a range of actions, hence there is no single relative escalation value.

**Considering absences of action.** In Chapter Three OR nations are defined as being expected to act persistently to resolve disputes via high-level and escalating coercion. As a counting rule, where a nation has offensive objectives, any 12-month period without any form of direct distinctive coercion was treated as arguing against OR. In

such instances, by elimination a nation was classified as a DR state, although no more precise identification was possible unless more data was available. As no equally certain imperative for action exists for DR states, no comparable assessment could be made in reverse to indicate an OR state.

Also, if a state ignores substantive cooperation, this is taken as evidence of OR or DR(GS) motivations; if it ignores substantive coercion, this is taken as evidence of DR(GLS) motivations. Of course, if a nation does respond to any action (substantive or otherwise), this is assessed in alignment with the guidance in Chapter Three

***Occasions when no state-type assessment was possible.*** No assessment of motivation could be made in three main scenarios. These were when a weak nation either engaged in consistent cooperation or distinctive coercion, as such actions, respectively, are expected from all state-types when weak or are treated as evidence of irrationality. Also, when there were insufficient behaviours observable in a scenario to make an assessment (considered to be either one distinctive action, response, or lack of response to a substantive action; or three or more normal actions), or where the behaviours that were observable were common to all state-types. In all such instances, the results were simply removed from consideration and the total number of useful assessments was decreased in proportion. Also, irrational actions were subsequently tallied and considered as part of theory assessment in Section III.

***Sensitisation.*** Sensitisation refers to when the category rating of an action was modified due to any exceptional circumstances that clearly affected how the action should be rated; for example, a state engaging in a behaviour that was overtly deceitful. When such instances occurred, the sensitised result was the one used when determining state-type, with the associated justifications recorded in the AAD. In summary sensitisation occurred four times, affecting 11 of 1,371 assessments related to three different nations (the Philippines, Taiwan, and China). This outcome had no significant impact on any nation's individual results or the aggregated totals.

## **An Illustration of the Qualitative Conceptual Process**

The above conceptual process is also illustrated in [Figure 7.0](#) below. The figure illustrates the process with respect to a selection of sites and nations relevant to Malaysia. As may be recalled, Malaysia has seven scenarios under consideration in the SCS. Four are offensive: Louisa Reef (treated as defended by Brunei); Commodore Reef (defended by the Philippines); and Amboyna Cay and Barque Canada Reef (defended by Vietnam). In turn, Malaysia defends Swallow Reef, with this contested by China, Taiwan, and Vietnam. For reasons of space, the five-step process is not shown with respect to all these scenarios but instead focusses on Louisa Reef, Amboyna Cay, and China's and Taiwan's respective claims for Swallow Reef. Also, Steps One and Two are shown together. Finally, the information in the figure is illustrative and does not represent the outcomes of any particular year.

## **Qualitative Assessment Practical Tables**

This conceptual process was practically conducted in the AAD, with a detailed description given in TAD Section II. Also, a summary is shown in [Table 7.1](#) below, using an abbreviated entry for Malaysia from 2005 (including cropped versions of cell data). As can be seen in the table, a separate spreadsheet tab was used to capture each year of a state's actions and associated state-type assessments for all relevant MPA sites and competing claimants. All of a state's General Actions were captured in the top rows of the sheet (one is seen in the table), with this followed by any Nation-and-Location Relevant Actions (two are shown for China). Below these were the subsections of the sheet that captured all the various MPA sites and competing claimants that the state was contending with. So, for Malaysia, seven such subsections existed, although only one is shown for Louisa Reef.

To operate the sheet, once categorised, all the General and Nation-and-Location actions were copied to each MPA subsection, with Location Specific actions also placed as appropriate. In the table, the single applicable General Action from that year is applied to Louisa Reef. These then formed the stack that was used for

state-type assessment, with the result, and its narrative justification, captured beneath each subsection. This too is shown in the table for Louisa Reef.

More broadly, [Table 7.1](#) shows how information is captured in the AAD columns. These show, from columns B–H, elements used from the NDU dataset (an action’s date, summary, and so on), then for I–M information created for the dissertation. Of these, the most important is column J (Justification), which captures the action’s category rating (e.g., cooperative normal declaratory military) and the reasoning why it was chosen. Also, Column I (Category Code Number) captures a number identifier assigned to each strategy category. This was done to support the creation of charts to support pattern analysis of large quantities of data. Following [Table 7.1](#), a sample of such a chart for Malaysia in 2015 is at [Figure 7.1](#), for Louisa Reef.

This methodology proved an effective means of gathering together actions relevant to each MPA site and claimant, meeting the objective the holistic analysis of states’ strategies. The process of copying applicable data to multiple sites also created a very substantial database. For example, while 1,650 actions are harnessed as a starting point, in 2013 alone China had 108 General Actions applicable to each of 20 sites; these plus other acts resulted in nearly 2,500 line items of data to assess. This process, replicated for six nations across 21 years of activity, generated over 24,000 actions, and the AAD comprises some 293,500 cells of data. And each of the 1,371 state-type assessments considers all elements of each relevant stack, including at times sequences of multiple actions and responses, and certain absences of action.

Lastly, Malaysia’s summary table is presented in [Table 7.2](#), drawn from its equivalent in the AAD. This contains all of Malaysia’s state-type results. All such tables follow the format of the Military Power Summary but add 21 more rows (one for each year) and interleave annual power assessments for a location in one row, with state-type assessments in the following one. This captures the state-type and the nation’s position in the power balance towards that particular adversary at that location and year. Of note, these tables only present state-type outcomes that arose during analysis. Thus, if no OR(PTT) results were found, none are listed.

Figure 7.0: State-Type Annual Qualitative Assessment Process

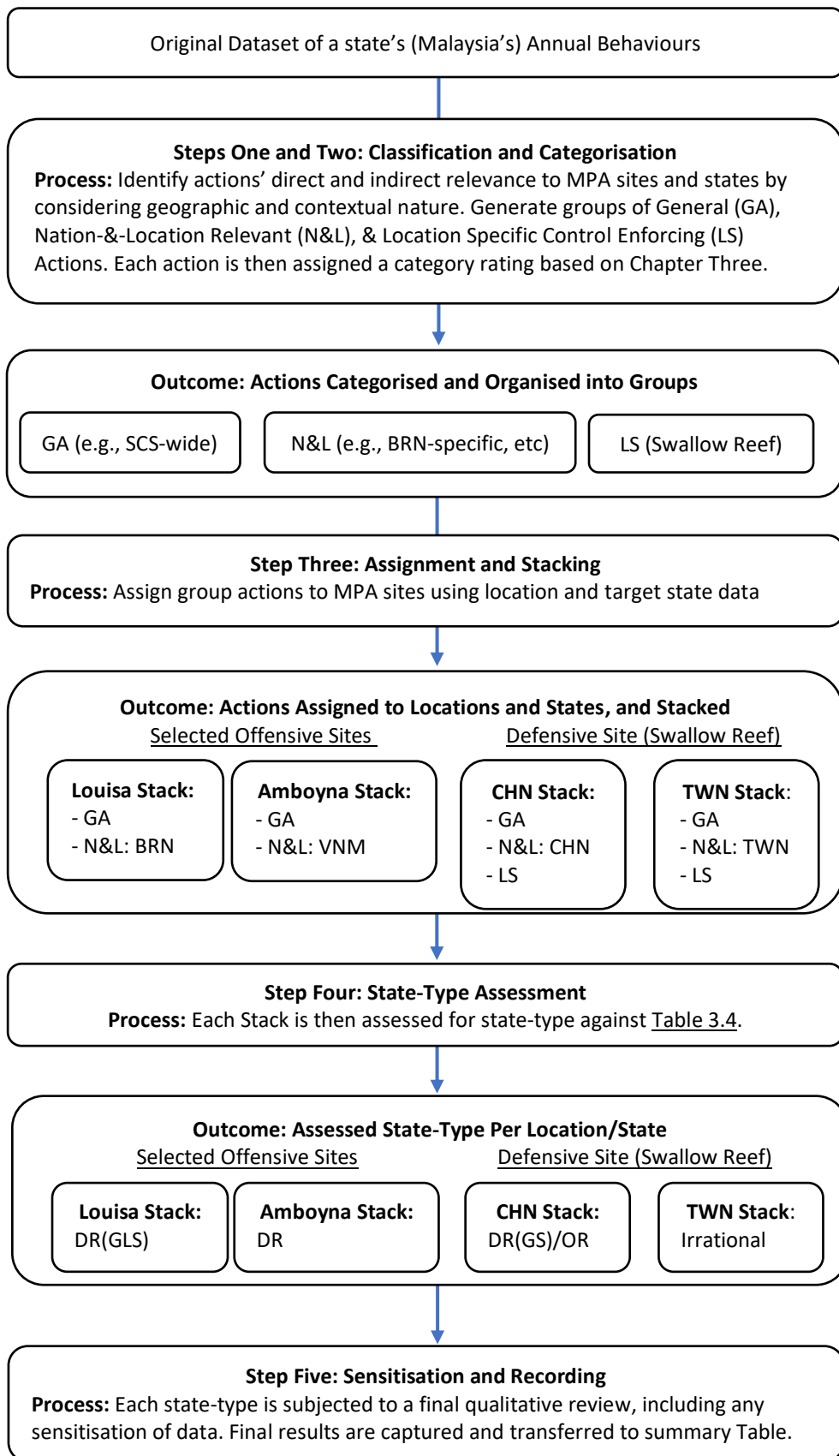


Table 7.1: Malaysia Exemplar Abbreviated Annual Assessment Sheet (2004)

A	B	C	D	E	F	G	H	I	J	K	L	<
	<u>Date</u>	<u>Title of Article</u>	<u>Summary of Article/ Incident</u>	<u>Actor</u>	<u>Location</u>	<u>Target</u>	<u>Source of Report</u>	<u>Category Code Number</u>	<u>Justification</u>	<u>Initiation Response Unclear</u>	<u>Further Info</u>	<u>Notes</u>
<b>General</b>												
<b>General Actions</b>	26/7/05	CH-SEA Relations	ASEAN foreign ministers...	ASEAN	SCS	CH	Comp Conn's	-5	Coop normal admin/legal diplo: agree to DoC WG	Unclear		Apply to all areas
<b>Nation-and-Location Relevant</b>												
<b>Brunei</b>												
<b>China</b>	4/9/05	CH-SEA Relations	CH-MLY sign defence MOU	MY-CH	SCS	all	Comp Conn's	-8	Coop normal admin/legal military: defence MoU	Unclear		Apply to all areas
	15/12/05	CH-SEA Relations	CH-MLY joint defence communique	MY-CH	SCS	all	Comp Conn's	-4	Coop normal declaratory military: defence communique	Unclear		Apply to all areas
<b>Philippines</b>												
<b>Taiwan</b>												
<b>Vietnam</b>												

Application to MPA Locations												
Louisa Reef – EMEZ vs Brunei												
Superior												
General Actions	26/7/05	CH-SEA Relations	ASEAN foreign ministers...	ASEAN	SCS	CH	Comp Conn's	-5	Coop normal admin/legal diplo: agree to DoC WG	Unclear		Apply to all areas

Assessment: Malaysia behaves as a DR(GS) or DR(GLS) state. Noting Kuala Lumpur's military superiority and offensive objectives, Malaysia does not engage in the types of persistent escalation expected from an OR state. In turn, Brunei provides no substantive actions to respond to.

*Note: In the above table (and in the AAD more generally) when two or more nations were involved in commencing an action, it was rated as unclear and treated as a behaviour co-initiated by both parties.*



**Figure 7.1: Malaysia Action Chart Summary – Louisa Reef, 2015**

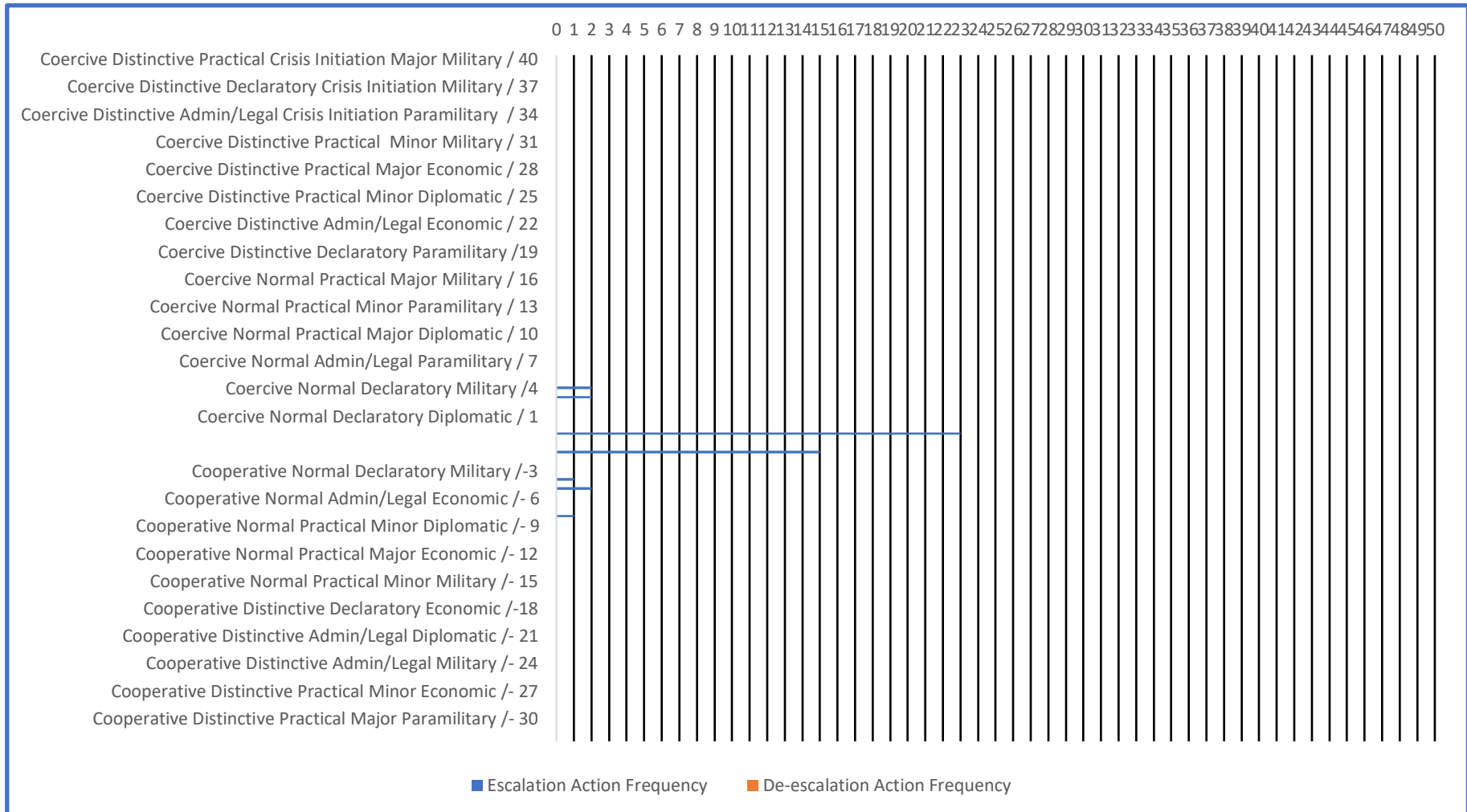


Table 7.2: Malaysia Power and State-Type Summary Table

	Geographic Feature and Type						
	Louisa Reef (Sec B)	Swallow Reef (CoG)			Commodore Reef (Sec B)	Barque Canada Reef (Sec B)	Amboyna Cay (Sec A)
Claimed	PRC, ROC, VNM, MLY, BRN	CHN, MLY, TWN, VNM			CHN, MLY, TWN, VNM	CHN, MLY, TWN, VNM	CHN, MLY, PHL, TWN, VNM
Controlled	N/A	MLY			PHL/USN*	VNM	VNM
Distance from Bases	250	280			330	390	390
Malaysian Operational need	EMEZ - BRN	SD - CHN	SD - TWN	SD - VNM	EMEZ	EMEZ	AA/MEZ
1995	S	S	I	S	I	I	DP
1995	DR	INS	INS	INS	WK	WK	DR
1996	S	S	I	S	I	I	DP
1996	DR	INS	INS	INS	WK	WK	DR
1997	S	S	I	S	I	I	DP
1997	DR	INS	INS	INS	WK	WK	DR
1998	S	S	I	S	I	I	DP
1998	DR	INS	INS	INS	WK	WK	DR
1999	S	S	I	S	I	I	DP
1999	DR	INS	INS	OR	WK	WK	DR(GS)

2000	S	S	I	S	I	I	DP
2000	DR	INS	INS	INS	WK	WK	DR
2001	S	S	I	S	I	I	DP
2001	DR	INS	INS	INS	WK	WK	DR
2002	S	S	I	S	I	I	DP
2002	DR	INS	INS	INS	WK	WK	DR
2003	S	S	I	S	I	I	DP
2003	DR(GS)/OR(PTT)	INS	INS	INS	WK	WK	DR
2004	S	RP	I	S	I	I	DP
2004	DR	INS	INS	INS	WK	WK	DR
2005	S	RP	I	S	I	I	DP
2005	DR	DR	INS	INS	WK	WK	DR
2006	S	DP	I	S	I	I	DP
2006	DR	INS	INS	INS	WK	WK	DR
2007	S	DP	I	S	I	I	DP
2007	DR	INS	INS	INS	WK	WK	DR
2008	S	DP	I	S	I	I	DP
2008	DR	INS	INS	INS	WK	WK	DR
2009	S	DP	I	S	I	I	DP
2009	DR(GLS)	DR(GS)/OR	IRL	DR(GS)/OR	WK	WK	DR
2010	S	I	I	S	I	I	I
2010	DR-N/A	WK	INS	INS	WK	WK	WK

2011	S	I	I	S	I	I	I
2011	DR-N/A	WK	INS	DR	WK	WK	WK
2012	S	I	I	S	I	I	I
2012	DR-N/A	WK	INS	DR	WK	WK	WK
2013	S	I	I	S	I	I	I
2013	DR-N/A	WK	INS	DR	WK	WK	WK
2014	S	I	I	S	I	I	I
2014	DR-N/A	WK	INS	DR	WK	WK	WK
2015	S	I	I	S	I	I	I
2015	DR-N/A	WK	INS	DR	WK	WK	WK

Notes: Each pair of annual row shows Malaysia power ratings at MPA sites for that year followed by a state-type assessment at each location. Unless otherwise noted all data and terms are as per power assessment tables in Chapter Six. state-type assessment coding: Offensive Realism: OR, Defensive Realism: DR, Power Transition Theory: PTT, Balance of Power Theory: BOP, Gains Sensitive: GS, Gains Less-Sensitive: GLS, Irrational: IRL, Weak: WK, Insufficient Information: INS. Relevant state-type colour codes:

IRL	WK	INS	DR(GLS)	DR	DR(GS)	DR(GS)/OR	DR(GS)/OR(PTT)	OR
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### **Overview: Quantitative Analysis Process**

Once any nation's total results were available for the 21-year period, these were assessed quantitatively to determine which state-types were most reflected in its outcomes, both in terms of numerical totals and percentages of activity. The overall results were also examined for broader state-type patterns that aligned with those discussed in Chapter Three – namely, that OR nations should rapidly favour a shift towards distinctive coercive (para)militarised strategies when they assess the balance of power is in their favour. All identified patterns supported the assessments reached from the numerical totals. This discussion is addressed in Section III of the TAD.

Finally, all the nation-specific totals were aggregated together, and the results assessed against the six questions (three strong, three weak) noted in Chapters One and Three that are designed to provide mutually reinforcing answers to the key research questions of *if, how, and when*. The six questions are not listed here, to avoid repetition, but are discussed and answered in Section III of this Chapter.

### **Costs and Benefits of the Approach**

Overall, the key benefit of the methodology described above is that it enables a holistic consideration of nations' strategies at MPA locations, providing a more informed means to ascertain their motivations. The utility of this approach is that it captures the many ways that nations can pursue their aims in a sophisticated and realistic manner. After all, Beijing does not need to sail a fleet to Thitu to make its intentions on the island clear to Manila.

A key cost is the debatable applicability of some behaviours (notably General Actions) as part of states' deliberate strategies towards other nations. For example, are China's repeated generic asserts of sovereignty over most of the SCS truly part of Beijing's individual strategies towards, for example, Taiwan's Itu Aba or Vietnam's Spratly Island? And noting this, might such behaviours not be a weak

basis for judgements of state-type, as sometimes occurs in the AAD when more directly relevant actions are absent? Or when such more specific actions exist, and they contradict the direction of more general behaviours, might not the latter more sensibly be set aside?

Such concerns are addressed by both conceptual and practical means. Under Realism, states are considered purposeful and rational agents; hence they are deliberately responsible for the actions they take – indeed the notion of deliberate action underpins the definition of strategy. Thus, when nations take *any* actions relevant to a location they must be considered to be acting consciously, and so all such behaviours should be included when assessing motivation.

Indeed, any different approach, such as one that seeks to reject certain activities (let alone broad swaths), begins to undermine the entire concept of states conducting deliberate strategy, and does so at some arbitrary point. Hence if only general actions by a nation are available to make an assessment, this must be presumed as a deliberate choice by the target state in question and its motivations assessed in kind. And from a practical view, if more specific actions are available they provide more qualitative weight, but general acts are not ignored.

A second key cost is that the assessment methodology can generate results that appear, at first glance, intuitively questionable due to one action potentially generating different assessment outcomes at various locations, or for different states at one location, as affected by the balance of power. So, if a nation conducts a broad generally relevant cooperative gesture (such as Beijing asserting that it seeks a peaceful resolution of SCS disputes), this is classed as cooperative in situations where China is strong but meaningless where it is weak. In turn, Manila's threatening of Beijing with war in the region in 1998 is assessed as distinctly coercive in situations where the Philippines is strong, yet irrational where it is weak.

Yet such results, in fact, reflect the logical reality of the different effects of states' actions where balances of power vary. So, highly cooperative behaviours where a

nation is weak and has few, if any, other means to pursue its objectives, logically reveal little of its motivations – yet say much where it is powerful. Also, nations do, repeatedly, undertake actions that are concurrently sensible and foolish – and in doing so take calculated risks. So, North Korea’s sporadic atomic threats towards South Korea are both a plausible threat to non-nuclear armed Seoul but clearly irrational towards Washington, which would retaliate on a massive scale if American forces stationed in the South were immolated. Yet Pyongyang’s threats continue regardless.

Further, the reality of diverse outcomes from single actions is implicitly addressed by states engaging in additional country-specific behaviours rather than just relying on broad-brush “blunt instruments”. After all, if nations could rely on actions to give consistent results in all cases, it would be more efficient for them not to also conduct further country-specific behaviours – yet they clearly do.

Further to these considerations, the approach proposed here is considered to be a useful and fit-for-purpose approach to assessing states’ strategies in complex environments. And the issues raised above, and a range of others, are addressed by further counting rules discussed in the TAD.

## **Section II: Reporting of Results**

This portion of the chapter now reports the aggregated results of applying the process discussed in Section I to the dataset provided by NDU, as cross-referenced to the military power assessments discussed in Chapter Six. The focus here is on the aggregated results as these provide the basis for answering the research questions. Of course, the details of this process are discussed, and practically conducted in, the TAD and the associated AAD, with the work there also encompassing the discussion of outcomes for individual states. But in summary, some 1,650 actions by nations were used to conduct 1,371 annual assessments of countries’ behaviour, aligning with the equivalent number of analyses conducted for military power.

Before reporting on the outcomes of this process, it should be noted that for the behaviour-assessment methodology to be conducted effectively, some baseline of states' interactions for 1995 (the start of the investigation period) needed to be established first. This reflects the point made in Chapter Three that what might be considered distinctive behaviours can become normalised in certain relationships – such as North Korea's almost formulaic nuclear threats towards the United States.

Further to this, a review of sources<sup>243</sup> was conducted to examine whether any of the states under consideration had pre-existing excessively poor or convivial relations. This research indicated that most of the states had essentially cordial if somewhat distant relationships in 1995. The exception of course is China and Taiwan, but even here the early 1990s had seen a thaw in a previously more antagonistic relationship (Winberg, 1999).

Based on this, the basic schema and exemplars of normal and distinctive strategies defined in Chapter Three were judged appropriate. That is, they could be used to assess each claimant nations' actions to attempt to identify its state-type. Finally, the results reported below contain totals that may not add perfectly due to rounding. This has no significant effect on the outcomes of the analysis.

### **Reporting of Aggregated Results**

Of the 1,371 analyses conducted, 873 (64%) were judged to provide no useful information, with this principally reflecting either a lack of distinctive activity at defensive locations or nations engaging in cooperative behaviour when they were weak. This left a remainder of 498 useful assessment outcomes. These results, including a breakdown per nation, are shown in Table 7.3 below.

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<sup>243</sup> Including Thayer (1994), Baker (2004), Winberg (1999), and various Foreign Ministries' summaries of relations.



Table 7.3: Totals of Overall Results

Nation-Specific Results				Aggregated Results	
Nation	Total Number of assessments	Total Useful Assessments	% of Useful Assessments	% Total N = 1,371	% Useful Results N = 498
BRN	105	0	0	8	0
CHN	402	200	50	29	40
MLY	147	39	27	11	8
PHL	189	35	19	14	7
TWN	234	178	76	17	36
VNM	294	46	16	21	9
<b>Total</b>	<b>1,371</b>	<b>498</b>	<b>N/A</b>	<b>100</b>	<b>100</b>

Of the 498 useful assessments, the vast majority (472 or 95%) fell into some category of DR, either specifically GS or GLS, or simply DR more broadly. This rose to 491 or 99% if considering behaviours that supported either DR(GS) or OR outcomes, and so arguably still support DR. Only seven assessments supported an OR result, and only five provided any insight into BOP vice PTT.

These results are shown in Table 7.4 below, which summarises numbers of assessed outcomes. For this table, and succeeding ones in this section, only those types of predicted behaviours that actually occurred in the data are shown. So, no OR(BOP) results are shown as no such behaviours are assessed to have been demonstrated across the dataset.

While Table 7.4 usefully summarises quantities of results, these outcomes of course are over-influenced by those states, namely China and Taiwan, that opportunely had more, and more useful, assessment opportunities. To address this, and provide a common basis for theory analysis, Table 7.5 was developed. This, firstly, shows the results as percentages of observed state behaviours (e.g., 10% of China's useful assessments vice 49% for those of the Philippines were coded DR(GLS)). Considering data in this way provides a more even-handed, and hence better, means to compare strategies between states.

Table 7.4: Numerical Totals of Useful Results

		Theory Types								
		DR Variants				DR or OR			OR(BOP)	
Nation	National Total	DR(GLS)	DR	DR(GS)	DR(GS)BOP	DR(GS)/OR	(DR(GS)/OR) BOP	(DR(GS)/OR) PTT	OR(BOP)	OR
BRN	0	0	0	0	0	0	0	0	0	0
CHN	200	19	32	137	2	5	1	0	0	4
MLY	39	1	33	1	0	2	0	1	0	1
PHL	35	17	14	3	0	0	0	0	1	0
TWN	178	8	102	57	0	10	0	0	0	1
VNM	46	2	40	4	0	0	0	0	0	0
Subtotal	498	47	221	202	2	17	1	1	1	6
Theory Groups		472				19			7	
Total		498								

Table 7.5: Useful Results as National Percentages and Moderated Averages

Theory Types as Percentage of State Behaviours										
		DR Variants				DR or OR			OR(BOP)	
Nation	National Total*	DR(GLS)	DR	DR(GS)	DR(GS)BOP	DR(GS)/OR	(DR(GS)/OR) BOP	(DR(GS)/OR) PTT	OR(BOP)	OR
BRN	0	0	0	0	0	0	0	0	0	0
CHN	102	10	16	69	1	3	1	0	0	2
MLY	102	3	85	3	0	5	0	3	0	3
PHL	101	49	40	9	0	0	0	0	3	0
TWN	100	4	57	32	0	6	0	0	0	1
VNM	100	4	87	9	0	0	0	0	0	0
<b>Theory Types as Moderated Average %**</b>		<b>14</b>	<b>57</b>	<b>24</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>Theory Groups as Moderated Average %**</b>		<b>95</b>				<b>4</b>			<b>2</b>	
<b>Total %</b>		<b>101</b>								

Notes: \*National totals represent the sum of the percentages shown in each row. Each percentage reflects the proportion of that state's useful assessments comprised of that particular behaviour. For example, 16% of China's total assessments were coded DR. \*\*Moderated averages reflect the sum of each behaviour type (e.g., all DR percentages) divided by five (the number of nations that provided useful results). This reflects the average proportion that the particular outcome occurred as a percentage of the dataset.

Secondly, Table 7.5 also presents the data as moderated averages. These show the proportion of each result observed as part of the overall total. For example, using this methodology, states behaved in a DR manner on average 57% of the time, and in a DR(GS) manner a further 24% of the time. These moderated averages were developed by summing the percentages of each national total and dividing the total by five, reflecting that only five nations provided useable data. Again, this provides a better means to assess the overall prevalence of observed behaviours without being disproportionately weighted by China and Taiwan.

Using these methods, again the results are clear. As a moderated average, 95% of behaviours are DR aligned (99% if DR(GS)/OR results are included), with 57% of the total being coarse DR assessments followed by DR(GS) at 24% and DR(GLS) at 14%. Only 2% of the total supported OR, and only 2% provided insight into BOP vice PTT.

### **Section III: Analysis and Discussion**

The above data can be analysed and discussed in any number of ways, not least to answer the research questions – a task conducted below, and split into three parts. The first directly answers the questions of *if, how, and when*. The second discusses these results and makes further comments on selected other matters. The final section compares the answers here to those that may be derived from other works.

#### **Answering the Research Questions**

As noted in Chapter One, the driving focus for this dissertation is to answer three key security studies questions. These are *if* nations are generally primed to initiate war, or whether they seek to avoid conflict; *how* tendencies for belligerence or peaceable cooperation can be identified in countries; and *when* aggressive states are most likely to attack – in terms of what military power conditions support commencing armed action.

The methodology used to resolve these questions was conduct of a mixed focussed comparison and statistical-correlative test of five theoretical models that offered different answers to the research queries. With 498 instances of useful data now generated, these can now be quantitatively interrogated to show which model's predictions occurred most often overall – that is, which model is more congruent with reality, and so has greater explanatory power for the research questions.

### **Answering *If Nations are Inclined to War***

As noted in Chapters One and Three, the issue of *if* is assessed in two ways. Firstly, as a stronger test, those instances of when “war” (i.e., land grabs or major war) occurred in the dataset can be considered to see what proportion were initiated by, or conducted in a way consistent with, DR(GLS), DR(GS) and OR predictions. This allows the characterisation of *actual* conflicts to assess whether they arose from nations being generally primed to initiate violence. After all, if most wars, for example, arise from a pattern of DR behaviours, then it can be argued that they represent the last resort of essentially non-aggressive states, and so most nations are not inclined to conflict. But if OR is prominent, then the opposite holds true.

Also, a weaker test can be made for the overall proportion of states that can be positively categorised as DR(GS), DR(GLS) or OR, with this serving as an indicator of tendencies towards aggression – a result notionally generalisable to a wider sample. This test can be conducted by considering for each nation the proportion of its assessments that align with DR or OR in general, or a more specific subtype such as DR(GS). If a very high percentage of behaviours indicate a state-type, this can be treated as that nation's governing motivation. This assessment can be supported by considering multi-year patterns of state-type results to test for consistency as balances of power shift. Rapid change towards militarisation is predicted by OR, whereas DR predicts more stable and consistent strategy choices, and hence state-type results. Regarding the strong and weak tests:

- *Strong Test Answer.* States are not inclined to initiate war. Out of 498 observations only two rational initiations of “war” occurred:<sup>244</sup> the land grabs by China of Mischief Reef<sup>245</sup> and Scarborough Shoal from the Philippines. Such actions are out of scope for DR(GLS) states, and so clearly do not indicate peaceable intent. Yet both of these activities were conducted in a DR(GS) manner – with Beijing engaging in a range of de-escalatory and cooperative actions towards Manila, rather than the persistent escalation expected of OR states, so a DR(GS) assessment is most appropriate.

Hence 100% of the total data supports a DR (i.e., war-avoiding) appreciation of whether states seek to initiate conflict, although recalling that for DR(GS) states war (including land grabs) remains a distinct (if unlikely) potential strategy. Of course, the very small sample size constrains the confidence in this assessment. Yet the very rarity of such “war” behaviours aligns with what would be expected from DR states, again supporting with the conclusion that nations are not driven to initiate conflict.

- *Weaker Test Answer.* States are not inclined to initiate war. Every single nation that provided useful data acted overwhelming (90%+) as a DR nation of some type. This strongly argues that, in general, most nations seek to avoid initiating conflict.

These results are shown in [Table 7.6](#), representing the various states’ behaviours overall alignment with OR or DR in general, and also the most represented subtypes. In summary, China is clearly a Opportunistic state (70% DR(GS)/DR(GS)BOP) and Taiwan is likely one also (57% DR, 32% DR(GS)). These outcomes have high confidence due to the large number of useful results, reducing the impact of outliers. Only the Philippines is likely Peaceful (49% DR(GLS)), with

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<sup>244</sup> And one irrational instance (i.e., during power inferiority): Vietnam’s attack on Itu Aba in 1995.

<sup>245</sup> China’s landgrab at Mischief Reef occurred in late 1994 or early 1995, and hence may have been conducted prior to the beginning of the investigation period, regardless it is still included here as one of the rare examples of overt “war” level behaviours that can be investigated.

Vietnam and Malaysia only identifiable as broadly DR (85%+ DR). Confidence in these latter outcomes is reduced due to the lower number of useful results. But offsetting this is each state's high DR percentage – so even multiple outliers would have minimal effect. Also, a consideration of patterns (discussed in the TAD) showed consistency in all states' results as balances of power shifted, supporting a DR interpretation.

Table 7.6: Summary of State-Type Assessment Results

	China	Malaysia	Philippines	Taiwan	Vietnam
<b>% Results DR vice OR</b>	96% DR	91% DR	98% DR	93% DR	100% DR
<b>% Behaviour Main Subtype DR(GLS)/(GS)/OR</b>	69% DR(GS) 1% DR(GS)BOP 16% DR 10% DR(GLS)	85% DR 3% DR(GS) 3% DR(GLS)	49% DR(GLS) 40% DR 9% DR(GS)	57% DR 32% DR(GS) 4% DR(GLS)	87% DR 9% DR(GS) 4% DR(GLS)
<b>Assessed State-Type</b>	DR(GS)	DR	DR(GLS)	DR(GS)	DR
<b>Confidence &amp; Basis</b>	High N = 200; 50% total	Medium N = 39; 27% total	Medium N = 35 19% total	High N = 178 76% total	Medium N = 46; 16% total

*Note: Confidence and basis shows the total number of useful observations (e.g., N = 200) used and the percentage these represent of any state's overall results in total.*

### **Answering *How* Tendencies for Aggression or Peace Can Be Identified**

The issue of *how* individual tendencies for belligerence or cooperation can be determined is also assessed in two ways. Firstly, this can be tested by asking what proportion of states' behaviour overall aligns with the predictions of DR(GS), DR(GLS) or OR, or must be judged fundamentally irrational or unexplainable. If much is irrational, the explanatory power of the theories is in jeopardy; indeed, arguably they are shown to be false. Secondly, more weakly, even if the overall proportion of irrational actions is low, these may be concentrated in a few specific states. If some nations act principally irrationally, this too indicates that important gaps exist in the theories' explanatory power. Regarding these tests:

- *Strong and Weak Test Answer.* Nations’ individual tendencies can be identified with confidence, as only 17 instances of irrational behaviour were identified (i.e., where weak nations engaged in distinctive coercion). Adding these to the total of 498 useful results (i.e., 515 outcomes in total), the irrational results represent 3% of the total – a marginal result. Hence, SR is not falsified. Also, in no instance did any nation overall act irrationally, with at most 17% of assessments (for the Philippines) showing irrational behaviour.

While irrational results are not specifically shown in the data in Section II, they are captured in [Table 7.7](#) below. Of note, in comparison to previously reported data the useful totals of actions in the table now include the irrational assessments.

Incidentally, the results in [Table 7.7](#) also indicate clearly that these results would not influence the individual state-type assessments discussed above. At most, 17% of the Philippines behaviours were irrational; had all these been counted as OR, then Manila’s total assessments (now N = 42) would still be comprised of 80% DR behaviours, with 20% as OR.

Table 7.7: Irrational Behaviours

Nation-Specific Results				Aggregated Results
Nation	Total Useful Assessments Incl Irrational	Total Irrational Assessments	% of Irrational Assessments	% of Useful Results (N = 515)
BRN	0	0	0	0
CHN	207	7	3	1
MLY	40	1	3	0
PHL	42	7	17	1
TWN	178	0	0	0
VNM	48	2	4	0
<b>Total</b>	<b>515</b>	<b>17</b>	<b>N/A</b>	<b>3</b>



## Answering *When Aggression Is Most Likely to Occur*

Finally, to address *when* aggression is most likely to occur, this too is assessed via stronger and weaker tests. The stronger is to ask what proportion of instances of war occurred in alignment with the predictions of BOP vice PTT. Also, as a weaker test, what proportion of aggressive behaviours short of war but risking escalation aligned with these conditions? Alternatively, what conditions were in place when nations' annual behaviours focussed on persistent or principally economic or diplomatic distinctive coercion? The latter would reflect an OR state assessing that the balance of power was not opportune for aggression. Regarding these tests:

- *Strong Test Answer.* states are driven by BOP. Specifically, only two rational instances of “war” behaviour occurred: China’s two land grabs against Mischief Reef in 1994–1995 and Scarborough Shoal in 2012. And both of these occurred during clear Chinese power superiority over Manila. However, the small sample size constrains confidence in this assessment.
- *Weaker Test Answer.* In turn, two other instances of “sub-war” behaviour occurred, with one each supporting BOP and PTT. The first was Beijing’s conduct (when at power superiority) of militarised distinctive coercion at Scarborough Shoal in 2001, by operating naval helicopter missions in close proximity. The other was distinctive economic coercion by Malaysia towards Brunei at Louisa Reef in 2003, by awarding foreign companies oil exploration contracts that appeared to cover the site. Such behaviour, if viewed from an OR perspective, favours a PTT interpretation as Kuala Lumpur held power superiority, so should have used militarised behaviours if it felt at an opportune moment for aggression – yet it did not do so.

In terms of the above, then, 75% of the analyses that provided useful BOP vice PTT information favoured the former. Yet as these are four of 498 assessments, barely 1% of the sample, this provides scant basis to build confidence in this result.

## Summary and Overview: Which Model Best Explains the Results?

This work set out to address *if, how, and when* via testing five different models that provided differing predictions: DR(GLS), DR(GS)BOP, DR(GS)PTT, OR(BOP) and OR(PTT). So, which of these has proven most persuasive?

Unfortunately, a precise answer is impossible. Most clearly, OR is conclusively disproven: at most 5% of actions aligned with Revisionist tendencies (a total including “DR(GS)/OR” assessments that support either) and only 2% unequivocally. Further, each individual nation was, very clearly, some form of DR state.

Yet beyond this, positions become uncertain or lack confidence. The limited instances (four in total) of war and sub-war behaviour make a test of BOP and PTT an uncertain affair in this sample, even if the limited results clearly favour BOP. Yet the limited data is unsurprising since Status Quo and Peaceful nations do not favour the types of distinctive paramilitary and militarised behaviours that indicate states’ views on what balance of military power suits aggression.

Further, it is difficult to divine whether DR(GS) or DR(GLS) best describes the motivations of various countries under consideration, although, on balance, DR(GS) appears more likely. This conclusion reflects, firstly, that while coarse DR behaviour predominates in the moderated averages (57%), DR(GS) behaviour follows at 24% and DR(GLS) at 17%. So, simply as a matter of proportion, DR(GS) seems more likely.

Secondly, there are more DR(GS) individual states, with China clearly a Opportunistic country and Taiwan most likely being one also. In turn only the Philippines is mostly likely a Peaceful nation. Yet both Vietnam and Malaysia are “swing states”, with the vast majority of their assessments only being coarse DR. Hence, while DR(GS) nations hold a two-to-one lead, there remains the potential to be edged out should Hanoi and Kuala Lumpur be shown to be Peaceful. Finally, as an additional qualitative comment, Brunei too behaved principally as an indeterminate DR state, although no conclusions can be drawn due to its weakness.

Yet despite these limitations some form of judgement is necessary. Hence, based on the above, overall DR(GS)BOP must be judged the theory with results most congruent with reality. The overall summary of testing outcomes that supports this assessment is shown in Table 7.8 below.

Table 7.8: Summary SCS Results

Testing <i>If</i>		Testing <i>How</i>		Testing <i>When</i>	
Strong Test % of Wars Under DR(GLS)/(GS)/OR	Weaker Test % states Identified as DR(GLS)/(GS)/OR	Strong Test % of IRL Acts	Weaker Test % states IRL	Strong Test % of Wars PTT vs BOP	Weaker Test % of Acts* PTT vs BOP
100% DR(GS) (N = 2)	100% DR: 20% GLS; 40% GS; 40% DR (N = 5)	3% (N = 515)	0% (N = 5)	100% BOP (N = 2)	50% PTT; 50% BOP (N = 2)

Notes: \*sub-war or persistent non-militarised coercion. IRL: Irrational

### **Further Commentary on Results**

A variety of additional comments can be offered to sensitise the above conclusions. In particular, these serve to show that OR can be considered conclusively disproven, that DR(GLS) may be under-represented in the outcomes, and that additional bases for confidence exist in the superiority of the DR outcome.

### **Additional Considerations on Offensive Realism**

The data shows that OR is the theory with, by far, the least explanatory power regarding how states behave. But this might be questioned noting that most nations tested are not Great Powers, which both OR and DR focus on. Yet as observed in Chapter Six, the SCS well meets Waltz and Mearsheimer’s requirements that their theories should guide those smaller nations insulated from Great Powers “whether by the relative indifference of the latter or by difficulties of

communication and transportation". Despite this, no smaller country behaved as a Revisionist.

Alternatively, it might be argued that China, as the most powerful nation considered, was already a hegemon in the region, and so under Mearsheimer's forecast should act as Status Quo power. Yet this is disproven by China's overt military weakness at the beginning of the period. Or it might be suggested that China was constrained from aggression by the presence of the United States in the region. Yet Washington did not interfere when China seized Mischief Reef or Scarborough Shoal, and that was when Beijing threatened the territory of an American treaty ally. Why then should China have been concerned over, say, a US response to seizing Spratly Island from America's erstwhile enemy Vietnam?

#### **Additional Considerations on Gains Less-Sensitive Realism**

In turn, DR(GLS) arguably might be under-represented, noting that even Peaceful states, if fearful that they are faced with committed Revisionists, do not engage in the types of cooperation that would reveal their intent. Yet as discussed in the TAD, all the nations in the SCS did engage in a range of various low-level cooperative gestures that should have provided some basis for confidence in building cooperation. Further, Brunei, Malaysia, the Philippines and Vietnam consistently pushed for a legally binding Code of Conduct (CoC) that would constrain all states' ability to engage in conflict and promote peaceful resolution of disputes.<sup>246</sup> Such repeated willingness to engage in high-level cooperation would seem at odds with fundamentally suspicious states opposed to collaboration.

Alternatively, Tang notes that DR(GLS) states may not be able to engage in cooperation if they find themselves in a fundamentally irreconcilable dispute with others (2010a, pp. 112–113). And territory might seem just such a matter. Yet such disputes clearly can be resolved, and peacefully and consensually at that, as shown

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<sup>246</sup> With the exception of Taiwan, the involvement of which China rejected, noting Beijing's view of Taipei as a renegade province.

not least by Malaysia and Brunei doing so (in Brunei's favour) over Louisa Reef in 2009 (discussed in the TAD). More broadly, Hensel (2012) points out that in a review of 122 territorial disputes, 55% never become militarised and that out of 772 resolution attempts for a different dataset, negotiations and adjudication were the most common and successful means to resolve disputes. Such figures make it seem implausible that states writ large consider territorial disputes irreconcilable.

### **Additional Considerations on Gains-Sensitive Defensive Realism**

Finally, there is DR(GS). Ironically, considering Waltz's aversion to predicting behaviours, of all the theories put forward, his has proven most congruent with reality. While this very proposition may appear incompatible with DR, the conclusions in terms of the types of behaviours that Status Quo states should prefer arise clearly once an appropriate framework of strategies has been constructed – something Waltz did not attempt. Further, the approach developed here aligns with Waltz's argument that detailed policy forecasts cannot be made based on theory alone. Much as Waltz argued that DR could no more augur specific choices any more than the theory of gravity could foretell the path of a falling leaf (1979, p. 121), the predictions developed here in terms of scope and direction make no claim as to what any individual nation will do at a point in time on a specific matter. Yet by defining the types and preferences of strategies that DR states should show, Opportunistic nations become identifiable and, to an extent, their likely types of behaviours forecastable.

Finally, the predictive power of DR(GS) might be considered as a by-product of the fact that the predictions developed for it regarding scope and direction cover arguably the widest span of state behaviour. After all, all nations are expected (even under DR(GLS) and OR, and regardless of their motivations) to use mixed strategies, and the DR(GS) descriptions developed here most reflect this expectation. Yet on matters as important to state survival as territory, this logically presents the most opportunity for nations to use precisely those more distinctive strategies available to them to gain their ends quickly (for OR), or to demonstrate their peaceful bona

fides in the most credible way (for DR(GLS)). The repeated lack of such demonstrations, over 21 years, argues that, indeed the Status Quo state does lie at the heart of the international system.

### **Observations on the Nature of DR(GS) Behaviour**

As noted in Chapter Three, Opportunistic states are expected to display strongly mixed behaviours, either varying an approach to a single nation over time (such as being principally cooperative, then later principally coercive); or displaying concurrent strongly mixed behaviours; or displaying combinations of these between countries. Also, any changes in direction should have little relationship to changes in the balance of power. In fact, all DR(GS) assessments arose because of nations displaying concurrent strongly mixed strategies in offensive and defensive scenarios, or responding with matched coercion or cooperation, rather than displaying an approach which varied over time.<sup>247</sup> Also, all states displayed a DR(GS) typical lack of reaction to balances of power. Finally, some weaker broad patterns were detected in Taiwan and China's approaches over time, and these are discussed in the TAD, but these too align with the existing DR(GS) assessments developed from their annual behaviours.

### **Comments on China's Assessment as a DR(GS) State**

For readers familiar with key events in the SCS during 1995–2015, the assessment that China is a DR(GS) state may appear incongruous, given certain key events and trends. After all, China did engage in the only two land grabs in the period. Also, in 2014, Beijing commenced substantial island-building activities in the SCS that in 12 months dwarfed those conducted by other claimants over the last 40 years (Department of Defense, 2015) and then also constructed major military facilities upon these (LaGrone, 2015). Such actions clearly have the potential to change the balance of power (and indeed are considered as typical OR behaviours in the TAD).

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<sup>247</sup> Noting that DR(GLS) nations should respond with reduced coercion and enhanced cooperation, and OR states with enhanced coercion.

Finally, less well recognised, China's military and paramilitary exercises and patrols vastly outpaced those of other claimants: across the dataset some 187 instances of such actions were identified for all nations; 170 of these were by Beijing.

How are such actions compatible with a Status Quo assessment? In short, fairly easily. As noted in Chapter Three, nothing prevents a DR(GS) state from capturing territory, in particular small "chunks" not expected to majorly shift the balance of power – hence why such behaviours are included in the DR(GS) scope. And China acted precisely in this way with its land grabs. In turn, Opportunistic nations are also expected to frequently favour low-level coercion, and military exercises are an ideal means of doing so.

Lastly, the island-building and especially militarisation are indeed considered to be hallmarks of self-initiated, OR-style control-enforcing behaviour. Yet these acts comprise only a small proportion of Beijing's activities, and were offset by cooperative gestures also offered towards most other claimants (leading to mainly DR(GS) assessments when considering the "stack" of behaviours). Further, although outside the scope of the assessment period, the militarisation of these features has not, in the succeeding nearly seven years since their completion, led to overtly more Revisionist behaviour by Beijing. Hence these acts too appear to align with outlier behaviours by a DR state, rather than a revelation of an offensive intent.

### **Comparison with Other Works**

The above results provide a certain view of the answers to *if, how, and when*, but how do these compare with other works in the literature? As discussed extensively in Chapter Two, few if any other authors have attempted the methodology used here, making a direct "like-for-like" appraisal problematic. Yet two key works use approaches similar enough in terms of assessing strategies and considering military power to allow for a sensible comparison using the various strong and weak tests noted above.

## Factors Supporting Comparison

First, and as noted in Chapter Two, is Leng's *Interstate Crisis Behavior* (1993a). Leng sets out to determine whether Realism (effectively OR) or what he terms "psychological" approaches best explain the strategy choices made by actors (states or groups of states) to resolve disputes. He tests this via examining pairs of actors' behaviour in 40 Militarised Interstate Crises<sup>248</sup> (with these including, but not limited to, territorial disputes) during 1816–1980 to see which strategies predominated.

Leng assessed his results through considering the preponderance of five types of strategies, in the sense of patterns of behaviour that states favour to resolve a crisis, with these mainly defined by whether they show a preference to increase, match, or decrease coercion (1993a, pp. 137–163). This clearly allows such strategies to be compared to OR (matching Leng's "bullying" strategy of persistent coercive escalation regardless of others' actions), DR(GS) (matching "Trial and Error" and "Stonewalling") and DR(GLS) (matching "Reciprocating" and "Appeasement").

Leng supports his analysis by considering the military balance of power between parties, defined in terms of each actor's likely view of its potential to win easily, have an even chance of victory, or to likely lose. This matches the description used here in Chapter Five, in the sense that the assessed balance attempts to discern any state's views of the potential for easy victory.

The second key work is Huth and Allee's *The Democratic Peace and Territorial Conflict in the Twentieth Century* (2003), with their results also captured in a paper drawing on the same work (2002). Huth and Allee's focus is on 348 territorial disputes between pairs of states from 1919–1995, with an aim to identify links between types of government (democracies vice autocracies) and tendencies for militarised escalation and peaceful settlement in these disputes.

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<sup>248</sup> Situations where disputes had already led to the reciprocal demonstration, threat or use of force.



Huth and Allee's work too examines nations by considering, on an annual basis, each challenger state's (i.e., the country not in control of the territory) decision to do nothing, initiate negotiations or initiate militarisation, and the responses of the controlling nation in turn.<sup>249</sup> In turn, Huth and Allee define militarisation as the non-routine threat, demonstration or use of force. Such actions can either be low escalation (initiating limited military preparations and build-up, and maintaining this approach even if the other party responds with high escalation); or high escalation (initiating large-scale mobilisation and/or attack).

Regarding states' decisions, if nations choose to do nothing or initiate negotiation, this clearly aligns with the broad behaviour expected of DR states. In turn, Huth and Allee's definition of militarisation aligns with that of distinctive militarisation used here. Hence the option to initiate low-level militarisation can be considered equivalent to DR(GS) behaviour, and high escalation to OR behaviour.

Huth and Allee also support their analysis by comparing states' decisions with balances of power via the Correlates of War (COW) database, which uses an indirect approach (i.e., comparing tertiary factors such as personnel totals and steel production), harnessing the CINC model discussed in Chapter Four.

### **Constraints**

The key constraints on comparison between these studies and this dissertation are data fidelity, definitions of terms and the applicability of selected nations. On the first point, both Leng's and Huth and Allee's datasets clearly have the granularity to allow the types of assessment conducted in this dissertation; however, their results are reported in aggregate, preventing a "like-for-like" comparison of issues such as balances of power at specific times, or when various types of behaviours occurred, and instead necessitating somewhat coarser measures. Further, Leng's work

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<sup>249</sup> Resulting in 6,542 annual observations (Huth & Allee) 2002, pp. 756, 766).

focusses on crises, potentially skewing states' behaviours as they are already under duress.

Secondly, both other works' power measures are somewhat incommensurable with the approach used here. Leng's model essentially lacks any structure, using simply "capability indicators ... drawn from the accounts of diplomatic historians" (1993a, p. 48) – with this approach being used to attempt to capture nations' *perceptions* of their chances of victory. In turn, the tertiary power models such as CINC bear little conceptual or practical correlation to how military force is exercised.

Finally, OR and DR – including DR(GS) and DR(GLS) – are intended to apply to Great Powers and those smaller nations suitably insulated from their reach, with DR(GS) behavioural expectations most particularly applying to loosely associated states. Indeed, it was the suitability of the SCS to meet these criteria that led to its selection as the test case. In turn, Leng's and Huth and Allee's data has not been vetted to consider these criteria, and doing so would involve a detailed knowledge of the international relations between hundreds of states over the course of some 178 years – something certainly beyond the scope of this dissertation.

### **Means to Compare Results**

Yet despite these limitations, it is possible, for the purposes of discussion, to assume that the models' measures of power are compatible with that used in this dissertation, and that their tested states meet the criteria of being suitable to be addressed by OR and DR. If this pair of not inconsiderable assumptions is taken on board, a range of sensible means are available to allow the comparison of much (but not all) of Leng's and Huth and Allee's work for *if, how, and when* in broadly the same manner as that applied to the SCS dataset. These means are discussed below, with the results shown thereafter in Table 7.9, followed by an analysis of the comparative results. In short:

- *A Strong Test of If.* This is typically conducted by considering what percentage of wars are initiated under DR(GS), DR(GLS) and OR conditions. For Leng, his dataset includes 17 instances of war that reflect 17 dyads (i.e., 34 actors), with each actor using one of Leng's five strategies that can be aligned with DR(GS), DR(GLS) and OR. While there is insufficient clarity to determine which actor initiated each conflict, as a rough guide the percentages of states using each strategy were equated with motivations related to conflict. This results in 62% of wars involving OR states, 26% DR(GS) nations and 12% DR(GLS) countries. This contrasts with 100% of wars in the SCS dataset being DR(GS) related. For Huth and Allee, no conclusions could be drawn.
- *A Weaker Test of If.* This is typically conducted by considering the percentages of nations that can positively be identified as a particular state-type. For Leng the proportion of non-irrational nations that favoured each strategy type was considered to represent the prevalence of each state-type overall. This results in 29% OR states, 32% DR(GS) nations and 38% DR(GLS) countries.

For Huth and Allee, the overall proportion of DR- and OR-aligned observations for challengers in the dataset were treated as a representation of the general prevalence of each type of behaviour for states in general. As 94% of each nation's activity is DR aligned (noting 6,152 observations had no action or offers of negotiations), then 100% are DR states (2002, p. 768). The same method is used for the four nations in the SCS that provide useful information in challenge scenarios (China, Malaysia, Taiwan, Vietnam) – which too identifies 100% of states as being DR.

- *A Strong Test of How.* This is typically conducted by considering the percentage of overall behaviours in a dataset considered irrational. No such data was available for Leng, or Huth and Allee.
- *A Weak Test of How.* This is typically conducted by considering how many states in total can be identified as irrational. For Leng, the 80 actors in the 40 crises

were assessed. Those that engaged in a bullying strategy when at power inferiority were judged irrational (8 of 80) and expressed as a percentage of the total of actors (i.e., 10%). For the SCS the previously used results were used – that is, 0% were judged irrational. For Huth and Allee, no conclusions could be drawn.

- *A Strong Test of When.* This is typically conducted by considering the power conditions in place when nations initiated war. For Leng, instances of when war erupted at power superiority vice power parity were compared, resulting in 47% favouring BOP and 53% for PTT. This compares to 100% of wars favouring BOP in the SCS dataset. For Huth and Allee, no conclusions could be drawn.
- *A Weak Test of When.* This is typically conducted by considering the power conditions in place when nations engaged in escalatory sub-war actions or their annual strategy was comprised of persistent or primary economic or diplomatic distinctive coercion. For Leng, no conclusions could be drawn.

For Huth and Allee, the results describing the likelihood of initiating militarisation were considered, which simply show that as power disparities increase, so does the likelihood of initiating aggression (2002, pp. 773–782). This aligns with the BOP interpretation identified in this dissertation.

## **Discussion**

The results of the analysis indicate, in particular, a measure of alignment between the results achieved here and the work by Huth and Allee. This serves to support the SCS results, noting the larger dataset used by these authors. Yet there is also greater diversity between the results of this dissertation and Huth and Allee on the one hand and Leng's outcomes.

Table 7.9: Comparison of Results Against Selected Other Research

Dataset	Testing <i>If</i>		Testing <i>How</i>		Testing <i>When</i>	
	Strong Test % of Wars Under DR(GLS)/(GS)/OR	Weaker Test % Actors Identified as DR(GLS)/(GS)/OR	Strong Test % of IRL acts	Weaker Test % Actors IRL	Strong Test % of Wars PTT vs BOP	Weaker Test % of acts* PTT vs BOP
SCS	100% DR(GS) (N = 2)	100% DR: 50% DR(GS); 50% DR (N = 4)**	3% (N = 515)	0% (N = 5)	100% BOP (N = 2)	50% PTT; 50% BOP (N = 2)
Leng	62% OR, 26% DR(GS); 12% DR(GLS) (N = 17)	29% OR; 32% DR(GS); 38% DR(GLS) (N = 72***)	N/A	10% (N = 80)	47% BOP; 53% PTT (N = 17)	N/A
Huth & Allee	N/A	100% states DR (N = 696***)	N/A	N/A	NA	BOP: Militarisation three more likely under superiority

Notes: The term “actors” is used noting Leng’s work assess dyads that include groups of states. IRL: Irrational. \*sub-war or persistent non-militarised coercion. \*\*To support comparison with Huth and Allee, the number of SCS states considered were those that had offensive objectives and could provide useful information. \*\*\*this reflects a simple doubling of the number of Huth and Allee’s states, or Leng’s actors (subtracting irrational actors), involved in territorial disputes or crises. In fact, in several cases the same actor was represented number times. N/A = Not Applicable (as no sensible analysis deemed possible).

Specifically, while Huth and Allee's data could not be easily parsed to answer most of the research questions, their work did support a weaker test of *if* in the form of whether individual nations' state-type could be positively identified. On this note, 94% of Huth and Allee's observations supported a DR interpretation (i.e., where a challenger does nothing, or at most engages in low-level negotiations). Further, in only 1.3% of observations (89 cases) did the challenger initiate persistent high level militarisation equivalent to OR behaviour (2002, pp. 768–780).

With these percentages, it is reasonable to propose that, as with the SCS dataset, effectively all nations acted as DR states. Indeed, when considering only offensive instances in the SCS dataset, there is even greater congruence between results as, considering weighted averages, only 1% of observations supported OR.<sup>250</sup>

Of note, it might be proposed that Huth and Allee's various percentages of behaviours should be applied evenly to represent 100% of the behaviour of an equal proportion of tested states. In this scenario, the 1.3% of high militarisation would then represent some seven OR states (from a sample of 696 nations). However, this would essentially require those seven states to *only* engage in persistent escalation – an intuitively implausible result considering all state-types are considered to used mixed strategies, and an outcome that would also be at odds with behaviour observed in the SCS. And even if this method is applied, only 1% of countries are OR nations: they are dwarfed by DR in the world order. Huth and Allee's work also supports a weaker test of BOP vice PTT. Here, they find that when challengers have sizeable military advantages, they are three times as likely to threaten military force, and two to three times as likely to escalate to high levels of force (2002, pp. 773–782). This clearly supports a BOP interpretation.

Hence, however imperfectly, Huth and Allee's outcomes for *if* and *when* support the conclusions found here. Also, being drawn from a larger and thematically aligned dataset, they serve to increase confidence in these results obtained.

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<sup>250</sup> Those instances when a challenger initiated or escalated distinctive militarisation in the SCS (including irrational examples).

In turn, the work by Leng clearly finds a greater diversity in all aspects of *if, how, and when*. Far more wars are the result of OR states (62%); around one-third of all nations considered are likely to be Revisionists; 10% of states engaged in irrational behaviour; and BOP vice PTT were almost evenly split in the conditions evident when war erupted. Indeed, the closest alignment to the results found in the SCS arise when considering proportions of state-type. Leng's data suggests that 29% of actors were OR states, 32% DR(GS) and (surprisingly) 38% DR(GLS). This compares in the SCS dataset with 0% OR, 40% DR(GS) (China and Taiwan), 20% DR(GLS) (the Philippines) and 40% indeterminate DR (Malaysia and Vietnam).

A potential explanation for the differences between the work done here and Huth and Allee on the one hand, and Leng's on the other, is that Leng's work considered situations that were *already* crises. This may introduce selection bias, as such situations provide incentive for nations to act in more aggressive means out of desperation. And indeed, for the only two crises in the dataset used here (the Chinese land grabs at Mischief and Louisa Reef), the Philippines in both instances attempted some degree of matched distinctive coercion (and at Mischief Reef, even escalation) even though it was noticeably weaker in both instances. Yet even so, the differences are quite stark, with essentially no nation in the SCS behaving as an OR state for any more than a fraction of its assessments. Yet Leng's work does highlight that the arguably "overly aggressive" model proposed for "OR behaviour" in this dissertation does indeed exist in the real world: nations can and do engage in strategies of persistent and relentless escalation.

These various outcomes highlight the importance for further research to more closely examine the existing datasets to determine whether these differences are deeply reflected in the data at the appropriate level of granularity. As noted in Chapter Eight, this provides the potential for future research.

## Conclusion

This chapter has brought to a close the process of answering *if, how, and when* through theory testing. After an exhaustive review of state behaviours, the most detailed ever conducted in such a manner to the author's knowledge,<sup>251</sup> it can be stated with very high confidence that the vast majority of nations are DR states. And if one theory must be selected as having the most explanatory power, it is DR(GS)BOP.

Hence for *if*, most nations do not seek war. And due to the limited displays of irrationality, most state motivations can be assessed with confidence by examining *how* they behave. And if violence is to occur, it is most likely to do so *when* there is power superiority on the part of one nation or another. Further, these results have been developed under a purposeful and structured approach, supported by counting rules that can usefully be applied to any number of situations.

However, of course, significant constraints still apply. Due to the limited quantity of aggressive behaviours in particular, judgements of *if* and *when* have a severely restricted sample size, affecting confidence in the outcome – even if this is moderated by the overwhelming majority of DR nations overall. Also, the outcomes achieved only align imperfectly with those in the broader literature, though even these comparisons are hindered by a range of matters, not least very different measures of military power. These matters, together with a range of others, are now addressed in the overall conclusion in Chapter Eight.

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<sup>251</sup> Recalling from Chapter Two that practical assessments of state behaviours are few, and those that occur are generally unstructured.



## **Chapter Eight – Conclusion**

The principal aim of this dissertation has been to address three key security studies questions with particular scholarly, policy and normative value. These are *if* nations are generally inclined to war or peace; *how* individual tendencies for cooperation or aggression can be identified; and *when* violence is most likely to occur.

The previous chapter has brought this principal work to a close. Based on the data, states are, clearly, not inclined to war; their motivations can be discerned by their preferences for cooperative and coercive strategies; and, with less confidence than the first two results, that imbalances of power promote conflict.

With these fundamental issues addressed in summary in the initial pages of this dissertation's introduction and then quite exhaustively over the succeeding six chapters, this conclusion turns to briefly consider three additional matters, across three sections. The first reflects on the work done, in terms of whether it also achieved the wider objectives of conducting a breakthrough test, and its various contributions to the IR discipline. The second proposes a range of policy and scholarly implications arising from the results of the dissertation. The third concludes by proposing how future studies might build on the outcomes of the work conducted here and harness some of the novel contributions developed.

### **Section I: Research Reflection**

As described in Chapter One, in addition to addressing *if, how, and when*, this dissertation has also aimed to answer these questions via a potential breakthrough in SR theory testing. This objective arose from the literally thousands of previous efforts that had attempted to address the questions yet had failed to produce conclusive results. As a result, if the answers reached in this dissertation were to have merit beyond being simply one more contestable contribution to the existing

research, then by definition some form of breakthrough, or means to sidestep, the existing analytical impasse was required.

To achieve such a breakthrough, it would be necessary to address the causes of the existing situation – which was principally the result of SR's predictive indeterminacy, driven by three key factors. That is, SR suffers from uncertain forecasts, making it unclear whether predicted outcomes will be observed at all; overlapping predictions, meaning the same results can support competing schools; and poorly defined terms, allowing the same data to be variously interpreted to buttress models predicting differing things.

To tackle these matters, the avenue chosen was to seek a conceptually novel, broadly applicable and strong test of theory. By this was meant, respectively, to conduct an approach that aimed to avoid repeating previous efforts that had not generated compelling results; that would be applicable to diverse problems, to maximise any wider future utility of the work done; and that would increase confidence in the outcomes that were achieved, in comparison to other works.

The methodology chosen to meet these goals was a mixed focussed comparison and statistical-correlative test of SR by analysing patterns of state strategy choices in territorial disputes. This would be done using the assessment of large bespoke datasets, and be supported by clearly defined terms, including an operationally focussed definition and measure of military power.

Indeed using this approach, answers to the key questions have been developed. Yet it is useful to review whether the dissertation has also met the wider objectives associated with achieving a potential breakthrough. And on this note, as with any work, there are grounds both for confidence and certain limiting factors.

## **Conducting a Novel Test**

On whether a novel test has been achieved that offers results usefully different to previous attempts, this is promising. Indeed, while the dissertation has generated numerous original contributions to various areas (discussed further below), as a capstone, the overall integrated methodology used is a key innovation in terms of its conceptual nature and practical application, and the benefits that it offers.

So, to summarise again the approach taken, patterns of structurally driven strategy preferences were proposed that nations operating under each model<sup>252</sup> should display in territorial disputes, as moderated by the balance of military power. These preferences were defined in terms of favoured cooperative and coercive behaviours and included non-militarised and militarised activities – with the latter containing the resort to war. These patterns were then sought in a 21-year dataset of state behaviours, as cross-referenced to another equally large dataset of operational military power. This was used as a means to identify quantities of states motivated by these theories and hence test their explanatory power.

## **Conceptual Benefits**

How does this meet the requirements for a novel and useful test? As an initial point, this approach is original because it takes a classical weakness in terms of SR's doubtful applicability to *how* and uses it to address all three research questions. As discussed in Chapter Two, Waltz in particular had argued DR(GS) cannot predict foreign policies or strategies in any detail. Perhaps because of this, comparatively little effort had been expended in defining structurally driven strategy preferences for DR(GS) or other SR theories, including as balances of power changed – and indeed power itself remained poorly defined and difficult to measure.

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<sup>252</sup> That is, DR(GS)BOP, DR(GS)PTT, DR(GLS), OR(BOP) and OR(PTT).

This in turn hindered theory testing by examining behaviours on any of the key questions, which instead still laboured under the various causes of indeterminacy. As there was no way to differentiate DR(GS) actions from those of any other model, and power was difficult to assess consistently, it was exceedingly difficult to test SR theories via strategies due to there being no common points of reference. Instead, various models' notionally differing predictions for *if, how, and when* were in fact concurrently uncertain, overlapping and undefined.

Yet as shown in this dissertation, by building on the work of various existing SR writers, structurally driven and differentiable strategy predictions can be developed. So, DR(GLS) states prefer increasingly (and ideally highly) cooperative strategies that avoid war; DR(GS) nations seek mid-range coercive and cooperative strategies that shun high levels of either, with war an unfavoured but potential option; and OR nations pursue increasingly (and ideally highly) coercive strategies where war is overtly favoured.

Indeed, these general preferences emerge logically from the theories' structural drivers when joined with the original concept of a strategy continuum having definable mid-range and highly cooperative and highly coercive bands. Considering a framework in this way has been hindered by the lack of suitably defined concepts, including for strategies, state survival and escalating degrees of actions' impact. Yet once these are addressed and a thorough continuum proposed, the general preferences emerge and also generate detailed differences in scope and direction. Further, these can be tested for robustly, and also address BOP vice PTT, once linked to a refined definition, model and dataset of operational military power.

Assessing the theories using this integrated approach (i.e., by examining strategy preferences as supported by refined definitions, notably of military power, across large datasets) brings a range of benefits to help circumvent the causes of indeterminacy. So, as noted in Chapter One, on the matter of *if*, quantities of nations' behaviours during peace and war can now be assessed to determine which

state-types predominate, and whether conflict is generally preferred. This addresses issues of overlapping and uncertain predictions.

In turn, for *how*, broader spans of state-type associated behaviour have been described, addressing undefined terms and allowing motivations to be assessed outside of crises and conflicts, including for inherently motivated nations. And for *when*, sub-war behaviours, supported by an improved measure of military power, address undefined terms and allow for the testing of attitudes to such power even outside of conflict.

Also, additional benefits accrue in terms of sidestepping other causes of indeterminacy. So, as noted in Chapter Two, even differently motivated nations under SR all seek the same ends of survival and security. Hence *what* states desire offers little to distinguish between them in terms of ascertaining their underlying theory-driven worldview. Yet once differentiable strategy preferences are developed, then the *ways* that nations pursue their goals provides a stronger basis for determining their state-type. And by predicting broad patterns, this analysis avoids matters such as whether it is possible to predict specific foreign policies or strategies, or definitional matters such as what comprises a balancing or buck-passing approach.

### **Practical Benefits**

Further to these conceptual issues, the approach is also practically different to those attempted before. So, various assessments of states' strategy choices (such as balancing and buck-passing) and foreign policies have been attempted as a means to conduct (ultimately unconvincing) tests of SR. Yet none appear to have sought out patterns of cooperative and coercive behaviours, especially in a large dataset. Instead, such efforts have focussed on a handful of individual case studies.

Indeed, a pattern-seeking approach does not appear to have been proposed in the wider literature, particularly in the sense of identifying non-militarised types of

strategies that can be considered more and less coercive. Further, when motivation-associated preferences for states have been developed, these have centred on militarised strategies and typically not had a structural basis.

In addition, most previous Realist tests used indirect measures (such as assessments of steel capacity and defence budgets) or quantitative gauges of military power (such as comparing numbers of troops). And these bear little relationship to the key logical criteria for measuring such power: the potential for success in battle.

In contrast, the approach used here not only appears to be the first to carefully define broad swaths of theory-associated militarised and non-militarised behaviours, and measure operational military power, but also to conduct testing on an unparalleled scale when considering a mixed qualitative-quantitative approach.

That is, the work here represents the largest structured use of behavioural approaches to assess strategy types and test theories (in the TAD) and the largest publicly available operationally focussed systemic assessment of military power (in the MPA).<sup>253</sup> And the operational definition and process to measure military power that were developed are, it is proposed, much more appropriate means to assess power and so conduct theory testing. This provides more confidence in assessment outcomes, particularly in territorial disputes where an operational victory can directly resolve the issue by capturing the area outright.

### **Developing a Broad Approach**

The points above provide solid grounds for arguing that the methodology used is conceptually and practically novel and logically offers a range of benefits. It also would appear to be broadly applicable. This reflects, firstly, that while few works overtly focus on patterns of strategies, as shown in Chapter Seven there exist a

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<sup>253</sup> Noting that regarding military power, various proprietary computer models may make similar assessments but are not readily accessible.

variety of data sources where such information is embedded. This should facilitate the wider application of the approach developed here.

Secondly, even though the greatest focus in this dissertation was on territorial disputes, conceptually the notion of seeking theory-appropriate strategy patterns should be applicable to any field of inquiry. This reflects the structural basis of SR: the pressures of the international system should cause many different nations to act alike. Hence, particularly by building upon the example general framework provided in Chapter Three, any number of bespoke templates could be developed to assess nations' behaviours in various research areas. Indeed, the best practice methodology applied in this dissertation to provide a variety of structured analytical tools, and support their consistent modification,<sup>254</sup> should allow the results of any future works to be sensibly compared to the outcomes developed here.

Also, additional analysis using the means provided here, or modified versions, is important, noting that theories can only be tested on their specific predictions, and any results achieved only apply to their explanatory power on those forecasts. So, while the outcomes developed here have clear policy and scholarly value, they cannot be fully extrapolated to other areas of inquiry. And there are many other matters that SR can and does address within security studies beyond territorial disputes (let alone in wider fields), and these should prove susceptible to strategy analysis. These issues are further addressed in Section III.

### **Conducting a Strong Test**

The methodology used here incorporated a great many mutually reinforcing strong testing techniques to address the various causes of indeterminacy. While these are detailed in Chapter One, they include careful selection of theoretical schools (so that results are comparable), testing in a tightly defined thematic area (so that predictions are more certain), and conducting a large-dataset quantitative and

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<sup>254</sup> As the example strategy framework is principles based, the consistent application of these principles should facilitate the development of comparable continuums for other areas.

qualitative analysis (to minimise the impact of outliers and harness the strengths of both approaches). So, while there is no overall rating that can be given for how strong a test is, the methods used here provide a logically compelling basis for confidence that the outcome achieved is the correct one – notably, there is high certainty that DR's predictions are more congruent with reality compared to OR.

### **Countervailing Arguments**

There are, however, three key constraints on the work conducted that should be kept in mind. Firstly, there are limits on the breadth of the applicability of the predictions developed for DR(GS) (in the sense of a focus on mid-range strategies), as these most clearly apply to states that Waltz describes as loosely associated.<sup>255</sup> Aside from such states, Waltz sees the concerns over relative gains as too high to enable much cooperation.

Secondly, DR and OR writ large are intended to only apply to Great Powers and appropriately insulated smaller nations (i.e., those protected from the influence of the Great Powers). So, any results achieved by the approach here are likewise limited in that they can only be generalised to such nations. Further, being based on territorial disputes, from a theory perspective the outcomes achieved (and associated implications) are only strictly generalisable to similar dispute scenarios.

Thirdly, this dissertation represents only one set of results among thousands of previous efforts. Even with the various factors arguing in favour of the outcomes achieved here, any sure claim of a breakthrough is premature. True confidence can only be achieved through repeated testing using comparable methods, noting that many existing analyses might be incommensurable because they do not use equivalent definitions and measures.

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<sup>255</sup> See Chapter Three. In summary, loosely associated nations are those that use each other for goods or services but are not dependent on one another, and are either unable to impose their will militarily or would face unacceptable risks in trying to do so.



## Overall Assessment

Yet while the above points are important limitations to the outcomes achieved, these too have considerations that minimise their impact. So, regarding the first concern of constrained applicability, important value still remains in the work done and the limits on the breadth of the analytical method are not so severe.

In particular, by focussing on the Great Powers of the world order, DR(GS)'s and OR's predictions necessarily relate to the most consequential states – an outcome that likewise applies to DR(GLS). After all, such nations are Great Powers because of precisely that – they have the greatest power: that is, the most capacity to influence others (Waltz, 1979; Mearsheimer, 2014). Hence, by applying to such nations, the effort conducted here to address *if, how, and when* should still be of much use to the wider scholarly and policy communities as it relates to the very nations that have the most impact in the world order. Also, many smaller nations have the potential to fall within the intersecting categories of being insulated states that are also loosely integrated – not least the various countries of South-East Asia.

Further, territorial disputes are a key policy issue under Realism and, as noted in Chapter Three, they are the primary cause of wars. Hence the results developed in this work, and associated recommendations discussed below, have a high utility all of their own. Also, there is no strict reason why these should not be cautiously extrapolated to apply to broader security situations, especially if supported by future testing under the strategy framework developed here.

Finally, there is the matter of the dissertation unavoidably representing only a single point of data that may, in future, be supported or argued against by other similar works. But ahead of any such efforts, it is useful to note that both Waltz and Mearsheimer propose that one well-constructed test can contribute more to understanding a theory than dozens (or hundreds) of other efforts (Mearsheimer & Walt, 2013; Waltz, 1986). And based on all the points above, it is the hope of the author that this is the outcome offered by the dissertation – and that as such, it might indeed provide a starting point for a breakthrough on theory testing.

## **Novel Contributions**

Separately to the question of whether an analytical breakthrough has been achieved are the broader original contributions offered by this work to IR scholarship. In fact, the pursuit of the above-described methodology required the development of some 20 novel concepts and practical resources,<sup>256</sup> building to various degrees upon existing work and created with a focus on supporting best practice (structured and repeatable) analysis. These are now available to be used independently or collectively by scholarly and policy communities for theory testing or ends such as more accurately gauging nations' offensive or defensive potential, and a selection of future opportunities are discussed in Section III.

While the various original contributions are not discussed here in any detail, they are summarised for the reader's reference in [Table 8.0](#) below. Of note, the 20 items represent the author's effort to sensibly group together larger subsets of individually novel concepts. For example, item 15 refers to the development of counting rules for AA, MEZ and SD operations to use in the 5-7-7 model. Of course, the groups of rules associated with each operational type could themselves be counted as individual original contributions, let alone the rules' various constituent components – such as the development of a model for assessing numbers of aircraft required to provide a continuous airborne presence at various locations.<sup>257</sup>

Finally, the innovations are organised in the order that the author found most cogent. This aligns broadly, but not perfectly, with the order that the concepts appeared in the dissertation (excluding Chapter One, which summarised many).

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<sup>256</sup> In addition to the overall novel approach of conducting SR theory testing via strategy assessment.

<sup>257</sup> This "circuit model" is discussed in the MPA but was not judged sufficiently distinctive to refer to otherwise.

Table 8.0 – Aggregated Original Contributions

Number	Description (Location in Dissertation)
1	Proposal of the conceptual notion of organising strategies into highly cooperative, mid-range, and highly coercive behaviours. (Chapter Two)
2	Proposal of a SR basis for Revisionist states’ strategy preferences to initiate at, or rapidly escalate to, the most coercive options available. (Chapter Two)
3	Proposal DR(GS) states should prefer “mid-range” strategies that are neither highly cooperative or coercive, and vary between the two, and that such nations should allow some opportunities to gain power to pass by. (Chapter Two)
4	Proposal of the integrated overview that DR(GLS), DR(GS) and OR states should respectively prefer increasingly (and ideally highly) cooperative strategies that avoid war; mid-range coercive and cooperative strategies that shun high levels of either, with war an unfavoured but potential option; and increasingly (and ideally highly) coercive strategies where war is overtly favoured. (Chapter Two)
5	Proposal of SR theoretical basis for the preponderance of DR(GLS) states, based on assigning different weightings to the key assumptions of the importance of security and tolerance for relative gains, and clarification of the comparative weightings placed on these by DR(GS) and OR states, (Chapter Two)
6	Proposal of a refined definition of state survival to include human life (in addition to territorial integrity and political independence), to allow a more nuanced organisation of strategies. (Chapter Three)
7	Proposal of principles suitable to dynamically organise all strategy types, centred on arranging actions based on the increasing materiality (directness and certainty) and intensity (scale, immediacy, credibility) of their potential impact on survival. (Chapter Three)
8	Proposals of the conceptual approach of normal and distinctive strategies as behaviours which respectively do and do not produce a strong coercive or cooperative effect on their target. As such they can define the mid-range and highly cooperative/coercive sections of a strategy continuum. (Chapter Three)
9	Development of a conceptual two-dimensional strategy continuum based on proposals 7 and 8, including a sawtooth escalation pathway. (Chapter Three)

10	Development, using proposal 9, of a practical pair of principles-based structured strategy frameworks, tailored to both general and territorial disputes. These are amongst the most detailed frameworks of their type yet proposed. (Chapter Three)
11	Proposal of the concepts of scope (breadth of behaviours) and direction (escalating, matched, or decreasing levels of coercion and cooperation) as a means to map and test theory-specific strategy preferences against the detailed frameworks from proposal 10. (Chapter Three)
12	Definition against the pair of continuums from proposal 10 of the most detailed structured strategy predictions yet developed for DR(GS)BOP, DR(GS)PTT, DR(GLS), OR(BOP) and OR(PTT), expressed in terms of preferences for scope and direction as affected by the balance of military power. (Chapter Three)
13	Proposal that OR states should favour rapid shifts to militarised strategies when the balance of power is opportune for conquest, even if this causes increased risk elsewhere, due to the vital nature of territory. This should lead to greater variation in OR state behaviours in general. (Chapter Three)
14	Proposal of a battle focussed definition of military power (“a state’s potential for specific operational success against a particular adversary”) and development of a structured means to measure this (the 5-7-7 model). (Chapters Four and Five)
15	Development of 5-7-7 model-applicable operational needs, capability effects and associated technical equipment requirements for AA, MEZ and SD operations, and associated counting rules for comparing forces in battle situations. (Chapter Six and Annex B)
16	Development of 5-7-7 model national operational requirements for the six states tested, based on 15 AO and 29 base locations. (Chapter Six and Annex B)
17	Development, using the 5-7-7 model, of a 21-year dataset of operational military balances of power at 15 dispute locations in the SCS, including 1,371 assessments based on 115 major military asset classes. This is the largest publicly available dataset of its type. (Chapter Six and Annex B)
18	Development of a structured five step stacking model to holistically organise and assess states’ direct and indirect strategy choices in complex analytical environments. (Chapter Seven and Annex B)
19	Development of counting rules to apply the NDU data to the territorial dispute framework from proposal 11 and stacking model from proposal 18. (Annex B)
20	Development, by applying proposals 18 and 19 to the NDU dataset, of a 21-year, 1,371 analysis dataset of states strategies using over 24,000 actions. This is the largest publicly available dataset of its type. (Chapter Seven and Annex B)

## **Section II: Policy and Scholarly Implications of the Results**

As noted in Chapter One, the key questions of *if, how, and when* were selected due to their answers having obvious scholarly and policy value. So, how should nations view each other in terms of the prospect of violence, and how should they respond in terms of their armament and incentives to attack? Can truly cooperative (or aggressive) nations be identified regardless? And when is the period of maximum danger for the international community in terms of the balance of power?

In turn, answers to these questions have now been developed – and while they only represent one point of data, it is useful to examine their implications, and this is now done below. Of note, the policy implications discussed are described with respect to DR states in general. This reflects the overwhelming prevalence of such nations in the data; hence recommendations are most sensibly crafted with respect to them. Of course, Revisionists could draw quite different inferences.

### **Answers to the Research Questions: Policy Implications**

A variety of policy issues flow from *if, how, and when*. These reflect the respective conclusions that, firstly, states are not structurally driven towards violence; indeed the very opposite effect seems to be evident – even in matters so sensitive as territorial disputes. Secondly, differences in motivation are apparent from behaviour even when nations strive towards such common goals. And thirdly, disparate balances of power are only very poorly correlated with aggression – largely because the world is populated by DR states opposed to violence due to the systemic imperatives imposed by the world order.

As a result of these factors, overall there is a strong basis for countries to have confidence in the potential for peace between nations, to treat highly coercive countries with suspicion yet recognise the potential for cooperation with most, and

to not overreact to changes in the balance of power. These outcomes combine in various ways to generate policy recommendations.

For example, despite the anarchical international environment, threat perceptions in many instances are likely to be inflated, and associated spending on arms and armour can sensibly be reviewed in terms of opportunity cost when considering the broadly peaceful world environment. This reflects that, while power superiority for a defender may ward off an attack, such aggression was unlikely to be intended in the first place, raising questions of the utility of large investments against unlikely contingencies. Similarly, neither periods of power superiority or power parity particularly indicate an increased danger for the international community. Of course, the potential for attack will always remain, and in some instances nations may engage in aggression with little warning. However, while such a result would of course be terrible for the target state, it is highly unlikely to involve its destruction, again raising questions about the value of an extreme investment in armaments. These outcomes also argue for the sensible pursuit of arms control – after all, if violence was unlikely in the first place, much spending on weapons merely creates an increased sunk cost for little real benefit.

On the subject of international engagement, opportunities for cooperation should be initiated where possible and embraced when they arise, because they present opportunities to safely gain power and winnow out Revisionists. This reflects that, with the generally non-linear relationship between power and aggression, some degree of cooperation and risk of relative gains can sensibly be managed. Also, escalating collaboration helps to identify OR states that should refuse such a direction. Indeed, even offers of high-level cooperation hold the potential for safe collaboration as they most likely are the actions of bona fide DR(GLS) nations, at least if they are not outliers within a range of coercive actions – a pattern that raises the risk that the cooperative offer is a deceitful effort by a Revisionist. Further, as shown by the dataset, cooperation can exist even when nations have serious disputes.

In turn, responses to coercive behaviours should be measured. As most nations are DR states, they will on occasion attempt elements of coercion to see if this provides a more efficient path to achieving their objectives. However, rationally, such nations will withdraw from these mechanisms should they not prove fruitful. Hence, the objective when faced with such behaviours should be to match them, so as to neither escalate the dispute nor reward coercion with cooperation, but thereafter to seek to reduce confrontation and return to mutually beneficial engagement.

However, nations should remain vigilant for indications that another state has settled on a deliberately escalating coercive path. This may reflect a DR(GS) state that has selected this strategy and is unlikely to be dissuaded short of conflict. In turn, the presence of persistent high-level coercion also indicates a Revisionist. Such behaviour needs to be met with escalated confrontation in turn, as the aggressive state will respond to little else and will likely view cooperation as weakness.

### **Answers to the Research Questions: Scholarly Implications**

Considering the focus of IR on the relations between states, the above concepts also have a clear scholarly impact in affecting how international affairs can be described, analysed and taught. However, further implications flow to scholarship as the work conducted in this dissertation has essentially been that of Positivist theory testing. That is, theories are simplified models of reality that seek to explain and predict outcomes. And from a Positivist IR perspective, theories can, and should be, assessed to identify which better explain reality – and those that perform poorly should be set aside, so that models with superior explanatory power can be used to inform research, ontology and pedagogy.

In terms of further implications for scholarship; firstly, the evidence indicates that the Motivational Realist's position is correct: it is possible to identify motivations based on states' behaviours. This result is important because it has previously not been practically tested and has instead remained as a series of conceptual propositions. With these now having clearer empirical validation, there is merit in

deeper investigation of how inherently motivated nations can be identified, and the wider utilisation of these concepts in research and teaching.

On a related note, structurally derived motivations can be developed and tested for regarding Peaceful, Opportunistic and Revisionist states. In fact, such behaviours, at least for now, cannot be separated from inherently motivated actions. This too argues for further work to differentiate inherently and structurally motivated nations, and a recognition in teaching in particular that DR(GS) can define a range of distinctive patterns of expected strategies, and that there exists a structural basis for why Peaceful nations may predominate.

Further, in the Positivist tradition, there are compelling arguments for OR to be set aside as a key explanatory mechanism for the behaviour of great powers and suitably insulated minor states. This particularly applies to matters of territorial conquest, where the theory claims particular explanatory power. Of course, this does not detract from the model's potential to explain other important elements of international relations, yet these need to be assessed and tested separately.

Lastly, within SR theory itself, more evidence exists that states do in fact place greater weight on achieving an "appropriate" amount of security and that they have manageable or even reduced concerns for the impact of relative gains. These conclusions should serve to influence the further development of the field, associated research and pedagogy.

### **Section III: Future Research**

Finally, some brief comments can be made about the potential for future research based on the work conducted here. Of course, certain general types of investigation have already been alluded to above, such as the development of means to better identify inherently motivated states and differentiate these from structurally driven ones.



Further, there are a range of obvious uses for the conceptual and practical work conducted. For example, the definition and measure of military power can be harnessed to assess a range of operational military balances more effectively. Also, the SCS military power dataset, and/or the dataset of state behaviours, can be used as the basis for a variety of different forms of analysis. These datasets can be used as they are, or as a basis for developing bespoke information resources, including by adding in further nations from the SCS region, including additional dispute locations, expanding the time period covered, or adding further types of military operations to allow the assessment of broader spans of balances of power.

While any number of such general opportunities could be discussed, to maintain a tighter focus on the work done in the dissertation, the remainder of this section considers aligned future theory-testing opportunities. Such efforts can usefully be differentiated into “forward-looking” efforts that might apply the techniques developed here to other topics, and “backward-looking” efforts that would seek to do the same to existing datasets. Any and all such future works would provide a useful point of comparison to the single datapoint represented by the dissertation, including by validating, disproving, or refining the approaches used here. Further, particularly if research encompassed a range of scenarios, including crises and periods of peace, this would allow a more robust comparison between the results in this dissertation and both aligned and contrary indicators identified in other research in Chapter Seven. Such diversity would also support identifying potentially unexpected trends in state behaviour in various situations.

### **Theory Testing: Forward-Looking Research Opportunities**

The most straightforward means of expanding on the work conducted here would be to simply apply the same techniques to other near-identical maritime territorial disputes. This would ease the analytical and development burden for scholars and provide a “like-for-like” comparison with the results achieved here.

Alternatively, a broader application would also involve testing for mainland territorial disputes. While much of the basic conceptual work would remain the same, such efforts would in particular involve the development of suitable operational concepts and capability requirements for land-based warfare, so as to be able to appropriately apply the 5-7-7 model. This in itself would offer the potential for fruitful collaboration between the IR and military studies communities, as the development of such concepts and requirements, and associated metrics upon which to assess national capabilities, needs specialist knowledge.

A wider application yet again would be to harness the behavioural testing approach to any of a range of dispute situations, or scenarios where nations have clearly defined specific foreign policy goals, and military power is applicable. This too would require the identification and definition of these goals, development of bespoke strategy frameworks and description of how strategy-relevant behaviours can be identified, and the development of further operational concepts and equipment requirements for broader land, sea and air military missions.

Of note, any of the above bodies of work would of course require both appropriately detailed datasets of historical behaviours and, once appropriate 5-7-7 requirements had been determined, equivalent datasets of military power. Regarding the latter certain constraints may apply to how far back useful results can be determined. For example, one of the key ORBAT resources used here, notably *The Military Balance*, only commenced in the 1960s.

### **Theory Testing: Backward-Looking Research Opportunities**

The clearest potential to harness existing works would be to consider datasets such as those developed by Leng, and Huth and Allee. As noted in Chapter Seven, such resources likely have the granularity to allow for the direct application of the approach used here, or methods derived from it. The key limitation would likely be the ability to generate appropriate assessments of operational military power, noting the historical limitations of available data referred to above.

More broadly, there is of course the enormous span of existing Realist theory-testing research efforts, numbering in the thousands of works, that have been conducted using arguably less appropriate means of measuring military power. The application of the 5-7-7 model should present a mechanism to reassess these, and also make them more clearly commensurable with one another and the work conducted here.

### **Conclusion**

With the potential for various forms of future research addressed, this dissertation now draws to a close. It is the author's hope that the work it represents forms a useful contribution to scholarship, policy and also the normative goal of managing violence by understanding the causes of war and the conditions for peace – the central concerns of the IR and Security Studies disciplines. May it assist in the development of a more secure and better world.

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## Annex A – Summary of Reviewed Net Assessments

This annex contains a tabular summary of the net assessments and related works used to develop the military power assessment factors discussed in Chapter Four. It highlights the common factors identified between the assessments that led to their inclusion in the 5-7-7 model.

When considering the table, the following points may be of use to the reader:

- The table shows the various factors identified in the listed assessments as being important to measuring military power. Key common factors between works are **bolded**, noting these terms have been chosen by the author as being descriptive of similar concepts used across various assessments, even if the term itself does not appear in each work. Further, if a work used a key factor included in the 5-7-7 model (such as “Personnel”) but mainly defined it in terms of only one of its contributing elements (such as “training”) this is reflected in the element being in brackets after the factor, for example “Personnel (training)”.
- Some works provide more information than others on, or had novel definitions of, aspects of key factors. So, Wood’s (2015) *Index of US Military Strength* refers to weapons upgrade programs as an aspect of technological modernity. For illustrative purposes, in selected instances at the author’s discretion, such aspects are included as sub-points of the key factors. In such instances, brackets explain potentially unfamiliar terms, for example “Sustainability (ability to keep naval forces on station)”.
- Regarding the three key operational military power questions (i.e., What operations will nations need to conduct? Can they be conducted by the specific forces that will be available? And how will those specific forces compare in battle?) used to identify the main military power

factors in Chapter Four, the importance of these three queries (but not always using these exact terms) individually and cumulatively to measuring military power is discussed throughout the works in the table. It is, however, especially apparent in Glaser and Kaufmann (1998), Glaser (2010), Posen (1984b, 1988), Mearsheimer (1988, 2014), O’Rourke (2016), Tellis et al. (2000), Cliff (2015), Heginbotham et al. (2015), Wood (2015), Shlapak et al. (2009), Carus (1987), and Kirchberger (2015).

Table A0: Selected Assessments and Common Factors

<b>Assessment</b>	<b>Quantitative Factors</b> Common core power factors in <b>bold</b>	<b>Qualitative Factors</b> Common core power factors in <b>bold</b>
Kirchberger (2015) <i>Assessing China’s Naval Power</i>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age, and capabilities of military assets)</b></li> <li>• <b>Weapon and sensor types and ranges</b></li> <li>• <b>Technological modernity</b> <ul style="list-style-type: none"> <li>▪ Stealth, propulsion, combat management/direction systems</li> </ul> </li> <li>• Task and reach/function and capability (a Navy’s primary function and maximum mission capability)</li> <li>• Flexibility – the number and variety of possible missions</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Logistics</b> <ul style="list-style-type: none"> <li>▪ Sustainability (ability to keep naval forces on station)</li> </ul> </li> <li>• <b>Personnel (Training and Deployment Experience)</b></li> <li>• <b>Defence responsibilities</b></li> <li>• <b>Geography</b></li> <li>• Maintenance</li> </ul>



<p>Chao (2010)  “Of Navies and Power Transition: The United States, Naval Power, and the Rise of China.”</p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age, and capabilities of military assets)</b></li> <li>• <b>Relative preponderance</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Personnel (Training and Deployment experience)</b></li> <li>• <b>Logistics</b></li> <li>• <b>Geography</b></li> <li>• Operational effectiveness</li> <li>• Command and Control</li> <li>• Maintenance</li> </ul>
<p>Chang (2012)  “China’s Naval Rise and the South China Sea: An Operational Assessment”</p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age, and capabilities of military assets)</b></li> <li>• <b>Technological modernity</b></li> <li>• <b>Weapon and sensor types and ranges</b></li> <li>• <b>Relative preponderance</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Personnel (Training and Operational experience)</b></li> <li>• <b>Geography</b></li> </ul>
<p>Tellis et al. (2000)  <i>Measuring National Power in the Postindustrial Age</i></p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age, and capabilities of military assets)</b></li> <li>• <b>Technological modernity</b></li> <li>• Number of facilities</li> <li>• Defence spending</li> <li>• Military Research, Development, Test and Evaluation institutions</li> <li>• Defence industrial base</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Personnel (Training)</b></li> <li>• <b>Defence responsibilities</b></li> <li>• <b>Geography</b></li> <li>• <b>Logistics</b></li> <li>• <b>Doctrine</b></li> <li>• Strategy</li> <li>• Organisation</li> <li>• Innovation capacity</li> <li>• Foreign relations</li> <li>• Civil-military relations</li> </ul>

<p>Cliff (2015) <i>China's military Power</i></p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age, and capabilities of military assets)</b></li> <li>• <b>Technological modernity</b></li> <li>• <b>Weapon and sensor types and ranges</b></li> <li>• <b>Relative preponderance</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Doctrine</b></li> <li>• <b>Personnel (Training, education, deployment experience)</b></li> <li>• <b>Defence Responsibilities</b></li> <li>• <b>Geography</b></li> <li>• <b>Logistics</b></li> <li>• Organisational structure and organisational culture</li> </ul>
<p>Office of Naval Intelligence (2009/2015) <i>The People's Liberation Army (PLA) Navy</i></p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age, and capabilities of military assets)</b></li> <li>• <b>Technological modernity</b> <ul style="list-style-type: none"> <li>▪ Including submarine quietening and computer processing power</li> </ul> </li> <li>• <b>Weapon and sensor types and ranges</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Personnel (training, education, deployment experience)</b></li> <li>• <b>Doctrine</b></li> <li>• <b>Defence Responsibilities</b> <ul style="list-style-type: none"> <li>▪ Maritime claims and missions</li> </ul> </li> <li>• Organisational structure</li> <li>• Exercises</li> </ul>
<p>National Air &amp; Space Intelligence Center (2010) <i>People's Liberation Army Air Force</i></p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age and capabilities of military assets)</b></li> <li>• <b>Weapon and sensor types and ranges</b></li> <li>• <b>Technological modernity</b></li> </ul>	<ul style="list-style-type: none"> <li>• Organisational structure</li> <li>• <b>Personnel (education and training)</b></li> </ul>
<p>Shlapak et al. (2009) <i>A Question of Balance</i></p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age, and capabilities of military assets)</b></li> <li>• <b>Weapon and sensor types and ranges</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Personnel</b></li> </ul>

	<ul style="list-style-type: none"> <li>▪ Defence in depth (notably for beyond visual range missiles and amphibious assault)</li> <li>• <b>Technological modernity</b></li> <li>• <b>Relative preponderance</b></li> <li>• Defensive Survivability (protection from Precision-guided munitions, SAM survivability, aircraft shelters)</li> <li>• Aircraft sortie generation</li> </ul>	
<p>Wood (2015) <i>Index of US Military Strength</i></p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age, and capabilities of military assets)</b> <ul style="list-style-type: none"> <li>▪ Discussed in terms of capacity: numbers available compared to stated requirements</li> <li>▪ Support aircraft numbers</li> </ul> </li> <li>• <b>Relative preponderance</b> <ul style="list-style-type: none"> <li>▪ Particularly of munitions to targets</li> </ul> </li> <li>• <b>Weapon and sensor types and ranges</b> <ul style="list-style-type: none"> <li>▪ Discussed as part of “capability”</li> <li>▪ Space-based Intelligence, Surveillance and Reconnaissance</li> </ul> </li> <li>• <b>Technological modernity</b> <ul style="list-style-type: none"> <li>▪ Particularly of weapons, described as part of “capability”</li> <li>▪ Upgrade programs</li> </ul> </li> <li>• Cyber warfare</li> <li>• Weapon fitness for purpose (discussed as part of “capability”)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Logistics</b></li> <li>• <b>Personnel (Training)</b> <ul style="list-style-type: none"> <li>▪ Discussed as a component of “Readiness” comprised of training and maintenance</li> </ul> </li> <li>• <b>Defence Responsibilities</b></li> <li>• <b>Geography</b></li> <li>• <b>Doctrine</b></li> </ul>

<p>Cole (2012) <i>The Great Wall at Sea</i></p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age, and capabilities of military assets)</b></li> <li>• <b>Technological modernity</b></li> <li>• <b>Weapon and sensor types and ranges</b></li> <li>• National scientific and industrial infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Defence Responsibilities</b></li> <li>• <b>Geography</b></li> <li>• <b>Logistics</b></li> <li>• <b>Personnel (education, training, deployment experience)</b></li> <li>• <b>Doctrine</b></li> <li>• Organisational structure</li> <li>• Maintenance</li> <li>• Strategy</li> <li>• Strategic planning</li> <li>• Maritime Leadership</li> <li>• Naval leadership in national strategy</li> <li>• Tactics</li> <li>• Command and control</li> <li>• Effective ISR</li> </ul>
<p>Cordesman (2015) <i>Chinese Military Strategy and Modernisation</i></p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age, and capabilities of military assets)</b></li> <li>• <b>Technological modernity</b></li> <li>• <b>Weapon and sensor types and ranges</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Personnel (training, deployment experience)</b></li> <li>• <b>Geography/Defence responsibilities</b></li> <li>• <b>Geography</b></li> <li>• <b>Logistics</b></li> <li>• Organisation</li> <li>• Command and control</li> </ul>

<p>Erickson and Goldstein (2011) <i>Chinese Aerospace Power</i></p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age, and capabilities of military assets)</b></li> <li>• <b>Technological modernity</b></li> <li>• <b>Weapon and sensor types and ranges</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Personnel quality (education, training and deployment experience)</b></li> <li>• <b>Deployment experience</b></li> <li>• <b>Geography</b></li> </ul>
<p>Heginbotham et al. (2015) <i>The US-China Military Scorecard</i></p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age, and capabilities of military assets)</b> <ul style="list-style-type: none"> <li>▪ Stealth</li> </ul> </li> <li>• <b>Relative preponderance</b></li> <li>• <b>Weapon and sensor types and ranges</b></li> <li>• <b>Technological modernity</b></li> <li>• Defence budget</li> <li>• Cyberwarfare</li> <li>• Space-based systems: offensive counter-space and survivability</li> <li>• Nuclear stability</li> <li>• Adequacy of basing infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Defence Responsibilities</b></li> <li>• <b>Geography</b></li> <li>• <b>Personnel (training)</b></li> <li>• Infrastructure repair capability</li> </ul>
<p>Till (2009) <i>Seapower: A Guide for the 21<sup>st</sup> Century.</i></p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age, and capabilities of military assets)</b></li> <li>• Function and capability</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Defence Responsibilities</b></li> <li>• <b>Personnel (Training and deployment experience)</b> <ul style="list-style-type: none"> <li>▪ Professional skill</li> </ul> </li> <li>• Reputation</li> <li>• Readiness <ul style="list-style-type: none"> <li>▪ Having a standing navy</li> </ul> </li> </ul>

<p>Kamphausen et al. (2010) <i>The PLA at Home and Abroad.</i></p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age, and capabilities of military assets)</b></li> <li>• <b>Weapon and sensor types and ranges</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Defence Responsibilities</b></li> <li>• <b>Geography</b></li> <li>• <b>Doctrine</b></li> <li>• <b>Logistics</b></li> <li>• <b>Personnel (deployment experience)</b></li> </ul>
<p>O'Rourke (2016) <i>China Naval Modernization: Implications for U.S. Navy Capabilities</i></p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age, and capabilities of military assets)</b></li> <li>• <b>Technological modernity</b> <ul style="list-style-type: none"> <li>▪ Submarine quieting</li> </ul> </li> <li>• <b>Weapon and sensor types and ranges</b> <ul style="list-style-type: none"> <li>▪ Ranges of air-to-air, anti-ship and land attack missiles</li> </ul> </li> <li>• Cyberwarfare</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Defence Responsibilities</b></li> <li>• <b>Area of Operations</b></li> <li>• <b>Doctrine</b></li> <li>• <b>Personnel quality (education, training, deployment experience)</b></li> </ul>
<p>Glaser and Kaufmann (1998) "What is the Offense /Defense balance and can we measure it?"</p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age, and capabilities of military assets)</b> <ul style="list-style-type: none"> <li>▪ Discussed in terms of technological elements, namely: mobility, firepower, protection, logistics, communication, and detection</li> </ul> </li> <li>• <b>Relative preponderance/Force size</b> <ul style="list-style-type: none"> <li>▪ Force-to-force ratios</li> <li>▪ Force-to-space ratios</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Geography</b></li> <li>• Nationalism</li> <li>• Cumulativity of resources</li> </ul>

<p>Van Evera (1998) "Offense, Defense and the Causes of War"</p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity</b> <ul style="list-style-type: none"> <li>▪ Discussed in terms of technology</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Geography</b></li> <li>• <b>Doctrine</b></li> <li>• National social structure</li> <li>• Diplomatic arrangements</li> </ul>
<p>Posen (1988) "Is NATO decisively outnumbered?"</p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age, and capabilities of military assets)</b></li> <li>• <b>Relative preponderance</b> <ul style="list-style-type: none"> <li>▪ Mobilisation rates</li> <li>▪ Readiness</li> <li>▪ Attrition rates</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Doctrine</b></li> <li>• <b>Logistics</b></li> <li>• <b>Geography</b></li> <li>• Command and control</li> <li>• Readiness</li> </ul>
<p>Posen (1984) "Measuring the European Conventional Balance"</p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age and capabilities of military assets)</b></li> <li>• <b>Relative preponderance</b> <ul style="list-style-type: none"> <li>▪ Force-to-space ratios</li> <li>▪ Mobilisation rates</li> <li>▪ Readiness</li> <li>▪ Attrition rates</li> <li>▪ Exchange rates</li> <li>▪ Advance rates</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Doctrine</b> <ul style="list-style-type: none"> <li>▪ Degree of focus on tactical air support</li> </ul> </li> <li>• <b>Logistics</b></li> <li>• <b>Personnel</b></li> <li>• <b>Geography</b></li> <li>• Command and control</li> <li>• Intelligence</li> <li>• Readiness</li> </ul>
<p>Mearsheimer (1988) "Numbers, strategy"</p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age, and capabilities of military assets)</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Geography</b></li> <li>• <b>Personnel</b></li> </ul>

and the European balance.”	<ul style="list-style-type: none"> <li>▪ Examined through Armoured Division Equivalents</li> <li>• <b>Relative preponderance</b> <ul style="list-style-type: none"> <li>▪ Force-to-space ratios</li> <li>▪ Reinforcement rates</li> <li>▪ Strength of reserves</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Commanders’ initiative</li> </ul>
Talmadge (2008) “Closing Time: Assessing the Iranian Threat to the Strait of Hormuz”	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age and capabilities of military assets)</b> <ul style="list-style-type: none"> <li>▪ Fitness for purpose</li> </ul> </li> <li>• <b>Technological modernity</b></li> <li>• <b>Relative preponderance</b> <ul style="list-style-type: none"> <li>▪ Missile launchers vs aircraft seeking to destroy them</li> <li>▪ Mines relative to area needed to be closed/available mine countermeasures assets</li> <li>▪ Aircraft sortie rates</li> </ul> </li> <li>• Asymmetry (mines vs mine countermeasures assets)</li> <li>• <b>Weapon and sensor types and ranges</b> <ul style="list-style-type: none"> <li>▪ Intelligence, Surveillance and Reconnaissance</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Geography</b></li> <li>• <b>Personnel (Training)</b></li> <li>• Command and control</li> <li>• Systems integration</li> <li>• Electronic warfare effectiveness</li> </ul>
Biddle (2004) <i>Military Power</i>	<ul style="list-style-type: none"> <li>• <b>Relative preponderance</b></li> <li>• <b>Technological modernity</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Doctrine</b> <ul style="list-style-type: none"> <li>▪ Conceptual mastery of the “modern system of war”</li> </ul> </li> <li>• <b>Personnel (Training)</b> <ul style="list-style-type: none"> <li>▪ Effective training in the modern system of war</li> </ul> </li> </ul>



<p>Mearsheimer (2014) <i>The Tragedy of Great Power Politics</i></p>	<ul style="list-style-type: none"> <li>• <b>Force Structure and Technical Capacity (number, type, age, and capabilities of military assets)</b> <ul style="list-style-type: none"> <li>▪ Force quality (of weapons)</li> </ul> </li> <li>• <b>Relative preponderance</b> <ul style="list-style-type: none"> <li>▪ Force size (numbers of soldiers, air defence weapons, aircraft and weapons)</li> </ul> </li> <li>• Intelligence, Surveillance and Reconnaissance</li> <li>• Force Strength</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Personnel</b> <ul style="list-style-type: none"> <li>▪ Quality of soldiers and pilots</li> </ul> </li> <li>• Force organisation</li> <li>• Battle management systems</li> </ul>
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## **Annex B – The South China Sea Military Power Assessment**

This Annex partially comprises and also reports the outcomes of this dissertation's overall Military Power Assessment (MPA). The MPA applies the 5-7-7 military power model and structural realism assessment template, described in Chapters Five and Three, to the SCS for the period 1995–2015. By doing so, annual assessments of the military balance of power between the six competing claimant states (Brunei, China, Malaysia, the Philippines, Taiwan and Vietnam) at 15 operational locations are developed – representing 32 different bilateral disputes between occupiers and various claimants. Based on these, annual behavioural predictions are derived for each state, against each competitor, at each area, as develop from the theories under investigation: DR(GS)BOP, DR(GS)PTT, DR(GLS), OR(PTT) and OR(BOP).

The full MPA is comprised of the Conceptual Application and Requirements (CAR) notes (this Annex), which apply the power model to the SCS to identify, explain and populate key data needs for the analysis; and a series of spreadsheets – the Military Power Dataset (MPD) and Sensor and Weapons Summary (SWS). The MPD and SWS take the CAR requirements, populate them with further data and then conduct the actual assessments of military power and generate behavioural predictions. As the MPD and SWS are research data they are not included here (although this Annex reports their outcomes) but may be requested from Curtin University or the author.

### **Overview of the Military Power and Behavioural Prediction Process**

The military power model developed in this dissertation seeks to identify each nation's perspective on its position in the balance of power with another state at a specific location where their objectives are in conflict. A country's position in a pair (also called a dyad) may be superior, inferior, or in broad parity with its competitor. This position is determined by assessing its *likelihood for operational success* should one nation or the other seek to militarily resolve the dispute. If victory is highly unlikely then a state is inferior; if victory is highly likely it is superior; or if victory is

unlikely, possible, or probable, then its power is in broad parity. The focus on operations reflects that these are the mechanisms through which armed force is applied when nations compete in battle, hence military power must be assessed in operationally specific and relevant ways.

Of note, both states in a dyad are presumed to be able to equally effectively determine their position in a balance of power using the same process (described below). This results in the ratings for the two states effectively mirroring each other for any one set of competing operational goals. For example, if one state judges itself superior at a particular location to achieve a specific end, its competitor would judge itself inferior in its ability to stop it. This means the military power model only needs to be manually applied from the perspective of one state, with its adversary assigned the reverse rating from the process.<sup>258</sup> While the position of either the aggressor or defender could be used, in this dissertation the potential attacker's view is always used. This neatly fits the SCS territorial disputes investigated by this dissertation, as at each location each state in a dyad has a single goal: it is either an incumbent, with a defensive mission, or an aggressor seeking to conquer it. Hence, assessments are always done from the perspective of an attempt at conquest.

An aggressor's prospect for victory are determined through a five-step process. This seeks to firstly determine what operations the two states will seek to conduct and where, and hence their associated capability requirements (Step One). Then, an assessment is made of whether both nations are able to achieve their operational ends at all with the military forces available to them (Steps Two and Three). If the attacker can and the defender cannot, then clearly the aggressor is superior and vice versa. But if each state has the potential to meet its objectives, then their likelihood of competitive success in battle must be determined across a variety of key outputs (Step Four). Finally, the results of the previous steps can be

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<sup>258</sup> The model would need to be applied in two ways should nations have a variety of different operational goals at one location, for example defending territory in one part while conquering in another, as both operational types may have different chances of success.

summarised into a single integrated assessment of both nations’ respective and reciprocal potential for victory, that is, their military power (Step Five).

These five steps form the “5” in the 5-7-7 model. In turn, the first “7” reflects the seven military power inputs (Force Structure and Technical Capacity, Weapons and Sensor Ranges, Defence Responsibilities, Modernity, Preponderance, Personnel Quality, and Geography) that are used in conducting the steps. The final “7” is the seven military power outputs (Operational Suitability, Resilience, Asymmetry, Modernity, Personnel, Preponderance, and Geography) that form the comparative criteria by which nations’ relative military power can actually be assessed.

The five steps and their relationship with the outputs are outlined in Figure B0 below, drawn from Chapter Five. Practically, the five steps generate ratings for both states across the two stand-alone outputs (or criteria) of Operational Suitability and Resilience, and for the aggressor in the five comparative criteria of Asymmetry, Modernity, Personnel, Preponderance, and Geography. In general, an attacker can either be advantaged (coded green), have no advantage (orange) or be disadvantaged (red) in comparison with the defender,<sup>259</sup> as shown in Table B0. With every output where a state has advantage, its chances of operational success increase, reflecting its greater military power.

Table B0: Illustrative Measure of Single-Factor Military Power

Assessment Factor	Measurement	Relative Advantage/ Likelihood of Victory	Assessment Outcome
<b>Modernity:</b> Do own forces have more modern assets of equal capability?	Review of Force Structure age in comparison to adversary.	YES: all assets are more modern, chance of success is higher.	
		UNCLEAR: some assets are more modern, chance is uncertain.	X
		NO: all adversary assets are more modern, chance of success is lower.	

<sup>259</sup> The defenders’ ratings for the comparative criteria for a particular operation, should they be needed, would be mirror images based on both nations assessing the factor in the same manner.

Figure B0: The 5-7-7 Military Power Measurement Process Overview

*Key Question: What Operations Will Competing Nations Seek to Conduct?*

**Step One: Identification of Objectives, Operations & Capability Requirements**

**Objectives:** Identify states' military-relevant objectives and locations, the types of operations necessary to achieve these aims, and these operations' associated capability requirements.

**Inputs:** Key Concepts – Geography, Force Structure and Technical Capability; assessment of state aims and necessary operations.

**Outputs:** Technical requirements for assessing national inventories, providing metrics for assessments of Operational Suitability and Resilience.

*Key Question: Can Nations Conduct Needed Operations?*

**Step Two: Identification of Operationally Applicable Forces**

**Objectives:** For operations identified in Step One, assess which military units are likely to be responsible for conducting these, where are their bases, and how much of their mission-suitable equipment is able to be applied at each location.

**Inputs:** Key Concepts – Force Structure and Technical Capacity, Geography, Defence Responsibilities; capability requirements from Step One.

**Outputs:** List of operationally applicable forces.

**Step Three: Operational Suitability and Resilience Assessment**

**Objective:** For each operational location, assess how well the forces identified in Step Two can meet the operational requirements identified in Step One. What operations can they conduct, at what risk (in terms of absorbable losses), and how do these match the needs of states involved.

**Inputs:** Key Concepts – Force Structure and Technical Capacity; forces identified in Step Two.

**Outputs:** Assessments of Forces' Operational Suitability and Resilience.

*Key Question: How Will Nations' Forces Fare in Battle?*

**Step Four: Comparative Forces Assessment**

**Objective:** For operations identified in Step One, assess how operationally suitable forces identified at Step Three compare in factors relevant for battle success.

**Inputs:** Key Concepts – Force Structure and Technical Capacity, Weapon and Sensor Range, Modernity, Personnel, Geography, and Preponderance; operational forces from Step Two.

**Outputs:** Assessments of Forces' Asymmetry, Modernity, Personnel, Preponderance, Geography.

**Step Five: Integrated Military Power Assessment**

**Objective:** Assess how competing forces' comparative strengths across all criteria integrate to form an overall assessment of military power in terms of prospects for operational success.

**Inputs:** Assessments of Forces' Operational Suitability, Resilience, Asymmetry, Modernity, Personnel, Preponderance, Geography, from Steps Three and Four.

**Outputs:** Integrated Assessment of Military Power: likely defeat, uncertainty or victory.

Ultimately, an aggressor’s ratings across the seven outputs are summarised together, as shown in Table B1 below. Then a qualitative judgement is made, based on the number and degree of relative advantages the state has, to produce an Integrated Assessment of its likelihood of operational success and hence relative military power. This may range from victory being highly unlikely, reflecting the state’s military power being clearly inferior; through degrees of probable victory, representing broad power parity; through to victory being highly likely with the aggressor’s power being clearly superior. These results are shown in Table B2. For any aggressor rating, the defender is assigned the reverse or mirrored outcome.<sup>260</sup>

Table B1: Example Factor Summary

Suitability	Resilience	Asymmetry	Modernity	Personnel	Preponderance	Geography
Suitable	1	Neither Advantaged	Advantage	Neither Advantaged	Neither Advantaged	Neither Advantaged

Table B2: Example Integrated Assessment

Rapid Victory Highly Unlikely/ Clearly Inferior	Rapid Victory Unlikely/ Disadvantaged Parity	Rapid Victory Possible/Rough Parity	Rapid Victory Probable/ Advantaged Parity	Rapid Victory Highly Likely/ Clearly Superior
	X			

For this study, it was decided to conduct this process annually to determine a power assessment and behavioural prediction for each state at each operational location. This allowed for the manageable and accurate aggregation of the data noting information on military capabilities is principally published in an annual format.

<sup>260</sup> At least one scenario exists where a nation’s ratings would not simply be the reverse of one another, although it did not arise in the course of this analysis: instances of uncontrolled but contested territory. In such scenarios (such as for an island), both nations might have the capacity to stymie an attempt at conquest (such as via air strikes) but only one might have the amphibious assets needed for prompt offensive victory. In such a situation, from the view of the amphibiously capable state, it might be assessed as having Rough Parity due to having a chance of rapid victory. But from the perspective of the counterpart nation, its power might be judged as Clearly Inferior as it has no offensive potential even if it defeats an assault by its opponent

Once annual relative national positions (superior, inferior or broad parity) are identified, these can then be used to make behavioural predictions for actions in a territorial dispute under the various theories. The relationship between power position and expected behaviour under each theory are summarised in [Table B3](#) below. The use of this table is further detailed in subsequent sections of the CAR.

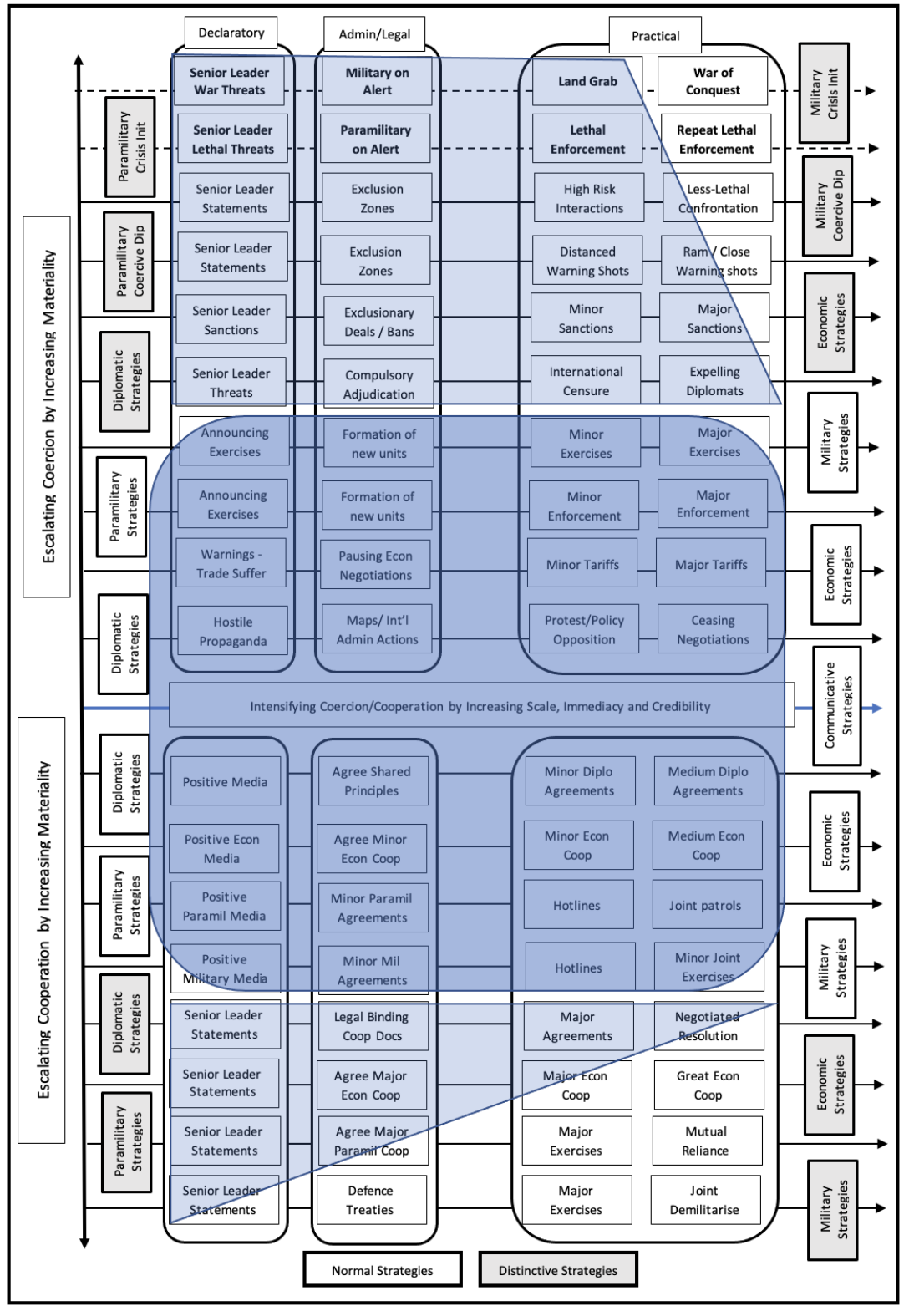
**Table B3: Military Power-Realist Behaviour Assessment Table**

Power Inferiority	Disadv'd Parity	Rough Parity	Advant'd Parity	Power Superiority
<p><b>Irrational State:</b> Initiate and respond with distinctive coercive actions.</p> <p><b>OR/DR State:</b> Focus on Cooperative resolution.</p> <p><b>OR/DR State:</b> Defend in face of military attack.</p>	<p><b>OR(PTT):</b> Focus on initiating and responding with escalating distinctive coercive <u>(para)militarised</u> strategies, including <b>major conquest</b>.</p> <p><b>OR(BOP):</b> Focus on initiating and responding with escalating distinctive coercive <u>non-(para)militarised</u> strategies.</p>		<p><b>OR(PTT):</b> Focus on initiating and responding with escalating distinctive coercive <u>non-(para)militarised</u> strategies.</p> <p><b>OR(BOP):</b> Focus on initiating and responding with escalating distinctive coercive <u>(para)militarised</u> strategies, including <b>major conquest</b>.</p>	
	<p><b>DR(GS)BOP:</b> Focus on initiating, and responding in kind to, normal coercive or cooperative strategies. Will use strongly mixed strategies. Will respond in kind to distinctive coercion in defence; but show restraint in offence.</p>		<p><b>DR(GS)BOP:</b> Same as for DR(GS)BOP at power parity, but may initiate and respond with escalating distinctive coercive strategies, including <b>minor conquest</b>, in offence should normal strategies fail.</p>	
	<p><b>DR(GS)PTT:</b> As for DR(GS)PTT at power superiority, but may initiate and respond with escalating distinctive coercive strategies, including <b>minor conquest</b>, in offence should normal strategies fail.</p>		<p><b>DR(GS)PTT:</b> Focus on initiating, and responding in kind to, normal coercive or cooperative strategies. Will use strongly mixed strategies. Will respond in kind to distinctive coercion in defence; but show restraint in offence.</p>	
	<p><b>DR(GLS):</b> Focus on initiating and escalating cooperative strategies, including to distinctive levels, and show restraint in response to coercion.</p>			
<p><b>OR/DR State:</b> Focus on general control-enhancing behaviours in occupied territories.</p>				

*Notes: Offensive Realism (OR), Defensive Realism (DR), Power Transition Theory (PTT), Balance of Power Theory (BOP), Gains Sensitive (GS), Gains Less-Sensitive (GLS). Grey cells are actions unsuited to differentiating state-types. Beyond the actions above, an OR state should consistently initiate new disputes and pursue existing offensive ones. A DR(GLS) state should not initiate new disputes, and may allow existing offensive ones to lie fallow. A DR(GS) state may occasionally initiate new disputes, and intermittently pursue existing offensive ones.*

Finally, these broad behavioural predictions can be translated into specific illustrative examples of expected strategies and tactics as show in Figure B1 below.

**Figure B1: DR(GS) Territorial Dispute Strategy Preferences**





These illustrations provide a template against which to compare states' historical behaviours to identify which of the theories under consideration had greater explanatory and predictive power. In the dissertation, this is done in Chapter Seven.

### **CAR Role and Information Sources**

Conducting this process annually for the six disputing states in the SCS during 1995-2015 clearly requires, and generates, a great deal of data. Power rankings and behavioural predictions must be generated for 126-country years, or 315-dyad years, across 15 separate primary operational locations, resulting in up to 1,286 individual assessments. As noted previously, the MPA achieves this through two sets of complementary documents. Firstly, the CAR logically considers and describes how the five steps apply to the area. Then, these requirements are populated with data and analysed in the MPD. Beyond identifying the operational requirements, the CAR also serves a range of other important purposes:

- It describes the practical, operational and technical assumptions and decisions (also called "counting rules") that proved necessary to apply the model to the SCS. These rules affect its operation and the ratings states receive in various factors. These include on matters such as what operations nations will attempt to conduct (affecting assessments of Operational Suitability), which military forces and weapons to literally count when compiling quantitative data (affecting calculations of Preponderance), and defining how losses in battle would be tallied (affecting assessed Resilience).

The CAR lists those issues, decisions and assumptions with the aim of making the operation of the model as transparent as possible. In doing so it seeks to avoid issues of analytical ambiguity that have tended to plague other efforts at measuring military power. In each instance, the author has sought to make plain not only the decision reached or assumptions used but the principles that led to such judgements. Through this, the model is designed to demonstrate why the approaches used are sensible and hence why the assessments of military power

reached in the dissertation are robust. Of course, the reader may draw entirely different conclusions and the information provided here should provide a suitable basis for developing competing assessments based around the same data, to allow even-handed comparisons. Finally, through providing detailed information on the principles, decisions and assumptions used, this section also supports the application of the model to different scenarios and datasets.

- It conducts analysis necessary to generate certain country-specific data that are then populated into the MPD, such as identifying nations' level of training.
- It provides a descriptive overview of the content and operation of the MPD together with notes supporting its use, including definitions of abbreviations and specialised terms in the spreadsheets and reference information for common weapon and sensor types and ranges.
- It provides a prose-form reporting of the results of the MPD's assessments, the outcomes of which are summarised in Chapter Six.

Further to the above, the CAR, which commences in detail below, is structured in four parts. The first conceptually applies the five-step model to the SCS to identify and describe the counting rules and information requirements necessary to conduct assessments. The second provides certain country-specific data to meet some of these information requirements, with this populated into the MPD. The third describes the MPD and provides supporting notes. The fourth reports the results.

Finally, a brief note on information sources helps situate where the MPA's information is drawn from, and of course a range of qualitative and quantitative sources were used. The International Institute of Strategic Studies' annual publication *The Military Balance* was the primary source used for annual Order of Battle (ORBAT) information (numbers and types of equipment in national inventories). Technical publications by the *Janes* group (such as *Janes Fighting*

*Ships*) were the primary sources for data on platforms (ships, aircraft, submarines) and on weapons and sensors. Where either series of publications lacked necessary information, this was gathered from various books or internet resources (notably [www.sinodefense.com](http://www.sinodefense.com)). Also highly useful for ORBAT was the Stockholm International Peace Research Institute (SIPRI) arms transfer database. More specific information on the sources used is provided in Section III of this CAR describing the MPD, as it is most relevant to that document.

Of note, as almost all the sources consulted provided ORBAT and also sometimes technical information, not infrequently there were discrepancies on some or all aspects of the data gathered. In such situations, while relying on the respective primary source was preferred (to maintain consistency), where significant differences existed then the source that could provide greater specificity and that was correlated with data in other publications was preferred. Descriptions of where this was necessary is contained in the spreadsheets in the MPD.

## **Section I: General Information Requirements for the Military Power Model**

The general information requirements for the MPD are generated in this section through conceptually applying the five-step model to the SCS. As an abbreviated form of this information is provided in Chapter Six, some of the text in the MPA is very similar, however much more detailed exposition is provided here.

### **Step One: Identification of Objectives, Operational Needs and Capability Requirements**

The principal aim of this Step is to conceptually define the details of the Operational Suitability and Resilience metrics for particular locations and scenarios, allowing nations' armed forces to later be assessed against these. Defining the criteria is done through, for any geographic area of interest (in this case the SCS), identifying

nations' militarily relevant objectives, as these aims are where armed force is most likely to be used – and thus balance of power assessments have the most utility. Once these objectives are identified, then it is possible to define what military operations states will need to conduct, and where, to achieve these aims. This in turn generates associated equipment capability requirements. States' military inventories can then be assessed against these to determine whether (Operational Suitability), and how robustly (Resilience), their armed forces can achieve needed operations at each location. Step One hence defines the requirements against which nations' militaries can be assessed, with countries' actual performance being measured in Steps Two and Three.

Of note, while the application of the model to the SCS focusses on the perspective of the potential Revisionist (i.e., attacker) it is necessary to assess the Operational Suitability and Resilience ratings of both attackers and defenders separately. This is because these are “stand alone” factors that are not mirror images of each other, but whose outcomes still logically affect the prospects of Revisionist victory. For example, if an attacker's forces are operationally suitable to conquer a disputed location but the defenders are not (something independent of the Revisionist), then the prospects of a successful invasion are improved. Likewise, if an attacker's forces are barely able to achieve their objectives but a defender's are highly resilient, then the prospects for offensive success decrease.

### **Identifying National Militarily Relevant Objectives**

To determine operational needs it is necessary to first identify national militarily relevant objectives in a particular area. These will determine the types of military operations states will conduct seeking to achieve their goals.

All the disputant nations in the SCS have essentially the same objective: to exercise sovereignty, that is, absolute control, over their claimed geographic features and

marine territories.<sup>261</sup> More particularly, sovereignty is defined as the condition when a state can freely use all these areas, at all times, for its own purposes while being able to deny them to a foreign nation. By achieving this ultimate goal, states can gain, safely, the various economic and strategic benefits discussed previously that can accrue to a controlling power.

Sovereignty is clearly a militarily relevant objective. It can, after all, be directly achieved by a nation achieving SC over its entire claim – with this being the condition where a nation is able to freely use an area of sea for a period of time for its own purposes<sup>262</sup> while denying its use to an adversary (Tellis, 1990). Indeed, the definition of sovereignty used here reflects that of SC but extended to cover land areas and ongoing control (as, logically, the need for a state to be able to exert control over its claim is constant rather than not time-limited). And much as SC is a condition directly generated by military forces, then “sovereignty as expanded SC” can be shown as likewise achievable by the use of armed power.

Despite this potential, claim-wide SC is not used as the militarily relevant objective for investigation, for practical and conceptual reasons. As an initial point, to achieve such sovereignty requires certain operational effects; namely, to be able to persistently hold at risk (by being able to detect and fire a weapon at) any adversary that exists in, or comes to impinge upon, the claimed territory through the available physical domains. These domains (and adversaries) are air (aircraft), sea-surface (ships), underwater (submarines), and land (to address any troops that may already occupy features). The capability requirements to hold such forces at risk are, in turn, having the weapons, platforms, and sensors in place to accomplish AAW, ASuW, and ASW, with these three reflecting the classic SC mission, and also AA.<sup>263</sup>

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<sup>261</sup> All place-names used in this dissertation reflect common English usage; features typically have different names in non-English languages.

<sup>262</sup> Often while it conducts another operation, such as an amphibious attack.

<sup>263</sup> Such amphibious attacks are required to achieve quick and cheap victory, sought under the 5-7-7 model, as opposed to potential blockades or bombing operations that may endure for months.

Yet to apply such effects, persistently, across claims is an enormous task. The territories involved are vast and require correspondingly immense and complex AAW, ASuW, ASW, and AA activities. Due to this, any effort to achieve such broad and ongoing SC is difficult to sensibly consider in terms of even a range of discrete military operations – the focus of the 5-7-7 model. Further, due the scale of the task (which includes being able to concurrently hold at risk all targets within a state’s claim) the prospect of any nation seeking to achieve this seems remote. Hence assessing states’ military potential to produce claim-wide SC provides little insight into understanding their actions. Also, if such a power assessment was conducted, due to the intuitively high capability requirements, any of the contending nations would almost certainly be found to be weak – a situation where their actions again provide no insight into their underlying motivations.

#### A Principal Subobjective: Sole Control Over Features

However, a more 5-7-7 suitable militarily relevant subobjective also exists: nations having sole control over the features within their claims. By this goal is meant that states will seek to ensure no foreign nations possess (a term used here somewhat interchangeably with occupy and control) a feature within their asserted borders.

All claimant states can be understood to have an objective of sole control over features to wish to resolve this promptly. This reflects that in the SCS, each nation’s claim is in disputed both in-principle by one or more countries and also practically: states have occupied various features within each other’s asserted borders, including by deploying land-based troops at such sites, or by controlling these locations through regular air and/or naval patrols. And such situations of “foreign control”, are unacceptable to states for a variety of reasons relating to sovereignty, military force, and economic exploitation.

On the first issue, simply put, foreign powers occupying features within a nation’s declared borders is incompatible with its sovereignty. Also, from a legal perspective, when such an occupation is conducted by land-based forces it provides a stronger

basis for the occupier to seek to have its claims of sovereignty recognised under the principle of “effective occupation” (i.e., actively occupying and administering claimed lands) – through literally doing so. And this is the strongest basis for which a state may seek to have its sovereignty recognised (Pedrozo, 2014, pp. 3–4). Hence, such occupations form a particular danger to other claimant states. Further, if the occupation is of true islands and becomes formally recognised by other nations, then the sovereign gains under UNCLOS a 370 km EEZ.<sup>264</sup>

In turn, militarily, foreign land-based forces can host units that threaten much broader areas of the claimant’s territory. Indeed, such forces can be equipped with long range weapons and sensors able to fire at targets hundreds of kilometres away. Further, land-based forces provide distinct advantages in terms of the balance of power. Units located on an island are not affected by the loss of strength gradient, being already in position, while other nations that must travel there, if they seek to eject them, and so necessarily find their power curtailed. Also, if a feature is of larger size and is able to host ports and airfields, further forces can be added including naval vessels and combat aircraft based at the island (with the site thus serving as a “CoG”, as discussed below). And such island-based air and naval forces allow using cheaper assets (compared to long range units from the mainland) to conduct more frequent patrols in the area.

Further, in the event of conflict, land-based units are overtly harder to dislodge. Whereas a ship may be sunk or an aircraft shot down, land forces must almost always be ejected by risky amphibious assaults where they hold distinct combat advantages, being on firm ground and likely in fortifications compared to unprotected forces struggling ashore through surf (Till, 2009, p. 195). Indeed, by equipping the occupying troops with advanced sensors and weapons, further protected by fortifications, such garrisons may even become modern-day ‘island fortresses’ (Wu, 2018). Together, these factors allow for smaller and cheaper forces to have a disproportionate effect.

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<sup>264</sup> Of note, an island formed by land reclamation does not gain an EEZ (Mirasola, 2015).

Finally, features and their surrounding waters often provide excellent resources for economic exploitation – in particular for fishing<sup>265</sup>. To ensure that such resources are only used for its own benefit, a state must be able to monitor and control a feature's landmass and its immediate vicinity in particular.

Hence for all the above reasons – sovereignty, control over the presence of weapons, and assurance of exclusive economic exploitation, a state must seek sole possession of the features within its borders – meaning competing occupiers must be removed. The indicative borders of the various claims, together with a selection of occupied outposts, are shown in [Figure B2](#) below and are also summarised for each state in the country entries later in this section.

With this diversity of competing claims and objectives, it is of course possible that they will be resolved peacefully through mechanisms such as UNCLOS. But as the Realist theories under investigation focus on state behaviour as driven by military power, and since the competing nations have in fact made little use of legal dispute resolution mechanisms, the focus here shall, of course, be on the military aspects of resolving the disputes.

#### *Sole Control as a Militarily Relevant Objective*

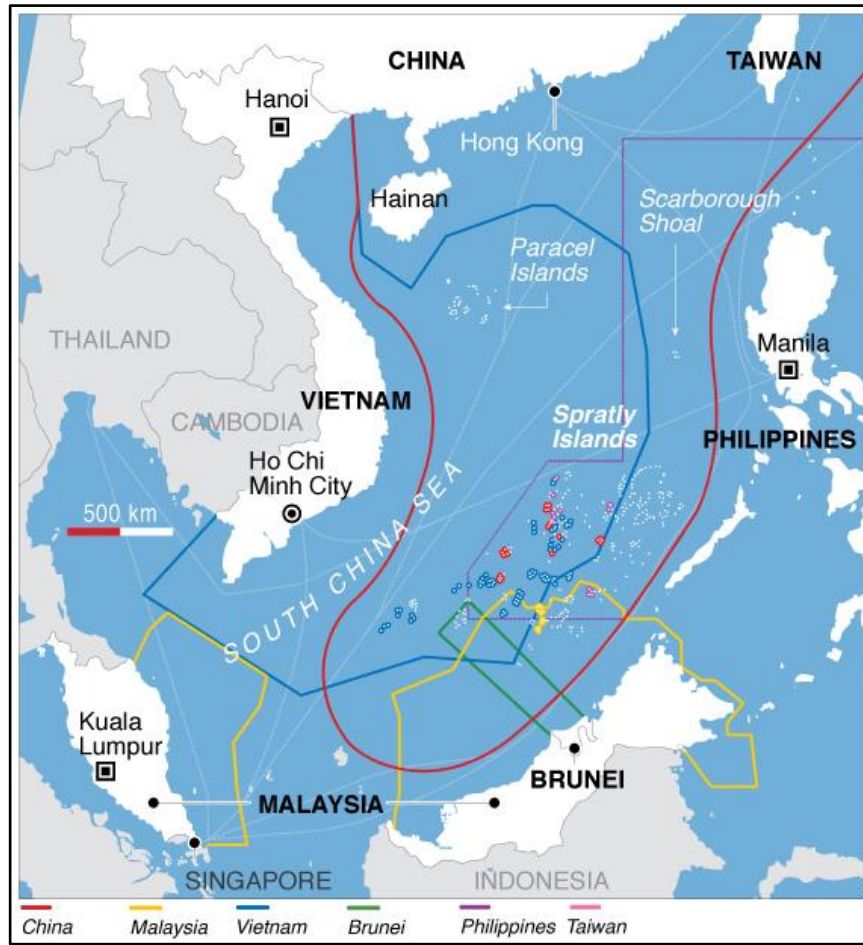
These factors in turn lead to a common national militarily relevant objective amongst all the various contending states: the exercise of sole control over the features within their claims. To achieve this logically requires that nations both remove competing occupiers from within their claims, and then maintain control of any newly gained features and also any existing contested holdings. These outcomes are militarily relevant as they can clearly be directly progressed through the use of armed force. Nations can use their military power to eject competitors from their claims, and then exert possession themselves; and also to defend themselves from other nations seeking to eject them in turn.

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<sup>265</sup> A classic example being the ongoing disputes between China and the Philippines in regarding the waters around Scarborough Shoal. For a review see Rosen (2014).



Figure B2: Indicative Claims and Selected Occupied Features in the South China Sea



Source: Voice of America, 2012. Image is in the public domain

Before discussing how sole possession drives the operation of the 5-7-7 model, it is useful to define how state control of individual sites can be described and identified, as sole possession relies on nations achieving multiple instances of such occupation. As an initial point, just as sole control is a less demanding subset of SC sovereignty, likewise are the criteria for possession sensibly defined in less strenuous terms. Thus, a state is held to control a feature when it can credibly defend its existing free use of the area and does not face a continuous challenge from other nations. Importantly, this differs from SC in that the occupying state does not need to be able to hold at risk any and all foreign units that may threaten its free use, as to achieve this would require at least permanent AAW and ASuW

capabilities to defend against the most likely forms of attack.<sup>266</sup> Instead, a state has control, in practice, when it is the only nation *persistently* deploying an armed force at the site – and this force can *credibly* defend itself from a likely adversary.

This definition has two components, persistence, and credibility, that are separate but operate together to give possession. In terms of the former, a state's control is most definitive when it is the only nation with (para)military forces (structures and/or personnel) visible on a feature. This reflects that if other armed forces are absent, they cannot easily interfere with its free use of the area. Or, at sites lacking any land-based forces from any nation, a state has control when its forces are the only regular (para)military air and/or ship-based patrolling presence at the area, with other nations not generally physically contesting such patrols or the activities of its civilian assets in the area, such as fishing vessels.<sup>267</sup> Again, having the only persistent presence, the state's use of the feature is broadly free.

In terms of credibility, this reflects that any possession is tenuous if the forces present can be easily overwhelmed. In turn, the minimum capabilities required for credible defence are scenario dependent. For situations of ongoing peacetime control, both land forces and patrols only need to be (and are expected to be) lightly armed: troops and coastguard ships equipped with machine guns and similar. Such "light forces" are able to defend themselves against the kinds of limited threats that can sensibly be proposed as still equating to peacetime coercion: small strike forces of light troops (such as saboteurs) and/or foreign civilian poachers or lightly armed adversary (para)military units. However, in the face of a major military attack (a "war" scenario), the defending state will deploy any and all of its available military assets to seek to destroy the aggressor. The peacetime versus war scenarios are based on the 5-7-7 model (which is intended to resemble real-world

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<sup>266</sup> Ongoing free use that held at risk all enemy impacts would require constant defence, at least, against the missile, bomb, and troop assaults that could be launched – needing AAW and ASuW to defend against munitions and aircraft, and AA forces respectively.

<sup>267</sup> A nation would be control even if other states' occasionally patrolled the feature, and these units fired warning shots at its forces. Such actions would be highly coercive but not sufficient to interrupt its control. However, regular foreign patrols (let alone a continuous deployment) that consistently interfered with its forces or its civilian units would indicate control was contested.

decisions), under which defenders expect to have enough warning of any attack to muster a proper defence (requiring in turn the aggressor to deploy stronger offensive forces). Hence light forces are suitable for ongoing peacetime control, although states may opportunistically use military units as part of patrols, or at times deploy heavier weapons (such as missiles) at sites. Of note, the above scenario is supported by observations of actual control forces in the SCS, with states generally having fairly sparse and light structures on features, heavy weapons being very rarely deployed, and coastguard patrols outnumbering naval ones.<sup>268</sup>

Finally, for clarity, a state with land-based forces in position is always deemed in control until these units are displaced – even if another nation regularly contests the site’s waters. This is because the country with land forces does, literally, have free use of the feature itself until another country seizes it. Based on this, when nations seek to eject occupiers they are considered to, at minimum, aim to replace the current form of occupation with its equivalent: land forces supplant land forces, patrols supplant patrols. This does not mean that a new possessor may not build an outpost where none existed, simply that this is not presumed to occur. Also, since land forces are not expected to have heavy weapons that enable them to exert force into surrounding waters, any existing or succeeding land-based occupation is deemed to be supported by armed patrols, to enable control over local waters. Further, once a state has control, it is presumed to deploy civilian economic assets into the waters around the feature, such as fishing vessels, to make use of the rich SCS resources and so begin to gain the benefits of control.<sup>269</sup>

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<sup>268</sup> The author is a former imagery analyst with the Australian Department of Defence. Imagery of island-based forces can be found at CSIS (2018c); and analysis of this showed no indication of permanently heavy armaments, with across the investigation period there being only one confirmed deployment of such weapons, by China in 2015 (The Guardian, 2015). Also, the dataset used in Chapter Seven showed coastguard patrols occurred at some double the rate of military ones.

<sup>269</sup> Rich fishing grounds exist around many features, often causing quarrels over resources, such as that between China and the Philippines regarding the waters around Scarborough Shoal. For a review see Rosen (2014).

## Targets and Outcomes

As noted above, states' overarching common national objective in the SCS is, logically, the exercise of sovereignty – absolute control, including by ejecting competitors who possess features within their claims, and then holding on to these and any other contested areas they already control. When focussing on states' achieving sole control of features, this leads to a clear set of targets for any claimant nations' military operations: the various disputed features within its claim. It also generates two military outcomes applicable to all states regardless of their motivation: to be able to defend territories that they already control, and also to be able to conquer those held by others. In turn, to be able to achieve these ends requires the conduct of certain types of operations, with associated equipment requirements, which are described below. Of note, the capability to conduct such operations, manifested in holdings of relevant equipment, can be expected from all state-types. This might seem incongruous for a DR(GLS) nation, but in fact even such states should develop “offensive” capabilities to be able to reclaim their own lands if they are lost. Because of this, the true intent behind such forces when observed is unclear.<sup>270</sup>

All nations thus have motivations to defend existing possessions and gain control of new territories (or recapture their own), which leads to the development the capabilities to defend and conquer territory regardless of underlying motivations. Through these matters, the basis is laid for assessing balances of power in the SCS and hence assessing state behaviours. Nations' capabilities for offence and defence at particular locations (each of which is treated as a separate foreign policy goal for a state, and considered as an individual AO) reflect their positions there in a balance of power dyad. Once power-rankings are determined, states' actions in terms of the strategies they use to achieve these goals serve to reveal underlying motivations. For example, a strongly superior nation with the capacity to easily conquer a

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<sup>270</sup> Highlighting difficulties in distinguishing offensive and defensive weapons noted in Chapter Four.

territory that, instead, chooses to work cooperatively with the country that actually has control of the feature is much more likely to be a DR(GLS) state.

*Key Locations: Centres of Gravity and Secondary Targets*

To be able to most effectively compare the behaviours of states in such a way requires selecting geographical targets that should logically provide sufficient incentive for nations to act acquisitively towards them and thus provide data to be able to identify underlying motivations. That is, while OR states are already predicted to relentlessly pursue the acquisition of valuable terrain; DR states are more willing to allow matters to lie fallow – and should countries do so they may be of either Status Quo subtype. Ideally, particularly attractive geographic features can be chosen that should provide incentive even for these nations to make repeated attempts to gain a share, with their approach in doing so helping reveal whether they are GS or GSL states. It is worth repeating here that in a situation of existing territorial disputes as in the SCS, no nation, including DR(GLS) states, is under any obligation to not pursue lands that it perceives as rightfully its own. It is the manner and extent of the pursuit that reveals underlying motivations. Separately, the more that tempting targets are sought by potential aggressors, the more that the controlling state responds, thus highlighting identifying patterns in its behaviour.

In this dissertation, such first-order targets for all state-type are considered to be, where these exist within disputed zones, what are referred to as CoG, and all nations are thus also expected to concentrate on defending such features. A CoG is defined as an island (natural or man-made) that hosts the more substantial facilities such as ports, airfields and military outposts that allow it to form the core of nation's presence in an area. Five of the six contending nations in the SCS have such CoG, with these six sites being in the Paracels on Woody Island (China); on Pratas Island in the Pratas group (Taiwan); and in the Spratlys on Swallow Reef (Malaysia), Thitu Island (the Philippines), Itu Aba Island (Taiwan) and Spratly Island (Vietnam). Also, in 2014 China commenced extensive reclamation efforts to convert what were previously rocks at Subi, Mischief and Fiery Cross Reefs into substantial military

bases.<sup>271</sup> While by 2015 these features were not yet CoG, they are included as the author's analysis of imagery<sup>272</sup> shows that sufficient land was available from 2015 to turn these new islands into potentially tempting targets (CSIS, 2018c). Only Brunei lacks a centre of gravity in the SCS.

Revisionists are presumed to focus on conquering CoG as these provide the most valuable opportunities for gaining power in an area. This is because such outposts offer the best prospects for a rapid, decisive, and cheap victory (i.e., an opportune moment for aggression) by "knocking out" another country's main ability to control a territory, rather than a drawn-out effort to capture multiple smaller garrisons. Conquering large features also offers a state the most room for its defences, sensors, and support facilities to secure its new acquisition. These defensive advantages also explain why aggressive DR(GS) states too should focus on such features, as these provide the best chance of hanging-on to the new territory should other claimants seek to capture it in turn. Finally, their greater economic potential (not least because CoG are most easily located on the types of islands that grant EEZ) makes them the most appealing to less violent DR(GS) and DR(GLS) states in terms of gaining control without conflict or reaching cooperative resolutions with the governing nation short of conquest.

The six various CoG sites, their contending states, and those nations' military objectives are listed in [Table B4](#) below and discussed in detail in sections two and four of the MPA and the MPD. Of note, in [Table B4](#) (and throughout the dissertation) countries' military objectives and capability needs in terms of areas that they do not control are *always framed from the perspective of seeking violent conquest*.<sup>273</sup> This is because a presumption of offensive intent provides the most effective basis upon which to assess their military power and then interpret actions. That is, a country's position in the balance of power at location it should always be

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<sup>271</sup> Strictly speaking only Fiery Cross commenced major reclamation in late 2014; however, all Reefs are judged suitable for AA/MEZ in 2015, and are treated collectively for analytical convenience.

<sup>272</sup> The author is a former imagery analyst with Australia's Department of Defence.

<sup>273</sup> Of course, at locations that nations do control they are presumed to seek defence.

examined from the perspective of whether it has the capacity to take the position by force. Once it is determined to be inferior, in broad parity, or superior to the defender, *then* its actions, acting coercively or cooperatively, can be fairly assessed.

Where CoG do not fall within a disputed area, as secondary objectives nations are presumed to seek to conquer whatever features do exist that are occupied by their adversaries.<sup>274</sup> They may seek to do so for reasons including simply achieving their objectives of sovereignty; pre-empting efforts by the current occupier to further embed their control, such as by island-building; or seeking to ensure their own exclusive economic exploitation of the area (concerns which also apply to CoG). Such “secondary targets” range from true islands or rocks through to submerged features, and may be controlled by an incumbent through avenues such as outposts or simply permanent naval or air patrols. When attempting to conquer such territories, the attacking state will seek to eject the occupier, in whatever form it exists, and then control it through their own outposts or simple patrols. Of note, the existence of only secondary targets may occur because principal facilities fall outside the borders of a disputed zone, noting some nations’ claims only partially overlap, or simply because only this type of feature exists in a particular area.

In the SCS, nine such secondary targets were selected at Amboyna Cay, and Barque Canada, Louisa and Commodore Reefs in the Spratlys, together with Macclesfield Bank and Scarborough Shoal. Also, before China commenced conversion of Subi, Mischief, and Fiery Cross Reefs into large facilities they were small rocks, occupied with minor outposts since no later than 1995 (CSIS, 2018c). Hence these locations are also included as illustrative secondary targets to assess state behaviour as balances of power shifted<sup>275</sup>. These secondary features, controlling and claimant states, and military objectives, are also included in [Table B4](#).

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<sup>274</sup> Again, such behaviour is only actually expected of OR and on occasionally aggressive DR(GS) states, but strong DR(GLS) and less violent DR(GS) nations will have requisite capabilities regardless. Again, the actions of suitably equipped nations towards secondary targets provides a basis for determining underlying motivations.

<sup>275</sup> Mischief Reef is also included as it was the site of China’s 1994–1995 land grab.

Of note a range of further secondary targets also exist throughout the SCS, with the Philippines, for example, contesting no less than 20 such sites with one or more of China, Taiwan, Malaysia, and Vietnam. But the selected sites were chosen based on their nature as being the only type of feature in a region (Macclesfield and Scarborough – with these also being the only features controlled solely by patrols), having their nature change (the Chinese-held Reefs), or being contested by the greatest number of states. They thus provide a balance between a manageable number of sites for investigation and providing insight on the most states.

Through the process of identifying these primary and secondary targets, a list has been developed in Table B4 of 15 potential Areas of Operation (AO)<sup>276</sup> that provides specific militarily relevant targets for national efforts (i.e., strategies) to attempt to maintain control and/or gain control. Hence, military balances of power can now be assessed at these sites, and thereafter strategies assessed to identify state-types. In addition, the table highlights the complexity of competing interests in the SCS.

### *Defining Controlling States*

Of note; for Table B4 it was necessary to determine which states should be considered as de facto control of which features and when – an important issue since this influences how actions are assessed when considering nations' behaviours.<sup>277</sup> While no position is taken here on the rightful ownership of the various features, control was adjudicated by the several counting rules, with the results reflected in Table B4 and throughout Chapter Six and the MPA. These rules, listed below, reflect a focus on the practical realities of how nations control areas, and indeed informed the previously provided definition of feature possession:

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<sup>276</sup> This acronym is used for both single and multiple AO, with the intent depending on context.

<sup>277</sup> Of course, de facto control itself is divided into regular and longstanding de facto control based on the duration of a states' possession, however this is not addressed here as it is not relevant to the 5-7-7 process. These issues are discussed in Chapter Three, Section IV; Chapter Seven; and Annex C.



- Features physically occupied solely by one nation's (para)military land-based forces on 1 January 1995 were judged to be under that state's respective control.<sup>278</sup> Most MPA features have met this definition of sole control since at least the late 1980s (CSIS, 2018c) and it also includes China's control of Mischief Reef, which Beijing occupied around 1 January 1995. For the MPA, this category only does not apply to Macclesfield Bank, Scarborough Shoal and Louisa Reef.
- Features where one nation had the only regular naval and/or air patrol presence, with other states not generally contesting such patrols, were also considered controlled by the primary patrolling state (the Philippines for Scarborough Shoal, and China for Macclesfield Bank). For the Shoal, Chinese forces did conduct some patrols before seizing it outright in 2012, however the pre-2012 efforts are not deemed to remove Manila's status of possession.
- Louisa Reef, having no outpost or consistent patrols, is considered uncontrolled. However, Brunei is treated as the "defending" state in balance of power assessments. This reflects that Louisa Reef is the sole feature claimed by Brunei, providing the nation the greatest incentive to defend it. In turn other countries, while too claiming the Reef, already have other possessions (including CoG) that serve their purposes. Hence, they were considered less likely to defend the Reef. Brunei is afforded relevant UNCLOS maritime zone rights (i.e., use of the Reef's TS) due to the site being uncontrolled but within Brunei's EEZ.
- Features were treated as controlled by a new state once it met the above criteria for possession. That is, it was in sole land-based occupation, and/or it had the only regular patrolling air and/or maritime presence, and any other contesting nation had withdrawn and did not engage in frequent patrols, or physically interfere with its patrols. This applies to China at the Shoal in 2012.

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<sup>278</sup> Indicated by the presence on the feature of the nation's personnel and/or structures built by it, and the absence of competing land-based forces from other states.

## Caveats

Before moving to examine the operational capability requirements, two caveats are important. Firstly, it is not incumbent upon States to conquer new features, let alone in the order described above (i.e., focussing on CoG), or in the ways proposed below (i.e., large scale military operations). But as a working concept, nations are held to have these goals and to pursue them via the means described. Indeed, even should states seek conquest by other means (such as a drawn-out blockade of a site), the results of the 5-7-7 model can be understood as informing their views of what a military assault scenario would involve, potentially providing incentive to use other approaches.

Secondly, a note of caution needs to be raised about the broader military utility of island-based forces in open conflict. It is true that all the contesting nations (except Brunei) deploy some land-based forces to their islands to gain the obvious diplomatic, public and legal benefits of the “fact of” occupation; together with making their possessions difficult for a competitor to seize. And of course, surveillance equipment on such islands allows for the persistent detection of potential intruders in the area. But no state has sought to develop “island fortresses” by consistently deploying long-range ASuW and AAW systems (CSIS, 2018c). Only China has deployed such systems but even then, only after the study period, commencing in 2016, and intermittently rather than continuously (CSIS, 2017; Gady, 2016). This is despite their being no conceptual impediment to such units being deployed earlier.

Similarly, only China has sought to build facilities able to house such systems more permanently, but this again commenced late, around 2014, and mainly finished by the middle of 2016, despite the potential to build such capabilities earlier. And at Macclesfield Bank and Scarborough Shoal, controlled by China, there have been no efforts to build facilities of any type despite there being no obvious technical impediments to do doing so. Further, other nations have not sought to build “fortresses” despite engaging in various other upgrades (including minor defensive

improvements) to their island facilities over time (CSIS, 2018c). The overall lack of effort by states to deploy and build such capabilities may reflect that such island-based forces, due to being in fixed positions (rather than the moving targets that are ships and aircraft) have been described as being easy targets in wartime (LaGrone, 2016). Alternatively, any of a range of idiosyncratic technical or cost factors may have mitigated against such investments.

While noting the above, none of these factors logically detracts from the appeal that conquering features should have to nations with territorial aspirations. Hence the 15 AO are considered as suitable sites for the assessment of nations' behaviours, with these too considered to be influenced by states' abilities to meet military operational requirements for the capture and defence of island territories.

### **Defining Operational Needs, Effects and Capability Requirements**

Based on the above, nations are presumed to seek to conquer and defend specific CoG and secondary targets in the SCS. This generates for states certain operational needs and associated capability effects that are discussed below. Of note, quite extensive needs are identified for offensive operations due to the OR position that states will only attempt conquest when there is an "opportune moment" for quick and cheap victory, to gain maximum benefit at minimum cost. This requires that an attacker be able to proceed with a measure of safety, driving more extensive requirements for effective self-defence. Summaries of nations' operational needs (based on the descriptions provided below) at each are AO are in [Table B4](#) above. Also, the requirements developed are applied only to mainland-based naval and air forces able to reach these locations. While air, naval and army units located on islands could also be included, they are not, as the nature of the presumed operational scenario (discussed further below) renders them moot.

**Table B4: Key Areas of Operation, National Objectives and Operational Needs in the South China Sea**

	Geographic Feature and Type														
	Woody Island (CoG)	Spratly Island (CoG)	Fiery Cross (Sec B/A)*	Subi Reef (Sec B/A)*	Mischief Reef (Sec B/A)*	Thitu Island (CoG)	Itu Aba Island (CoG)	Swallow Reef (CoG)	Amboyna Cay (Sec A)	Barque Canada Reef (Sec B)	Commodore Reef (Sec B)	Louisa Reef (Sec B)	Pratas Islands (CoG)	Macclesfield Bank (Sec B)	Scarborough Shoal (Sec B)
Claimed	CHN, TWN, VNM	CHN, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, TWN, VNM, MLY	CHN, MLY, PHL, TWN, VNM	CHN, MLY, PHL, TWN, VNM	CHN, MLY, PHL, TWN, VNM	CHN, TWN, VNM, MLY, BRN	CHN, TWN	CHN, TWN	CHN, PHL, TWN
Controlled	CHN	VNM	CHN	CHN	CHN	PHL	TWN	MLY	VNM	VNM	PHL	N/A	TWN	CHN	PHL– 1995–2011 CHN – 2012+
Objective and Need: BRN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Control (EMEZ)/ Defend (SD)	N/A	N/A	N/A
Objective and Need: CHN	Defend (SD)	Conquer (AA/MEZ)	Defend (SD EMEZ / SD)	Defend (SD EMEZ / SD)	Defend (SD EMEZ / SD)	Conquer (AA/MEZ)	Conquer (AA/MEZ)	Conquer (AA/MEZ)	N/A (focus on CoG)	N/A (focus on CoG)	N/A (focus on CoG)	Control (EMEZ)	Conquer (AA/MEZ)	Defend (SD)	Control 1995–2011 (EMEZ) Defend (SD EMEZ) 2012+
Objective and Need: MLY	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Defend (SD)	Conquer (AA/MEZ)	Conquer (EMEZ)	Conquer (EMEZ)	Control (EMEZ)	N/A	N/A	N/A
Objective and Need: PHL	N/A	N/A	Conquer (EMEZ-AA/MEZ)	Conquer (EMEZ-AA/MEZ)	Conquer (EMEZ-AA/MEZ)	Defend (SD)	N/A # (TWN allied US)	N/A	Conquer (AA/MEZ)	Conquer (EMEZ)	Defend (SD)	N/A	N/A	N/A	Defend (SD EMEZ) 19952011 Control (EMEZ) 2012+
Objective and Need: TWN	Conquer (AA/MEZ)	Conquer (AA/MEZ)	Conquer (EMEZ-AA/MEZ)	Conquer (EMEZ-AA/MEZ)	Conquer (EMEZ-AA/MEZ)	N/A # (PHL allied US)	Defend (SD)	Conquer (AA/MEZ)	N/A (focus on CoG)	N/A (focus on CoG)	N/A (focus on CoG)	Control (EMEZ)	Defend (SD)	Control (EMEZ)	Control (EMEZ) 2012+
Objective and Need: VNM	Conquer (AA/MEZ)	Defend (SD)	Conquer (EMEZ-AA/MEZ)	Conquer (EMEZ-AA/MEZ)	Conquer (EMEZ-AA/MEZ)	Conquer (AA/MEZ)	Conquer (AA/MEZ)	Conquer (AA/MEZ)	Defend (SD)	Defend (SD)	N/A (focus on CoG)	Control (EMEZ)	N/A	N/A	N/A

Notes: Country Codes – BRN: Brunei; CHN: China; MLY: Malaysia; PHL: Philippines; TWN: Taiwan; VNM: Vietnam. Feature Type: CoG: Centre of Gravity; Sec-A: Secondary, Amphibious Assault (AA) Possible, Sec-B: Secondary, construction effort or naval patrolling required. N/A: Not Applicable. \*These Reefs were unsuitable for AA before 2015. # Both TW and PHL have defensive security arrangements with the US, so are considered not to target one another’s outposts. Dates in various entries and associated changes of objectives reflect changes of control discussed in Section III.

Finally, before describing the needs and requirements in detail, a general note applies to both offensive and defensive analyses. While the MPA conducts annual assessments, of course for any nation a range of capabilities are inducted (or removed) over the course of a year. So, a nation's ORBAT may be different in December than January. To provide consistency in measuring forces, the counting rule was used that any capabilities that came into service over the course of a year were considered applicable to that entire 12-month period.

### Offensive Needs

Nations seeking to conquer (or reclaim) primary or secondary features will conduct broadly similar operations, generating broadly similar needs, regardless of the nature of the target and their intended means of exerting control (land-based occupation or enduring patrols). However, certain key differences exist in detail, discussed below, and also in terms of when the "initial battle" (that is the focus of the overall power assessment process) is considered to occur – with this addressed in detail in the operational scenario section. Importantly for the discussion here, however, the initial battle is not considered to occur in all instances when the aggressor first seizes control, indeed it may occur many months later. Further, the aggressor is presumed to believe that after the initial battle, if it is victorious, that the defender will sue for peace, allowing it to use light forces for occupation. This aligns with the noted Realist focus on short-term victory rather than the potential for long-term wars.

To capture any feature with a measure of safety, and then enjoy its benefits in similar circumstances, an aggressor essentially needs to complete two tasks. Firstly, it must generate a zone of SC encompassing the feature so that those assets vital to occupying and exploiting the area (i.e., light land-based and patrol units, and economic exploitation assets<sup>279</sup>) have a reasonable chance of protection when threatened by the defender during the initial battle. To achieve such SC inherently

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<sup>279</sup> Recalling civilian assets are presumed to begin exploiting an area once a state first seizes a site.

involves the attacker defeating or driving off any defending naval and air platforms using its own equivalent forces; a process that also grants it preliminary control (noting defending land forces are not considered relevant). Secondly, afterwards, it must begin the process of enforcing its ongoing peacetime possession, either via land-based forces on CoG and some secondary targets, or by armed patrols.

While this process encompasses two successive tasks, these can in practice occur concurrently. For example, the same forces that a state uses to defeat defending platforms can then, effectively immediately, begin enforcing ongoing control. Despite this overlap, the way the (re)conquest process generates operational needs can most easily be understood by considering the tasks separately and in reverse.

#### *Ongoing Control Enforcement Needs*

To address first those situations where nations seek to exert ongoing control via a land-based presence, for these they must engage in some form of amphibious operation to actually deploy such forces onto a feature. In fact, two types of operation can be determined. A full AA is applicable to larger features and involves the landing of specialised troops such as Marines to seize the site and gain possession. In turn at secondary features, amphibious operations involve construction operations (using mainly civilian Construction Resources [CR]) to either reclaim land or install or rebuild outposts on stilts.<sup>280</sup> Such work may take many months to complete, but once done, also allows for the exercise of control. These issues lead to the first operational need for an aggressor: to be able to conduct AA and/or CR activities at site(s), depending on the features it claims.

Separately, where a state seeks to enforce control by enduring patrols, it must of course be able to actually deploy at least light forces regularly. This requirement also applies where it has land-based forces, to allow control over nearby waters.

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<sup>280</sup> As whatever small facilities existed initially would likely have been destroyed in the initial attack.

This leads to the second operational need for the aggressor: the ability to conduct persistent lightly armed ship and/or air patrols.

### *Sea Control Needs*

Of course, the aggressor realises that at some point, the defending force will seek, at a time most advantageous to itself, to defeat its effort to gain and enjoy control, and do so by destroying the relevant vital assets. For AA situations, these targets are the amphibious forces (as otherwise the assault cannot occur), and the ideal (but brief) window is before the assault, when these units are concentrated aboard vessels and vulnerable to attack from the air, surface, or subsurface. For CR, the vital assets are the civilian units engaged in long-term construction (without which there can be no occupation), but the window is broader – they are vulnerable to all avenues of attack for months while at work. This situation too applies in maritime patrol situations, but with the defending state seeking to destroy the vital civilian economic assets exploiting local waters. Of course, such assets are not as crucial to the attacker's control as are AA or CR units in their respective situations.<sup>281</sup> But they are key targets in patrol scenarios due to aggressor's need to defend them: as noted in Chapter Three, (para)military forces exist in part to protect citizens' lives.

The main effort by the defender occurs during what is considered the "initial battle" but as noted above the specific timing of this may vary. Considering this uncertainty, for the aggressor to be able to conduct its amphibious and/or economic operations with a measure of safety, it must be able to provide its vital units with protection against any and all likely attack avenues, at least until the initial battle is concluded. This translates to a requirement for SC.

Of note, there are three key avenues available for states to achieve SC: decisive battle, blockade and the imposition of a MEZ. A decisive battle is just that, a specific instance of combat where a nation defeats its adversary's military so completely

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<sup>281</sup> Hence even though such assets may be present in those scenarios, they are not counted as vital.

that it is able to exercise SC by default: no enemy forces exist to threaten it. A blockade occurs where a nation uses its forces to corral those of its adversary in their bases; as these are unable to venture forth, again SC is achieved (Till, 2004. pp. 157–183). A MEZ is where a nation deploys forces to exert defensive control over a certain area of ocean for a period of time, threatening to destroy any enemy that intrudes upon it from the available avenues of the air, surface and underwater environments (Tellis, 1990).

This dissertation proposes that the MEZ is the appropriate operation that nations will attempt in the SCS when seeking to achieve SC. A MEZ is considered particularly suitable for various reasons, including:

- It allows the concentration of escort forces to protect vital (and vulnerable) AA/CR or other civilian assets from all potential threats, while also (in amphibious scenarios) being able to fire upon any incumbent defenders.
- MEZ forces, in delivering protection to vital assets, usefully provide (and are considered to comprise) the units the aggressor uses to contest an initial battle (a matter further addressed in the operational scenario description).
- Using a MEZ allows an aggressor to concentrate its forces in a single initial battle against one opponent (the defending state) and then any other attacker,<sup>282</sup> noting that in the SCS many nations contest frequently contest individual sites. Such concentration is preferable rather than attempting to achieve SC through repeated decisive battles or concurrent blockades against all the other nations that might contest the feature, an approach that would disperse and weaken an aggressor's forces.

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<sup>282</sup> Although any such subsequent battles are beyond the scope of this dissertation, which focuses on the initial battle as discussed in the operational scenario below.



- For a Revisionist, a MEZ can serve in effect as blackmail (which OR predicts should be preferred before combat): it raises the threat of force being applied if another state intrudes upon it.

Based on these considerations, nations are presumed to only attempt offensive operations when they can achieve an appropriate MEZ (noting tri-dimensional control is not always required). Further to this, *all references to MEZ operations in this dissertation relate to aggressive Revisionist actions to capture territory.*

Two types of MEZ can be determined. A “standard” one for amphibious assaults (AA/MEZ) is put in place by air and naval units and is centred around the invasion force until the initial battle occurs and, if this goes well, then the feature itself as the land forces gain control, allowing MEZ forces to withdraw. As the initial battle occurs quickly (i.e., before the troops conduct the assault) the AA/MEZ need only remain in place for a few days. Alternatively, an Enduring MEZ (EMEZ) is put in place in the same ways but potentially for months, and to achieve the same end, for either CR or permanent patrolling situations. The AA/MEZ and EMEZ are identical in requirements but differ in force structure implications, as discussed in Step Two.

#### Offensive General Capability Effects

With operational needs defined, the associated capability effects can now be discussed. Those required for amphibious operations are to be able to land troops and support equipment, or to deploy marine construction equipment. For patrol operations, the required effect is to be able to deploy air and/or ship patrol units to a site, effectively continuously. For MEZ, a state must also be able to persistently and consistently (i.e., evenly in all directions) enforce SC out to a certain distance. The need for persistent and even coverage is driven by fact that the MEZ must protect vital assets against any adversary, that may attack from any and all domains, at the time of their choosing. A MEZ that is not persistent or offers uneven protection would therefore open key potential vulnerabilities, reducing the chance for quick, cheap victory that an aggressor is presumed to seek.

The issue of the distance required for a MEZ is driven by consideration of the types of threats it must ward against. This dissertation assumes a force must be able to detect and destroy air, surface and submarine targets (as moderated by the actual assets of specific adversaries) out to a perimeter range of 50 km (i.e., a circle of 100 km diameter). This represents a single realistic figure that places an invasion force (or civilian ships clustered around a feature) beyond the reach of the most commonly available air, sea and submarine-launched weapons in the SCS that may threaten such critical assets.<sup>283</sup>

In more detail, from an AAW perspective, a 50 km perimeter places the ships at the centre of the MEZ beyond the range of many of the most common short and medium-ranged (around 30 km) missiles and guided bombs that might be used against them.<sup>284</sup> The figure of 50 km provides a vital “buffer zone” within which attacking aircraft can be engaged before they reach the 30 km limit where they may launch weapons against ships,<sup>285</sup> greatly increasing the likelihood of a successful defence. The 50 km distance also provides some protection against the shortest ranged air-launched Anti-Ship Cruise Missiles (ASCM), the primary non-torpedo type of modern ASuW weapon. For example, both the Chinese YJ-8K and French AM-39 *Exocet* both have range of some 50 km (*Janes Weapons: Air Launched*, 2015–2016, pp. 208–211). While a 50 km MEZ provides little “buffer zone” against such weapons, it offers at least the potential for successful interception of the attacker before it launches and thus decreases the likelihood of a successful attack. Of course, many longer-ranged air-launched ASCM exist (as captured in the MPD) however it would be impractical to suggest that a MEZ must exclude any and all

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<sup>283</sup> Of course, this represents a simplification for analysis, presuming in effect that an invasion force or civilian economic assets can essentially be considered to be centred at a single point.

<sup>284</sup> Illustratively, two of the most common medium-ranged missiles, the American AGM-65 *Maverick* and Russian AS-14 *Kedge* have ranges of around 20–30km. Similarly, short-ranged anti-ship missiles such as the Chinese YJ-7 likewise have a range of some 25km (*Janes Weapons: Air Launched*, 2015–2016).

<sup>285</sup> For example, many modern jet aircraft have a cruising speed of around Mach 0.8, or 1,000km per hour. At this speed, a jet would traverse from the 50km perimeter of the MEZ to a firing range of 30km in some 70 seconds. In turn, defensive missiles such as the SA-N-7 or HQ-16, travelling at Mach 3-4, can reach their maximum range of some 40km in 30–40 seconds. Considering these figures, from crossing the MEZ boundary an aircraft would be intercepted around 30 seconds later at the 40km mark, 10km from firing range.

potential threats, at all ranges, to be effective. Against such weapons, ships must rely on specialised defences such Close-In Weapons-Systems (CIWS – rapid-firing guns) or short-ranged interceptor missiles, both designed to destroy ASCM before they hit.

For ASW, submarines' most potent weapons are torpedoes as there is no effective defence barring evasion by manoeuvre or using decoys.<sup>286</sup> Most torpedoes have comparatively short ranges on the order well less than 40 km, out to a maximum of 50 km for the most advanced weapons.<sup>287</sup> Hence the focus of the defender is to keep submarine at ranges of some 50 km, where they either remain ineffective, must risk multiple chances at detection as they seek to approach within weapon range of the heart of the task force, or attack from the very limits of their weapon ranges, decreasing the likelihood of executing a successful attack.<sup>288</sup> While some submarines can launch ASCM from farther distances, such scenarios revert to questions of specialised defences against such weapons.

Finally, for ASuW; the figure of 50 km provides protection, with buffer zone, against the shortest-ranged ASCM in the SCS, such as the YJ-8, *Hsien Fung 1*, and MM-38 *Exocet*, all of which have ranges of around 40 km (Janes Weapons: Naval, 2018). Of course, many vessels now have much longer-ranged ASCM and protection against these relies on specialised defences.

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<sup>286</sup> There is only one “anti-torpedo torpedo” currently in service, and there only with the US Navy on its aircraft carriers (Rogoway, 2016).

<sup>287</sup> For example, the modern US Mark 48 and Russian UGST torpedos, in service on USN *Los Angeles* and Vietnamese and Chinese *Kilo*-class submarines considered in this dissertation, have ranges of 50km. The older Yu-4 torpedo in service on most Chinese submarines has a range of some 15km (Janes Weapons: Naval, 2018).

<sup>288</sup> For example, the modern Black Shark torpedo has a range of 50km at a maximum speed of 93km per hour, needing nearly 30 minutes to travel this distance (Janes Fighting Ships, 2018). This would provide ample opportunity for the weapon's launch to be detected, ships to move out of the weapon's path, and an attack on the submarine to be conducted. As such weapons are typically guided from the submarine by wire or fibre-optic cables until very near the target, moving ships plus a successful attack on the submarine would likely defeat the torpedo.

## Offensive General and National Capability Requirements and Counting Rules

In turn, the various capability effects described above generate specific general and national capability requirements, which are both defined below. It is against these requirements that national inventories can be assessed to determine whether available forces can deliver operational needs at particular locations. Through this they also define the counting rules (also discussed below) that help identify which elements of national inventories even need to be considered. For example, noting that contests will occur in maritime AO, only naval and air forces need to be considered. While land-based units located on islands could also be included, they are not for reasons described in the operational scenario section further below. For offensive forces, the overarching capability requirement for each nation is, firstly, assets that can reach the respective AO from a state's bases. The means of identifying these bases is discussed in Step Two with individual distances provided in the country entries later in this section. However, noting that shorter ranges allow the greatest number of potential assets to be employed, states are presumed to seek to use their bases closest to an AO.

Of note, while absolute range is a primary constraint on aircraft, an additional one for naval forces is seakeeping. This refers to a ship's ability to manage the large waves that occur in the deep so-called blue waters of the open ocean as opposed to the "green water" of shallower seas over continental shelves.<sup>289</sup> Larger ships are required for blue water; with for example lighter Fast Attack Craft (FAC) of under 500 tons typically managing green water but Major Surface Combatants (MSC) of several thousand tons being needed to navigate blue waters safely (Grove, 1990, p. 102). While there is no agreed specific distance from shore that defines "blue water", noting footnote twenty's reference to continental shelves defining "green water" and that UNCLOS defines most continental shelves as extending 370 km,

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<sup>289</sup> As noted by the Royal Australia Navy's Australian Maritime Doctrine: "The areas in which naval forces can operate range from the open oceans, or what is known as "blue water", over the continental shelves, archipelagos and coasts in "green water" and into inshore areas and estuaries in "brown water" conditions" (Royal Australian Navy, 2010, p. 19).

blue water is considered to be anything past this distance from the nearest landmass.

Further to the above, in the SCS, depending on states' ranges from AO, they may require larger ships able to traverse blue-water to be able to achieve operational effects at these locations. Any vessels that do not meet these requirements are not considered as part of their operational forces at an AO. Of note, a state's blue water requirement is determined in this dissertation by considering straight-line distances over open water from a nation's mainland coastline to an island chain or feature, whereupon green water is taken to exist again. Hence for example if a FAC can reach a part of the Spratlys that is less than 370 km from its own coast, it is then considered as able to travel anywhere else in the island chain as long as it does not need to traverse more than 370 km of open water in a straight line to reach such a point. If smaller craft can reach islands groups from their home waters, then they are considered to be able to effectively "island hop" between features to reach points far from their original coastlines. This consideration allows small forces equipped with light craft to, when operating close to their coasts, potentially match in strength much larger but more distant militaries that must rely on a handful of MSC to reach an AO.<sup>290</sup>

Lastly, conceptually, a country's small craft (such as Vietnam's) that would normally be barred from consideration at a location such as the Spratlys (being more than 370 km away from mainland Vietnam) could potentially take a longer route to reach this objective. They could do so by travelling through various nations' (Thailand, Malaysia, Brunei) mainland "green water" until they reached a position off the coast of Malaysia that would allow them access in less than 370 km. Such approaches are not considered as, noting the multiple claimants for the same

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<sup>290</sup> The Soviet Admiral Alafuzov illustrated this point elegantly when he noted: "[E]ven a very strong fleet, operating close to the enemy's coast, may lose its advantage and not have the relative strength to carry out its mission. If one's coast is favourably configured and if there are islands extending out from the coast on which naval and air bases may be set up, then the zone over which even quite a weak fleet may still remain 'master of the situation' can be quite extensive" (Herrick (1988, pp. 182–183).

territory (not least Hanoi, Kuala Lumpur and Bandar Seri Begawan), it was judged unlikely that in a crisis a state would risk exposing its forces to attack from another nation by having its units traverse their waters. Such circuitous routings also do not support achieving surprise by an attacker or rapid defence by a defender.

- *Offensive Capability Requirement 1: Air and naval assets with range and/or seakeeping suitable to reach and operate at AO from the most proximate national bases.*

Assets that can meet the range and seakeeping requirements must, of course, also be able to deliver the needed operational effects. For amphibious operations, when seeking to conduct AA states must have appropriate heavy amphibious vessels to land troops and equipment such as missile launchers. For CR operations, nations are presumed to be able to access sufficient civilian resources.

- *Offensive Capability Requirement 2: Assets suitable for amphibious assault operations.*

Similarly, for patrol operations, nations must have appropriate air or maritime light patrol units – essentially any ship or aircraft that can be armed even with a light machine gun. Due to plentifully available large civilian ships (in addition to professional coastguard units) being able to be retrofitted with such weapons and used for patrol tasks, nations are presumed to be able to access sufficient patrol assets. Hence as with for CR, no formal requirement is listed here.

For MEZ, either individual or various combinations of platforms can be used to generate the required 50 km perimeter. While notionally air or naval forces with any form of armament (including simple machine guns, larger cannon or unguided bombs or rockets) could contribute to this end, in this dissertation the counting rule is made that only missile- and torpedo-armed platforms are considered.<sup>291</sup> This

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<sup>291</sup> An exception for one type of vessel is made for China and Vietnam, noted in their country entries.

reflects that, firstly, almost all assets in the SCS have such capabilities, hence purely gun- or bomb/rocket-armed platforms are a very small minority. And such assets' chances of survival against adversaries armed with missiles, whose shortest effective ranges far out-distance those of guns and unguided weapons, must be rated as extremely minor and so of little relevance to military power calculations.<sup>292</sup>

Of note, the counting rule used in this dissertation to determine missile and torpedo ranges was to compare the reach of an individual asset's weapons and sensors, with the shorter distance taken as a weapon's effective range. This reflects that a short-range weapon cannot engage a distant target identified by a powerful sensor, while a long-range weapon likewise cannot engage a target that has yet to be detected at all by a weaker sensor.

This decision is based on the assumption discussed in Chapter Five that nations will assess their military power based on reasonable adverse scenarios. From a weapon performance perspective, this is most sensibly determined by examining the capabilities of individual assets rather than inferring uncertain advantages based on the presence, suitability and effectiveness of third-party targeting.<sup>293</sup> The only exception is ships cooperating with their embarked ASW helicopters to hunt submarines (discussed below), as the presence of the aircraft is tied directly to the vessels and the short (50 km) ranges involved make effective communication highly likely. For all weapons and sensors, data were drawn from the *Janes* series of technical publications unless otherwise noted in the SWS or below in the CAR.

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<sup>292</sup> An argument can also be made for the broad irrelevance of purely bomb and rocket armed aircraft in the ASuW role in particular, even against ships armed only with anti-aircraft guns, a combat encounter which could occur at a handful of MPA locations in the 1990s for Malaysia and the Philippines. For aircraft to use such unguided weapons effectively against such ships, which are manoeuvring, relatively small targets that are actively firing back, then close-range and specialised methods such as skip bombing are needed, supported by extensive training. A literature review of showed no such training by Malay and Filipino pilots. Hence this threat is rated as insignificant.

<sup>293</sup> That is, sensor data provided by another platform, which might notionally have longer range sensors than those of the weapons-hosting platform.

### *Applicable Assets*

Before moving on to discuss more specific capability requirements and counting rules, it is useful to discuss the types of platforms that may be brought to bear and how their presence can be used to judge Operational Suitability. This helps illustrate how national inventories can be assessed against the 50 km MEZ requirements, and show how different assets can cooperate to achieve SC effects.

#### *Aircraft*

The first set of applicable assets are aircraft. Fighters and some Fighter-Ground Attack (FGA) can shoot down enemy aircraft and attack enemy surface ships or defending land forces; while Maritime Patrol (MARPAT) airplanes and ASW airplanes and helicopters can likewise detect and attack ships and submarines. The key benefits that aircraft bring are their speed and, for some, long range (Grove, 1990, pp. 138–140). This allows a distant target that has been detected to be rapidly approached and attacked while still far from core of the MEZ. The key limitation of aircraft for MEZ are the necessary reverses of their strengths: limited range, expense and limited individual persistence.

For example, fighters, FGA and helicopters are often comparatively short ranged, limiting their applicability to more distant operations, with larger aircraft increasing in cost dramatically. Further, due to having limited fuel, a large number of aircraft working in shifts are required to maintain a constant presence to enforce a MEZ. Finally, particularly for hunting submarines, aircraft (both planes and helicopters) do not usually have the persistence (unless working in shifts) and constant contact with the water's surface and subsurface necessary to continuously use sensors to detect the presence of such vessels and deny them access to an area. While MARPAT airplanes can have long endurance, this is measure in hours instead of days or weeks as for ships. Instead they utilise their speed to search over broad areas, frequently for many hours at a time, seeking to opportunely detect submarines



(Grove, 1990, p. 138). A list of aircraft types and associated requisite capabilities useful to achieving SC is listed in [Table B5](#) below.

### *Vessels*

Due to the limitations of aircraft, naval forces are the principal capability required to achieve *persistent* MEZ enforcement. Ships can deploy for long periods, remain in place constantly, and have weapons and sensors able to detect and attack enemy forces in the air, on the ocean surface (and land), and underwater.

The types of vessel that are useful are largely a reflection of the distance they must travel and the size and weight of equipment they require to conduct necessary tasks. In short, the further distance and greater the range of tasks, the larger and more capable the ship required.

As an initial point that was also noted previously, while FAC may be suitable for shorter-ranged tasks, MSC are needed for traversing blue-water. While there is no completely agreed definition on which vessels fall into the MSC class, the minimum size for ocean-going vessels is frequently considered to be the Corvette (vessels from 500–2,000 tons), then in escalating size are Frigates (2,000–5,000 tons), Destroyers (5,000–10,000 tons) and Cruisers (>10,000 tons) (Kirchberger, 2015, pp. 73–74; Grove, 1990, p. 102).

For MSC, the larger the vessel typically the greater its endurance (due to holding more fuel and supplies for its crew) and the more capable its sensors and weapons, and the larger its stores of the latter (Kirchberger, 2015, pp. 65–74). Vessels up to the size of Frigates typically focus on one task such as AAW, ASW or ASuW; with Destroyers and above able to conduct either multiple tasks or having extremely sophisticated specialised capabilities (Grove, 1990, p. 102; Royal Australian Navy, 2010, p. 139). Vessels of Frigate size and above can also often embark a helicopter

(typically of the ASW type<sup>294</sup>) to bring the benefits of such an asset to their operations (Kirchberger, 2015, p. 73). The role of the ASW helicopter is critical since (as discussed further below) it is arguably *the* key means of defence against submarines, being able to operate at long ranges but maintaining persistence due to being based in the MEZ aboard a ship.

Beyond MSC, a range of other vessels are also applicable. Submarines can serve to deny the sub-surface and sea-surface domains in a MEZ to adversary ships and submarines, while aircraft carriers can be used to bring the benefits of aircraft to a naval force. But such assets too have limitations. Comparatively few submarines and crews have sufficient sophistication to conduct ASW, being mostly more suited to hunting comparatively noisy ships rather than other, very quiet submarines. In turn, aircraft carriers are too expensive and complex for all but the most competent and well-funded navies (Kirchberger, 2015, pp. 66–75).

Finally, in some instances one asset (such as a multi-role destroyer) can notionally impose a MEZ, various aircraft and ships together can be used to do so cooperatively. For example, surface ships may be used for ASuW and ASW, with patrols of land-based aircraft providing AAW protection; or helicopters from ships may conduct ASW while MSC guard against aircraft and surface ships. An illustrative list of the platforms that may exist in national inventories and how these align with the capability requirements for MEZ operations, including amphibious landings, is provided in [Table B5](#).

- *Offensive Capability Requirement 3: Assets with missiles, torpedos, and sensors suitable to support a 50 km MEZ.*

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<sup>294</sup> This reflects that submarines have limited, if any AAW capability; hence an ASW helicopter can operate fairly safely, whereas a helicopter seeking to attack a ship would be at much greater risk.

Table B5: Offensive Sea Control Capability Requirements and Associated Assets

		Capability Requirement		
		Anti-Air Warfare: detect, identify, and destroy air targets	Anti-Surface Warfare: detect, identify, and destroy sea surface targets	Anti-Submarine Warfare: detect, identify, and destroy underwater targets
Asset Type	Aircraft*			
	<u>Fighter</u>	X		
	<u>Strike Fighter</u>	X	X	
	<u>Maritime Patrol</u>		X	X
	<u>Helicopter</u>			X
	Ship			
	<u>FAC***</u>		X	
	<u>MSC: AAW**</u>	X		
	<u>MSC: ASuW**</u>		X	
	<u>MSC: ASW**</u>			X
	<u>Aircraft Carrier</u>	X	X	X
	Submarine			
	Submarine		X	X
	Amphibious			
	Amphibious	Necessary to conduct prompt capture of occupied islands.		

Notes: \*Aircraft have strong range limitations that limit their ability to support SC in the SCS. \*\*MSC indicates a Major Surface Combatant (Corvette, Frigate, Destroyer, Cruiser) focussing on Anti Air Warfare (AAW), Anti-Surface Warfare (ASuW) or Anti-Submarine Warfare (ASW). Some MSC may be multi-role. All modern MSC have some potential to attack land targets by gunfire. Table informed by similar works by Kirchberger (2015) and Tellis (1990). \*\*\*Fast Attack Craft – light, missile armed vessels.

## Offensive Operational Suitability and Resilience Assessments, and Further Counting Rules

The above section has described the overall capability requirements (amphibious transport, and assets with weapons and sensor ranges out to 50 km), and types of assets that may provide these, to achieve amphibious and MEZ operations. However, it has not provided the detailed information necessary to allow the determination of whether, of the forces a nation can project to an AO, these can actually achieve such effects.

To do this requires defining for MEZ how assets can individually or collectively cooperate to achieve SC in the various AAW, ASuW and ASW domains, and hence the minimum numbers necessary to achieve such effects. Minimum numbers must also be defined for amphibious operations. Once done for both operational types, this provides, firstly, a means of assessing overall Operational Suitability: can the forces present at an AO meet the minimum needs. Secondly, it provides a way to calculate the factor of Resilience: if more than the minimum forces *are* present, how many can be lost before required effects cannot be generated?

Regarding MEZ requirements, as noted above some MSC have the capacity to individually conduct tri-dimensional SC. Hence the most straightforward means for a force to be judged operationally suitable is for it to have at least one ship able to conduct AAW, ASuW and ASW out to 50 km.

- *Offensive Suitability and Resilience Requirement 1: No less than a single asset with weapons and sensors suitable to generate a tridimensional 50 km MEZ.*

This metric provides little guidance for situations where platforms with shorter-ranged weapons can cooperate or how aircraft can be considered. To determine this requires defining how assets can cooperate in an AO, done below.

## *Anti-Air Warfare*

The primary task of MEZ air defence is to destroy incoming aircraft before they can launch their primary weapons, ASCM, or failing this to intercept the missiles themselves. Air defence can be conducted, firstly, by ships with Surface-to-Air Missiles (SAM).

In terms of counting rules, vessels with SAM of a range of 50 km or more can individually generate AAW SC. As can vessels with SAM with ranges of 30 km or more (to provide them at least notional protection from the most common short ranged missiles), operating cooperatively to provide overlapping coverage to achieve a consistent 50 km perimeter. As a practical matter, experimentation showed that four vessels, when armed with the same weapons, are the minimum required to generate an even (circular) defensive perimeter. Further, all ships considered by this dissertation with SAM of ranges between 30–50 km had weapons of 40 km range (the HQ-16, SA-N-7B and SM1-MR missiles). Hence four vessels with 40 km range missiles are needed to generate a 50 km task force perimeter. To achieve this would require such units to be spaced evenly on a circle of minimum radius 17 km from the MEZ centre; an arrangement that also allows each unit to support all others through overlapping defensive coverage.<sup>295</sup> This is shown in [Figure B3](#) below.

When considering either single or multiple vessels, this AAW capacity is persistent as vessels are able to constantly scan the skies and intercept adversaries in any direction within range of their weapons. Further, as discussed below, certain types of such SAM are also able to intercept ASCM, providing a vital task group-wide defence against these weapons.

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<sup>295</sup> This distance was derived experimentally and confirmed through a formula graciously developed by Dr Charlie Rawlins, then a PhD Candidate at Curtin University's Physics Department. The equation, used to identify the common defensive perimeter (R2) generated by "n" number of units when evenly spaced (distance of "r1") on a circle and having weapon ranges of "r2"; is  $R2 = r1/\tan(\pi/n) + \sqrt{r2^2 - r1^2}$ . For a set radius (R1) such as 17km, the distance "r1" can be calculated by  $r1 = \sin(\pi/n) * R1$ . These formulas show four vessels in such a configuration generate a minimum perimeter of some 50.17km.

The air defence of a MEZ can also be conducted by aircraft (with no less than one persistently in position) armed with some form of Air-to-Air Missile (AAM) and patrolling the zone's airspace. In terms of counting rules, there is no minimum range for AAM to be relevant, as due to an aircrafts' speed and range it is able to rapidly operate across a MEZ to engage an adversary at or beyond the 50 km perimeter. With this said, due to aircraft needing to patrol or orbiting across a MEZ, there is no certainty that such assets will be immediately positioned to intercept incoming aircraft. Further, there is no indication AAM can consistently intercept ASCM, should they fail to intercept the launch aircraft in time.

Nations with one or more of either or both of the SAM or AAM systems that meet the above requirements individually or collectively are assessed as being able to conduct the AAW SC mission. That is, a single naval or air asset that can constantly enforce a 50 km perimeter, or cooperating amounts of four or more vessel units, are deemed sufficient. For aircraft to be persistently deployed over a MEZ will, of course, require more than a single unit as any one platform must return to an airbase to refuel and rearm. This issue, in terms of identifying minimum overall aircraft numbers to have a constant MEZ presence, is discussed in Step Two.

- *Offensive Operational Suitability and Resilience Requirement 2: No less than one ship with 50+ km SAM or four ships with 30km range SAM (40km in practice) or at least one AAM-armed aircraft persistently in place at a MEZ.*

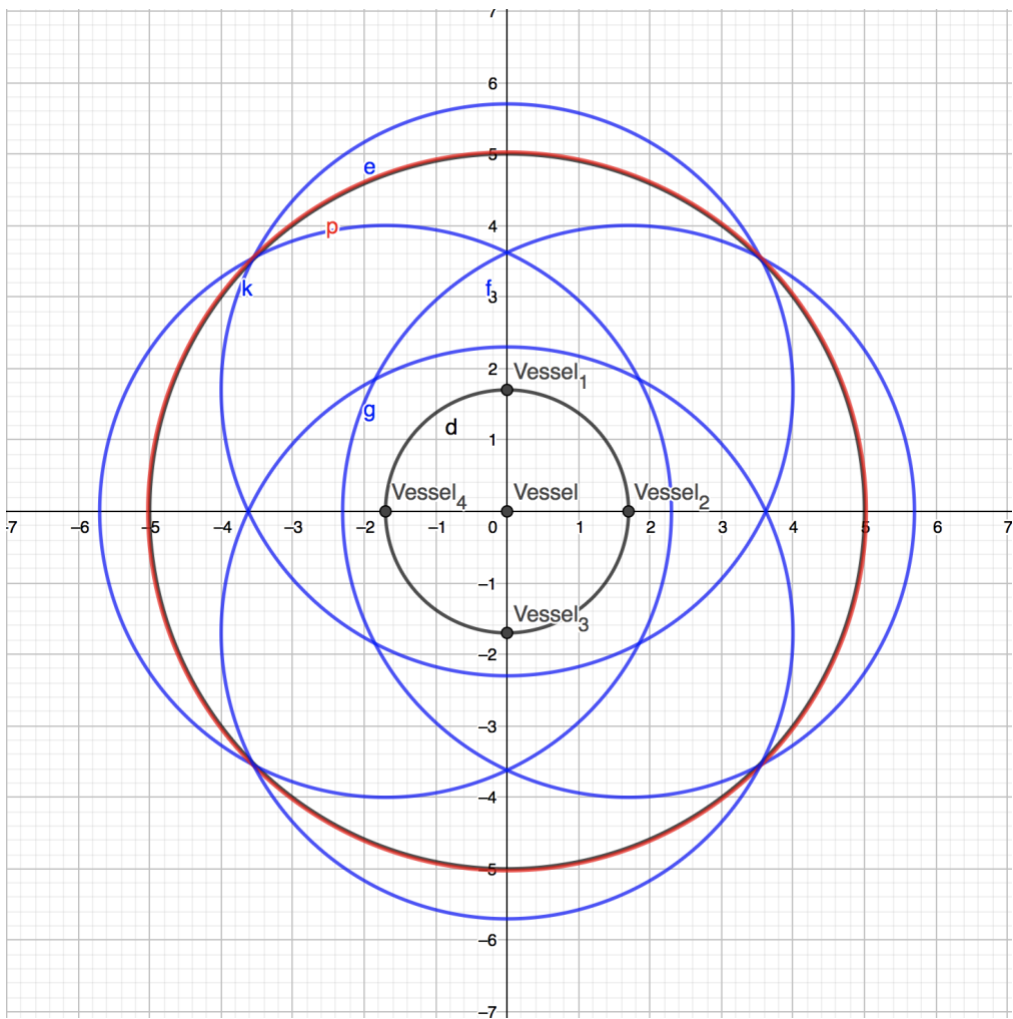
### *Anti-Surface Warfare*

The primary task of MEZ ASuW is to destroy enemy ships before they can launch their ASCM to threaten an amphibious force or patrolling naval vessels. As noted in Table B5 above, this can be conducted by ships, aircraft or submarines.

Enforcing a SC zone against ships can, firstly, be conducted by aircraft armed with missile weapons (operating as do fighters against aircraft) and individual ships or submarines with weapons having 50 km range or more. Secondly, naval assets with

shorter-ranged weapons may also cooperate to generate an equal perimeter. As a practical matter, the shortest ranged ASCM operated by SCS ships had a reach of 40 km. This requires, as with AAW in [Figure B3](#), at least four vessels with such capabilities to generate a MEZ perimeter. Regarding submarines, only China operates platforms with less than 50 km range weapons in sufficient numbers to be able to generate ASuW SC. Calculations showed that with an effective torpedo range of 15 km (typical for early generation Chinese submarines), no less than 10

Figure B3: Representation of Minimum Forces Necessary to Generate 50 km Perimeter with 40 km Range Defensive Weapons.



*Notes: Numbers on scale are tens of kilometres. Blue circles indicate 40 km weapons radius. Red circle indicates minimum common defensive perimeter of 50 km radius. Black circle represents deployment circle of 17 km radius.*

submarines are required to generate a suitable perimeter.<sup>296</sup> Alternatively, using missile ranges of 34 km (typical for more modern Chinese submarines) no less than four submarines are necessary. Nations with one or more ASuW systems that meet the above requirements for persistent MEZ enforcement either individually or collectively are assessed as being able to conduct the ASuW SC mission.

- *Offensive Operational Suitability and Resilience Requirement 3: No less than: one ship or submarine with 50+ km ASCM, or four ships with 40 km range ASCM, or 10 submarines with 15 km range torpedoes, or four submarines with 34 km range ASCM, or one aircraft with missiles persistently in place at a MEZ.*

### *Anti-Submarine Warfare*

The primary task of MEZ ASW is to destroy enemy submarines before they can launch their ASCM or torpedoes to threaten an amphibious force or patrolling naval vessels. In this dissertation, assets counted as able to generate a 50 km radius ASW perimeter are ASW helicopters when embarked on ships (i.e., permanently deployed in a vessel's hangar, not merely on a helipad) together with MARPAT aircraft able to patrol a MEZ. This notably excludes non-helicopter equipped ASW surface ships and other submarines (although the latter are illustratively included in [Table B5](#) above).

The decision to focus on aircraft reflects the particular nature of ASW operations. These are worth briefly discussing to both explain the decision and help illuminate

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<sup>296</sup> In reality, 10 submarines generates 49 km, an acceptable approximation. The radius of assured coverage is calculated by a formula drawn from Jiang (2016):  $R = r(\sin(\pi/n)+1/\sin(\pi/n))$  giving the radius of circle enclosing "n" number of smaller circles whose border touch but do no overlap, i.e., the arrangement proposed. In this equation, "R" is the radius of the overall defensive perimeter, "r" is the effective radius of an individual unit's weapons (15 km), and "n" is the total number (10) of those units available. Further, "r" is subtracted from this equation to more closely approximate the radius of the defensive circle where each unit's individual weapons radius meets. This provides the full formula of  $R = e*(\sin(\pi/n)+1/\sin(\pi/n))-r$ . As more assets are added, "n" increases and the expanded defensive perimeter can be calculated.



the considerations involved in achieving an operationally relevant model of military power.

As discussed extensively by Pittman (2008), the key problem in hunting submarines (also called boats), is finding the target. This is because submarines are extremely quiet and hence the principal sensors used to detect them, specialised hydrophones called sonars, can only do so at very limited range. But once found, due to the short ranges at which such detections occur, ASW weapons are dropped “right on top of” boats, making escape unlikely.

Due to the difficulty in finding submarines but the higher likelihood of their destruction once found, modern ASW focusses on keeping a perimeter around a surface force (in this dissertation 50 km) rather than seeking to find them as far away as possible (Pittman, 2008). This reflects that as ASW assets have short detection ranges, the greater an area they need to search the less likely they are to find a submarine. Further, such distant deployments may create sensor gaps through which boats can sneak in. Instead, ASW assets are clustered together to create an unbroken shorter-ranged cordon designed to detect submarines before they can target a surface force with their torpedoes.<sup>297</sup> This imposes a difficult choice on submarines. They can either try and attack with less effective weapons beyond this perimeter or approach regardless and face a much higher risk of being found and destroyed.

While imposing an unbroken ASW perimeter can in theory be attempted with any type of asset that can target a boat (ships, other submarines and aircraft), in practice doing so with vessels or submarines can require an infeasible abundance of platforms. For example, China’s modern *Kilo*-class submarines are equipped with MGK-400 sonars. These have a 100 km detection range against surface targets but only 16 km against submarines (*Janes C4ISR & Mission Systems Maritime*, 2018).  
Reviews of other submarines’ and ships’ sonar performance (where such

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<sup>297</sup> This is reflected in the concepts of “zone defence” as described by Pittman (2008) or the objective to “Secure [a] Friendly Manoeuvre Area” by the United States Navy (2005).

information is even available) shows sensors with similar or worse capabilities, paired with even shorter-ranged weapons.<sup>298</sup> Using the MGK-400 detection range, and presuming 16 km range ASW torpedoes were available, no less than 10 ships are needed to generate a suitable unbroken 50 km perimeter (using the formula in footnote 293). While various states operate ASW ships in some numbers (particularly China), no nation considered in this work had appropriate vessels in such quantities. Likewise, while submarines could also impose such a perimeter they too are operated in insufficient numbers. And the generation of an ASW perimeter by cooperation between otherwise inadequate inventories of ships and boats (an option, again, only practical for China) is judged unlikely as the close physical proximity of such teamwork would raise the severe risk of fratricide.

Instead, for all nations, helicopters and aircraft provide a suitable solution. These can move rapidly around the edge of the MEZ taking repeated sensor readings in different locations, thereby creating a “synthetic” constant perimeter and suitable defence zone. Hence such platforms are the only ones counted in this dissertation.

Regarding counting rules, nations with one or more MARPAT aircraft able to persistently patrol the MEZ, or two or more embarked ASW helicopters, are deemed to meet ASW MEZ needs. The call for two helicopters reflects persistence: as one will always need time for maintenance and refuelling, two are required. While calculating only airborne assets might appear an artificial limitation, it reflects the practical realities of the types of platforms able to effectively support ASW SC. Further, focussing on the relatively limited number of such platforms assists to highlight the difficulty in conducting ASW, an issue captured when assessing Preponderance (discussed below). That is, when comparing numbers of attacking submarines and defending MEZ forces, to include all defending assets applicable to such efforts, even though these operate in insufficient numbers to form a SC

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<sup>298</sup> While ships’ sonar ranges listed in the MPD are often many scores of kilometres, sources are unclear whether these represent ASuW or ASW ranges – but as these systems are normally paired with short ranged (around 10km) ASW torpedoes, it is likely the long ranges provided relate to ASuW. Regardless, the effective range in such situations is limited to that of the defensive torpedoes.

perimeter, may give the impression that the defence is heavily favoured. In reality, effective ASW remains very problematic and by focussing on the far more limited number of platforms able to enforce ASW SC a more balanced appreciation is presented. An indication of just how difficult the mission is may be illustrated by the world's last major ASW combat operations, which occurred in the 1981 Falklands war. There, British assets including 10 MSC, each with a helicopter; two aircraft carriers and four submarines were unable to destroy or prevent from making multiple attacks a single Argentine boat (Pittman, 2008, pp. 32–35).

- *Offensive Operational Suitability and Resilience Requirement 4: No less than: two embarked ASW helicopters, or one MARPAT aircraft persistently in place at a MEZ.*

#### *Amphibious Capabilities*

For amphibious operations nations of course require sufficient amphibious forces to actually conduct assaults on islands. A single AA vessel with sufficient range and seakeeping to reach a target geographic feature is the minimum considered necessary, noting nations are presumed to be able to acquire sufficient CR assets to meet their needs.

- *Offensive Operational Suitability and Resilience Requirement 1: No less than one suitable heavy amphibious vessel.*

#### *Land Forces*

As a further point, nations of course need to also have suitable forces (such as Marines) and equipment to actually conduct AA. As a review of *The Military Balance* showed all states that might conduct AA/MEZ operations had such forces, it was deemed unnecessary to include this as a formal requirement, as it is already met.

## Defensive Needs, Capability Effects, General and National Requirements and Counting Rules

Defensive needs are substantially less complex than those for SC, as they are based on the operational mission of SD. As noted in Chapter Five, SD is the condition where a nation denies its adversary free use of the sea, although this does not mean that the denying state is able to thus use the ocean for its own purposes (Tellis, 1990). Further to this, *all references to SD operations in this dissertation relate to defensive efforts by nations seeking to protect their existing territories.*

The general and national capability requirements, and metrics to be deemed operationally suitable, for SD are fairly minor. This is because the only necessary effect that must be generated is the potential to threaten the vital surface ship assets of an adversary's operations (i.e. amphibious forces or civilian ships<sup>299</sup>) by any (or all) air, surface or undersea avenues, at a time and place of the denier's choosing. In this way, SD is the opposite of SC, which requires constant protection from all avenues of danger.<sup>300</sup>

The capability requirements to achieve SD are naval and air assets that can reach an AO and conduct an ASuW attack, with a force being operationally suitable if it has so much as one platform that is able to do so. While land-based units located on islands could also be included, they are not for reasons described in the operational scenario section below. Due to these limited requirements, the only SD counting-rule restrictions are, as for ASuW MEZ operations, that assets be armed with missiles or torpedoes rather than short-ranged cannon or bombs. Illustratively, all the ASuW MEZ assets listed in Table B5 above would be suitable for such operations.

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<sup>299</sup> Recalling that seaborne amphibious forces or construction units are necessary to conquer new maritime geographic features, and militaries intended to protect civilian assets. For AA, the possible exception is a purely airborne attack, however no such effort has been conducted since the German invasion of Crete in 1941 and hence such an attempt is deemed unlikely.

<sup>300</sup> Of course, the presumption of SD is a simplification; a state could also seek to defend its possessions by maintaining its own MEZ, or attempting a decisive battle or blockade; but SD is used here as the minimum capability which a nation would need to defend itself.

Finally, in contrast to the operational suitability requirements for aggressor states, which focus on achieving a MEZ so that the attacker has at least a chance for a decisive victory, no such requirement (i.e. that the SD force must be able to protect itself) is included here. This reflects that while MEZ forces ultimately are in position to protect otherwise almost defenceless amphibious or civilian craft, SD military units are considered to have some potential for real self-defence (borne out by the data contained in the MPD) and thus able to be more sensibly put in harm's way. But this does not indicate that the defender is unconcerned about its force's potential for survival, simply that operational suitability is not determined using these criteria. In turn, the actual potential for success of an SD force (which includes considering its defensive capacities) is judged by conducting the full military power integrated assessment, with this informing, of course, the assessment of the defender's position in the balance of power and the analysis of its actions overall.

- *Defensive Capability/Operational Suitability and Resilience Requirement 1: No less than one missile-or torpedo-armed asset able to reach an AO and conduct ASuW.*

#### Consolidated Operational Needs and Capability Requirements

The above process has delivered a consolidated list of national objectives, operational needs, capability requirements, Operational Suitability and Resilience assessment criteria, and counting rules for the various nations contesting in the SCS. Specific national needs at key locations are summarised in Table B5 above and further discussed in individual country entries later in the CAR. Nations' Operational Suitability at each location can now be assessed through examining whether a state can project forces able to conduct, as required, an amphibious operation and MEZ, or SD. Likewise it is possible to measure operational Resilience: if a nation can achieve these operations, how many assets could it lose before becoming unable to do so. Assessing states' performance in these criteria is practically done by applying the capability requirement counting rules to national inventories, with these processes for individual countries conducted in Steps Two and Three. Of note,

further counting rules also apply to other criteria, such as Modernity, Asymmetry, and Preponderance. These are discussed in their respective steps.

### **Operational Scenario and Effects**

Before proceeding to consider the next steps of the military power model, it is worthwhile to briefly describe the generic type of assumed SCS operational scenario within which the five steps are considered to be applied. Such considerations are important as they implications for the operation of the model.

As discussed in Chapter Five, nations are presumed to assess their military strength in dyads based on reasonably adverse surprise attack scenarios, and focus on an initial battle. This is the approach taken in the SCS, with aggressors seeking to impose an AA/MEZ or EMEZ while comparing their strength to a defender conducting SD, and vice versa. Both attempt to judge the likelihood of success for their competing operations based on a single large battle occurring at an AO. A single large air and naval battle is considered as this provides the worst “reasonable case” that a nation might face, rather than presuming one side or the other need only withstand ad-hoc small concentrations of forces. The single large battle arises at the AO because a surprise attack provides, by its nature, little time for the defender to mount attacks ahead of the assault force reaching the feature, nor should the attacker mount early raids that signal its intent. Further, a single large battle allows both forces to maximise their strength to achieve success.

#### All Forces are Deployed and All Forces are Targets

In essence then, the military power assessments conducted by the model represent contests between MEZ and SD operations occurring at an AO. And as noted above, defending forces are considered to be seeking to destroy, via ASuW strike, the vital amphibious and civilian assets at the core of the attacker’s strength, and the attacker seeking to preserve these forces. However, this focus does not detract from the fact that, practically, any and all assets available to either side and capable

of contributing to AAW, ASuW or ASW are considered to be deployed to the AO, and to target any and all suitable adversary platforms – from vital assets to military equipment. As a result, when assessing Asymmetry and Preponderance, almost all available weapons and platforms (as targets) are counted, with some limitations discussed under the Resilience calculation notes further below.

This outcome reflects several considerations. Firstly, forces seek to maximise their strength. Therefore, any assets that can be deployed, and might make some impact on any part of the enemy force, are deployed. In doing so they at least complicate the adversary's attempts to achieve victory. Secondly, nations of course seek to attack each other's critical vulnerabilities, so that a force quickly loses its operational suitability and hence is defeated. Such weaknesses can occur anywhere, and so are targeted. For example, a MEZ force may rely on fighter aircraft for its AAW perimeter. In this case, the SD force has every incentive, in addition to its ASuW strikes, to attempt to destroy these fighters so as to render the aggressor's force unsuitable and thus cause it to withdraw. Finally, for ASuW in particular, the MEZ force of course seeks to destroy all SD ships. In turn, the defender's forces also attack all the aggressor's MEZ units, as their destruction can cause the MEZ to fail (if enough are destroyed) and also because these ships, as described above, form a ring around the amphibious and civilian ships. Hence missiles launched at the centre of the ring still have every chance of in fact homing in on the escort forces first – indeed providing such diversion is one of the roles of such a force.

#### Forces Excluded

Of note, only naval and air forces travelling to AO from mainland bases are considered for offensive or defensive needs, rather than any land, naval or air units that might be deployed onto islands. The reasons for this are varied.

The land-based units that might be relevant to offensive operations are large and long-range SAM and ASCM might be deployed onto a nearby feature held by the aggressor and used to support a MEZ operation at a nearby AO. But such weapons

are judged unlikely to be used as these would raise the risk of fratricide. That is, in a complex battle occurring at sea-level and higher at an AO, with forces potentially at close quarters or overlapping, there would be substantial risks that missiles fired might strike friendly targets.

Also, from a defensive SD perspective, unless an island is permanently hosting such land-based missile forces (or defensive artillery that could be used for coastal defence purposes) there is no reason to expect these to be present in a surprise attack situation. This is because such weapons would need to be deployed rapidly by aircraft (rather than slow transport ships) to be in place in time to affect the balance of military power in a surprise attack scenario. And such large weapons require enormous aircraft that are both rare in local inventories; unsuited to operating from most of the small SCS airstrips that existed during the study period; and at the locations where suitable airstrips were, missile units were not deployed even for training.<sup>301</sup> Hence such reinforcement are assessed as generally infeasible and of likely limited tactical use if they were attempted. Since no nation permanently deployed defensive missile or artillery forces during the time period under investigation; no such units were counted when assessing the military balance.<sup>302</sup>

Of note in the absence of such land-based defences, any units occupying islands (either on large features or small) are considered to be essentially vulnerable to destruction once their supporting air and naval forces have been driven off. This is because the defenders would be fundamentally unable to attack the amphibious forces and their MEZ escorts, while being in turn subject to their weapons. In such a scenario (which is the situation throughout the SCS during the investigation period)

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<sup>301</sup> For example, the *Bastion* truck-mounted ASCM system operated by Vietnam weighs some 40 tons and requires a large aircraft such as the Ilusyhin IL-76 to transport it. Only China held such aircraft in its inventory and only its Woody Island facility had a suitable runway to receive these. As China deployed no land-based large SAM or ASCM at Woody Island until 2016, the lack of even previous efforts to deploy such missiles indicates it is highly unlikely such forces received suitable training to enable them to contribute effectively to the island's defence (Panda, 2016).

<sup>302</sup> China did, at least temporarily, deploy artillery to Woody Island in 2015 (The Guardian, 2015). However, the very fact this was worthy of commentary indicates how rare such deployments are.



any such defenders are considered to have no impact on the success of the amphibious operation, and so are not counted as part of power assessments.

In turn, while small naval units could be based at some SCS locations, the seakeeping characteristics necessary to reach such an area directly (to enable or defend against a surprise attack) would also allow such units to travel to the AO regardless of where they had been based. The exception would be small defensive units permanently home-ported at such locations, that had reached islands by taking circuitous routes in peacetime or by being transported on larger ships, and no such forces appeared during the investigation period. Therefore, consideration of naval forces on islands does not affect military power calculations. Also, the effects of patrol forces are not considered, noting their marginal combat ability (such forces do not have torpedo or missile armament).

Finally, increasing MEZ or SD forces by locally-basing aircraft rapidly flown in to an island would be possible to effect battle outcomes. But analysis of imagery showed that during 1995–2015 no island had the appropriate hangar, maintenance, fuelling and arming facilities to make this feasible or a major contribution to balance of power calculations.

#### Considering the Circumstances of the Initial Battle at CoG and Secondary Sites

Under the 5-7-7 model, the power assessment process focuses on when the initial battle happens between aggressors and defenders. In this dissertation, such a battle is considered to occur under different circumstances for AA/MEZ (at CoG) and EMEZ scenarios (at secondary sites). This reflects that as noted in Chapter Five, nations are presumed to aim to maximise their military power across the assessment criteria to give the greatest chances of success. This leads to different implications regarding specific operational scenarios, including regarding when the initial battle is considered to occur.

For AA/MEZ situations, where a defender is protecting a CoG or other easily defensible site, it is presumed to stand and fight. This is due to the terrain being to its advantage (an issue discussed in Step Four), the value of the outpost itself and because its loss provides an opportunity for an aggressor to entrench themselves, including by deploying heavy weapons that would make any effort at recapture much more difficult. Hence the initial battle is considered to occur between the aggressor's AA/MEZ forces and defending naval and air units at the AO.

But EMEZ situations apply to less valuable and defensible features, or even areas of open ocean. And there the aggressor must hold on to the site with its naval and air forces for months, to protect new facilities as they are built and/or any civilian assets that begin to exploit the area, while awaiting the defender's blow. In such scenarios, no particular benefit accrues to the defender remaining. Instead, the defender is motivated to initially withdraw its units, wait for its adversary's forces to wane and its own strength to build, and return with a more potent armed capability and mount its own SD surprise attack. It is this situation which is considered to count as the initial battle, with the EMEZ forces still considered as the aggressors and SD forces as defenders. The effects of these assumptions regarding available forces for operations are discussed in Step Two.

#### Effects on Assessing Asymmetry, Preponderance and Resilience

States' objectives to maximise their own ratings in the military power criteria in the generic scenario described above also requires consideration of the tactical placement of forces and how this affects states' potential for victory. This is because tactical placement can impact on nations' ratings in the technical and operationally-specific military power criteria used in the model.<sup>303</sup> These outputs are, specifically, Asymmetry (which forces' weapons outrange the others), Preponderance (which force has numerical superiority or a better ratio of weapons to targets) and Resilience (which forces' operations are more critically vulnerable).

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<sup>303</sup> As opposed to general ones, such as training.

While these criteria are practically assessed in subsequent steps, the common way they are affected by the operational scenario is usefully discussed here. Of note, all three outputs are critically dependent on the numbers and, to a degree, weapons-loads of the military assets that will meet in battle. On the first issue, the overall number of assets is clearly affected by the generic operational scenario in a straightforward manner: the maximum number of available assets for each side are presumed to be concentrated at a particular AO.

However, these factors they are also potentially sensitive to the assumed tactical placement of assets in such engagements. This is because military units are able to threaten or defend a certain effectively circular area based on the effective range of their weapons and sensors.<sup>304</sup> When units are so placed that these areas overlap, it is possible for multiple units to engage targets cooperatively; increasing their ratings for Preponderance (more weapons are available to fire at targets) and Resilience (more units must be lost before the relevant SC effect is lost). When units are placed far apart, their rated Preponderance and Resilience decreases but the potential for superiority in Asymmetry increases by, for example, allowing a defender placed distantly from the heart of the MEZ to fire at an attacker before vital amphibious forces comes within the latter's weapon range.

Unfortunately, the generic operational scenario provides no guidance on how forces will be placed. This is a potentially confounding issue in the general operation of any model (let alone the considerations of a specific state) and no practical guidance is available as the likely tactical arrangements of forces are both classified and almost infinitely variable. A means to address this, however, focusses on the fundamental technical characteristics of weapons and the limitations on practical preponderance brought about by overall force structure and weapon fit-out.

That is, a force with weapons that outrange an adversary's will have an inherent asymmetry advantage regardless of any further tactical subtleties attempted by

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<sup>304</sup> Ships and submarines have effectively 360-degree weapon and sensor coverage, whereas aircraft are considered to orbit in regular patterns to cover an entire MEZ.

either party. Thus, overall Asymmetry is sensibly considered by comparing maximum effective weapon ranges rather than focussing on how this might be influenced by tactical placement. Likewise, the rated Preponderance of either force will ultimately be limited by the total number of platforms (aircraft, ships, submarines) available to a nation, and their weapon fit-outs, as further affected by range and other constraints that limit how many can reach an operational area. Again, such totals of units and weapons form a more solid basis upon which nations (and analysts) can seek to broadly assess military power, without depending on the operational nuances of tactical placement, which themselves may be countered by the tactics of an opponent. Hence, the above ways to measure Asymmetry and Preponderance form the basis of the approach used in this work.

Of course, some minimal assumptions are still necessary to help describe how the opposing forces would seek to achieve their objectives. These can be logically derived based on the operational scenario of a single large battle at an AO conducted by rational states.

As a general rule, each side should seek to inflict maximum damage on its adversary while suffering minimum losses. With Asymmetry assessed by reference to overall weapon-ranges, forces are hence assumed to be organised to maximise ratings in Preponderance and Resilience. For SD, this means forces are presumed to seek to maximise the number of missiles or torpedoes that can be concurrently launched at an invasion force, to overwhelm its defences. This results in a coordinated, brief, and large-scale attack as the best method to maximise simultaneous or near simultaneous weapon-firings. Practically, as various assets have missiles with different ranges, those attacking units armed with shorter ranged weapons must attempt to approach quite close to the centre of the MEZ, aiming to slip-past longer-ranged defensive weapons and then also having to face shorter-ranged defences. Of note, this logically buttresses the approach described above where all assets are counted as targets for Preponderance purposes. As even platforms with shorter-ranged weapons will attempt an attack, it is sensible to count them and

their armaments in the quantities of targets and weapons. Finally, SD units can plan to attack a MEZ at any (or more likely multiple) points on its perimeter.

In turn, forces defending a MEZ are firstly presumed to seek balanced coverage (i.e., an even distribution of defences in all directions) noting attacks may come from any or multiple axes. To achieve this requires maximising the number of assets contributing to SC (i.e., generating defensive AAW, ASuW and ASW perimeters of 50 km and beyond) in a balanced way. To do so means in practice means, for naval assets, deploying ships close together, near the amphibious units or civilian ships at the heart of the MEZ, should these be present, to deliver the maximum degree of overlap in AAW, ASuW and ASW weapons zones, rather than deploying with some platforms to operate distantly. Practically, ships with longer-ranged weapons would target an adversary first, with those with shorter-ranged weapons likely attacking their SD counterparts that had to approach close to the centre of the MEZ.

This type of deployment generates in the model a higher calculation of Resilience and Preponderance (based on the increased number of available overlapping weapons) but does not improve Asymmetry. Preponderance is also further improved by such tactical placement as it logically increases the chance that ASCM's target warships, which often have additional short-ranged ASCM defences, rather than critical transports or civilian ships. Hence, warships' anti-ASCM defences can all be counted towards practical preponderance, providing additional "targets" to dilute an adversary's ratio, rather than presuming some are "lost" due to being on distantly-placed vessels. Instead, a layered defence is formed, with vessels with longer-ranged weapons engaging adversaries first, with those armed with shorter-ranged missiles and torpedoes attacking units that slipped through.

Separately, again to provide balanced coverage, supporting aircraft are presumed to orbit MEZ airspace, aiming to be in position should an attack occur. These would include defensive Fighters, FGA and Bombers (equipped with ASCM) and MARPAT (also at times equipped with ASCM) supporting AAW, ASuW and ASW SC. Finally, submarines armed with long-range weapons (50+ km) are logically considered to be

placed towards the centre of the MEZ to provide balanced coverage, as are those with shorter-ranged arms but available in sufficient numbers to provide a SC perimeter. If available in lesser numbers, these are considered to be placed throughout the MEZ or even beyond it, to opportunistically intercept adversaries. These considerations too support the approach used that all assets and weapons should be counted for when assessing Preponderance.

Beyond such broad assumptions, issues of Asymmetry, Preponderance, and Resilience are considered without regard to the tactical deployment of competing forces in the generic operational scenario. Instead, they are assessed in terms of the numbers of units and/or missiles, and ranges of weapons, suitable to battle particular opponents at a MEZ, with this process described further below.

### **Step Two – Identification of Operationally Applicable Forces**

Based on the above requirements, it is now possible to discuss how nations' military inventories can be assessed to determine whether (Operational Suitability), and how robustly (Resilience), they can deliver capability effects at each AO and hence meet their operational needs.

Nations' ratings for Operational Suitability and Resilience at each AO depend, of course, on what part of their military inventories they can project to each location. The ability of these to generate the necessary capability effects and hence achieve operational needs can then be assessed. To meet this need, the second step of the model serves to identify the applicable forces at each location. This is done in a three-part process.

### **Consideration of Defence Responsibilities**

Firstly, it must be determined what fraction of a nation's overall armed forces are considered to be available, noting that defence responsibilities may prevent all units from being assigned to particular contingencies.

For the SCS, all nations barring China and the US were presumed to be able to use their entire armed forces. This reflects both that the smaller nations lacked equally or more important maritime contingencies that might draw their units away,<sup>305</sup> and also that their overall armed forces were sufficiently small as to need to operate cohesively to generate useful operational effects, particularly for offensive missions. Further, to generate a stronger test of OR in particular, small states were presumed to be willing to make such a decision to commit the bulk of their armed forces. For China and the US respectively, only the units of the SSF and the US 7th Fleet based at Yokosuka were considered. This was due, respectively, to these being the Chinese forces with geographic responsibility for the SCS and the only US units permanently close enough to the area to respond to a surprise attack scenario.

For US forces, these are considered only in relation to disputed features involving the Philippines, as it is the only claimant nation with which Washington has a defence alliance. For either an aggressor or the Philippines' assessments of military power, American involvement is factored only into those situations where Filipino troops are likely stationed (Thitu Island and Commodore Reef) and hence where any attack on them would trigger an US response under the *Mutual Defense Treaty Between the United States and the Republic of the Philippines* (1951). As America takes no position on the ownership of the disputed SCS features (Rosen, 2014), the US is considered as not involved in any Filipino efforts to conquer territory claimed by Manila. These considerations reflect the assumption in Chapter Five that nations should plan for reasonable adverse scenarios without presuming (to their benefit or detriment) that US power will be exerted everywhere.

### **Consideration of Maintenance and Training Effects on Force Totals**

Secondly, of the available forces it is then necessary to determine what proportion of these a nation could practically apply to an operational theatre. This is achieved

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<sup>305</sup> With the exception of Taiwan fearing a Chinese invasion. However, Taipei is presumed to accept that its mainland security can be assured via US forces and its own substantial coastal defence capabilities; allowing its long-range units to be free for action in the SCS.

by firstly considering the overall fraction of forces available to a state and multiplying them by two-thirds (0.66) for aggressors in AA/MEZ operations and one-third (0.33) for SD defenders. This aligns with the standard assumption discussed in Chapter Five that an attacker can muster two-thirds of its attacking force and be faced with at most one-third of a defender's. The latter represent the forces available to stand and fight to protect a valued asset before an attacker can conquer it and fortify its position.

However, in this dissertation it was determined to reverse these totals when modelling forces in EMEZ situations, with an attacker's overall forces multiplied by one-third and a defender's by two-thirds (written as a SD EMEZ situation for the latter). This decision aligns with assumption in Chapter Five that nations will seek to maximise their chances of success with respect to the military power criteria. In an EMEZ scenario, an aggressor will likely require many months to develop a feature to the point where it can host land-based defences – if it chooses to do so at all. In such scenarios, the defender has more motivation to withdraw its units if possible. It can then afford to wait, building up its own forces to two-thirds of its overall strength while those of the “new” occupier slowly draw-down to the persistently maintainable one-third. The original defender can then launch a SD strike, aiming to destroy the vital units and their escorts.

### **Consideration of Range Effects**

Thirdly, of the available forces a check is made to see which of these have the range capabilities to reach *and* loiter in the area (i.e., operate in it for a period of time) to meet mission requirements. This requires identifying which bases forces will operate from and then measuring the distances from these to each AO. The requirement to also loiter is significant as, for aircraft, it serves to substantially increase their range requirements depending on the type of mission. For MEZ patrols, the need for forces to permanently be in position requires any aircraft to have sufficient range to usefully loiter at an AO until relieved, whereas SD missions require only a trip out, a brief attack, then a return. Once necessary distances are



defined (either for SD or MEZ), a range check is done by simply comparing these with the capabilities listed for platforms in various sources. Ultimately, for either mission type, those platforms unable to travel necessary distances are set-aside, with the remainder forming the final subset of applicable forces.

### **Practical Considerations on Developing MEZ and SD Distance Requirements, and Platform Range Counting Rules**

In developing totals of military equipment in the MPD, frequently there were instances where rounding was required. This resulted from applying percentages of 0.66 or 0.33 to equipment totals. In general, standard conventions were applied (i.e., 0.4 and below was rounded down, 0.5 was rounded up) to reflect the number of assets generally expected to be available.

Regarding issues of range, distance requirements were developed, firstly, by comparing the locations of AO with the nearest naval and air bases used by responsible national forces. The closes bases were selected as, of course, the shorter the range the more platforms will be able to travel from there to the AO. Selecting such bases (of the many available to most states) aligns with the presumption that nations will seek to maximise the number of platforms they can deploy to an AO to maximise their military power.

The location of naval and air bases was determined from various publications including The International Institute of Strategic Studies' *The Military Balance*, various militaries' websites, and other specialist sources.<sup>306</sup> The distances from these to operational locations was determined using Google Earth. A comparison of these distances with the range of various platforms in national inventories was conducted using capability data principally obtained from *Janes* series of technical publications and *The Military Balance*.

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<sup>306</sup> For example, Bernard Cole's *The Great Wall at Sea* (2012) contains a range of information on Chinese naval and naval air force bases.

However, an initial complication arose in that in certain instances, nations had either various appropriate bases that they could select from in order to launch operations, or more assets than could reasonably be located at these – requiring some to be located farther away. This necessitated consideration of where platforms would actually be based and any resulting range implications. For naval forces, a review of *The Military Balance* and *Janes* showed that due, to the long ranges and comparatively limited numbers of most states’ naval assets, these considerations had little real impact on which bases are selected. In short, there were generally few enough assets that these could either all be located at the closest naval base, or if not, larger platforms such as MSC had such great range that their location at more distant bases was irrelevant.

A different situation abides with aircraft, as the objective of maximising the numbers of the most applicable combat platforms is affected by aircraft types, ranges, and airbase congestion. To resolve this satisfactorily required a process of optimisation. That is, while ideally a state might seek to deploy all its aircraft to the base closest to an operational area, in reality this can be infeasible. This is because bases do not have sufficient infrastructure (such as refuelling and maintenance facilities) to support more than a certain number of platforms.

A review of literature on a range of airbases showed most permanently host between 20 and 40 aircraft, leading to 40 being assumed as an upper limit. To develop a mix of aircraft and bases that allowed for the greatest numbers of aircraft at each AO, state’s national inventories were dispersed among their military bases with shorter-ranged aircraft populating up to 40 units at the military airfields closest to an operational area, with longer-ranged ones placed at the next farthest away.<sup>307</sup> Range calculations were then made for each aircraft type based on its respective base location.

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<sup>307</sup> For Vietnam, this process was done for two groups of air bases for different operational scenarios, as one group is closer to the Paracels while another is more suited to the Spratlys.

If an AO proved to be entirely beyond an aircraft's range even from the closest bases, either in general or for a particular scenario, then it was considered to be moved to more distant airfields and the closest base made available for aircraft that could traverse the necessary distance. Also, when different types of aircraft were available to fill these "slots", the types most relevant to the operational scenario were selected. When more short-ranged aircraft were available than could be hosted by the closest airfields, and deploying these to the next-farthest would displace aircraft that otherwise could reach an AO, these "surplus" units were considered as moved to yet more distant bases as attrition reserves.<sup>308</sup> Utilising these steps and repeated calculations, a rough optimised mix of aircraft types to airbases was determined for AO and scenarios. Through this the objective of maximising the amount of combat power is served.

#### Determining Range Requirements

With such broader structural issues addressed, it is now possible to discuss how specific national range requirements were identified. In SD missions, for aircraft, this is simply twice the straight-line distance from the nearest airbase to the AO. This is the range the aircraft must have to be able to conduct its mission: fly to the operational location, fire its weapons, and return. This distance can be compared to an aircraft's combat radius,<sup>309</sup> that is, the one-way maximum distance it can travel and still return to its airbase, to determine if it is applicable to a particular scenario. The range requirements for naval forces are twice the distance from the nearest naval base to the AO (to allow for travel there and return), of course always travelling on the ocean. An additional constraint on naval forces is that if they are under 500 tons, they must not need to travel over more than 370 km of open or

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<sup>308</sup> In practice, this only occurred for Mig-21 totals applicable to Vietnam and only affected 12 aircraft.

<sup>309</sup> Determined mainly from *Janes* unless otherwise noted in the MPD. Where multiple combat radii were listed for platforms in different configurations (such as AAW vice ASuW, or with and without external fuel tanks), the author's judgement on the most representative configuration was used. Where only range (one-way distance) was provided, this was halved to produce a combat radius.

“blue water” from the nearest landmass or feature to reach an AO. Again, such distances were determined using Google Earth.

These SD requirements are developed for each nation in the second part of the CAR and then captured, and equipment assessments made, in the MPD. A summary review of that data showed that naval forces tend to have long reach and are able to comfortably traverse SCS distances, occasionally limited by seakeeping. Hence where limiting operational distances are listed in this model, they tend to refer to the range between an AO and airbases.

Compared to SD, more complex requirements exist for MEZ operations. Basic operational MEZ distances were first calculated in the same manner as for SD. As ships float, once they reached an AO they were presumed to be able to use minimal fuel to remain in position, hence their range requirements remained the same. Aircraft however must patrol a MEZ to be useful for SC, drawing down on their fuel until they must return to their base.<sup>310</sup> Hence for SC missions, a certain portion of the aircraft’s range must be reserved for patrolling the MEZ, with this being subtracted from its overall combat radius. A minimum MEZ patrol time of 30 minutes for fighter and attack aircraft was developed based on a review of various jets, showing an average cruising speed of Mach 0.8 was common, some 1,000 km per hour. Patrolling the roughly 300 km perimeter of a 50 km MEZ<sup>311</sup> would take such an aircraft some 20 minutes, with this increased to 30 to provide an allowance for varying wind conditions and the potential for aircraft to need to divert to investigate potential contacts. Thirty minutes of flying at 1,000 km per hour results in a 500 km subtraction from aircraft ranges to develop a minimum useful MEZ combat radius. For example, an aircraft with a SD combat radius of 1,000 km has an overall range of 2,000 km in a straight line. Subtracting 500 km from this produces 1,500 km range, so a 750 km combat radius for MEZ operations. Similar calculations but using listed cruising speeds were conducted for patrol aircraft such as the P-3

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<sup>310</sup> Of the forces considered in this dissertation, only Malaysia had (minimal) capabilities for in-flight refueling. This is factored into the range assessments conducted for its aircraft.

<sup>311</sup> Reflecting the simple calculation of  $2\pi R$ , where R is, giving a circumference of 314km.

Orion and S-2 Tracker used by Taiwan. By using this method and comparing the resulting distance to an aircraft's combat radius it was possible to develop a criterion for identifying the units that would be counted in MEZ scenarios.

Finally, as a descriptive note, in the MPA most (but not all) airbase-operational area distances are calculated from a single facility when analysis showed states had sufficient nearby airfields, and aircraft suitable range, to make its use representative. For example, for Chinese jet fighters and attack aircraft, ranges are calculated from Lingshui airbase on Hainan Island as the two other main military airfields are at most 130 km north and aircrafts' ranges make this distance irrelevant.<sup>312</sup> These three bases provide sufficient capacity (120 aircraft, presuming up to 40 at each base) to host the 96 aircraft counted in China's scenarios. Similarly, distances for Taiwan are based on Gangshan airbase, the field closest to the SCS, as three other military airfields are within 40 km. These provide capacity for 160 aircraft, whereas at most 80 of the shortest-ranged Taiwanese assets (the Ching-Kuo fighter jet) depend on this location to be applicable to the main scenario of defending Pratas island. Taiwan's other jets have sufficient range that their basing farther from Gangshan has no material impact on calculations of combat power. Instances where more than one base is used are indicated in each country's MPD data, with aircraft located there having ranges calculated appropriately. To use China again as an example, South Sea Fleet H-6D/G bombers are based at Guipeng airbase hence these aircrafts' combat radii are calculated from this facility, some 550 km north of the Lingshui fighter airfield.

### **Step Three – Operational Suitability and Resilience Assessment**

The third step of the model analyses the two stand-alone military power factors of Operational Suitability and Resilience. Operational Suitability assess *whether* the

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<sup>312</sup> Illustratively, J-11B fighters operate from Hainan and have an assessed MEZ radius of 1,250km. Regardless of whether these operate from Lingshui or 130km north at Jailishi airbase, they are unable to reach Swallow Reef, 1300km south of Lingshui. In turn, operating from either base these units *can* reach the next-farthest AOs, Mischief Reef and Spratly Island, which are 1,100km from Lingshui and 1,230km from Jailishi.

forces identified in Step Two can achieve at each location the needed operational effects identified in Step One, based on meeting the minimum equipment requirements. If a force is judged suitable, Resilience then assesses how *robustly* a force meets the needs, in terms of how many assets it could lose before becoming operationally unsuitable.

For Operational Suitability, each nation’s forces at each location are assessed in terms of the operational effects they can generate, either individually or cooperatively. These of course will be mission-specific in terms of relating to SD, AA/MEZ or EMEZ. This results in overall ratings of red (operational needs not met/force unsuitable) or green (met/ force suitable) for each location and each year, further to the binary decision outlined in Chapter Five and represented again in Table B6 below as applied to the SCS.

Table B6: Operational Suitability Test

Assessment Factor	Measurement	Operational Suitability/Likelihood of Victory	Assessment Outcome
<b>Offensive/Defensive Operational Suitability:</b> Can forces rapidly and directly exert power to achieve state aims?	Review of Applicable Force Structure against needs of Amphibious Assault and MEZ, Sea Denial, Enduring MEZ.	YES: military power is higher	
		NO: military power is lower	

As the assessments in this dissertation focus on potential aggressors, defensive SD assessments were only conducted when a potential Revisionist was judged operationally suitable. When aggressor nations were operationally unsuitable no further assessment of the aggressor’s (or defender’s) military power at that location is required for that year. This is because the potential conqueror is clearly unable to achieve even its basic objectives – hence the incumbent state remains in position by default. Of note while it is notionally possible for an aggressor to be operationally suitable and a defender to not be so, this never occurred in practice as the

requirements for SD are so low. The capabilities of military equipment were derived principally from the *Janes* series of publications.

Should both forces be rated operationally suitable, their Resilience is then judged as the second assessment factor. Resilience examines whether a critical operational effect (SD, SC, or amphibious capability) is dependent on one, two or three or more assets. This is done through a simple counting of which assets provide which operational effects and comparing these to the minimum requirements identified in Step One. This then identifies how many assets a force could lose before becoming unable to meet an operational need, with this being the “resilience number”.

Where there are many needs (such as AA and the various elements of SC in AA/MEZ) then this number always represents the most fragile capability, where the lowest number of losses would jeopardise an operation – noting an adversary would be expected to deliberately target these. Also, in terms of counting rules the resilience number always reflects the minimum number of assets that would need to be *lost* for a critical effect to end, not the number of assets available overall. Resilience is rated red when there is one critical asset, orange when there are two, and green when there are three or more; further to the three-levels described in Chapter 5 and represented in [Table B7](#) below as applied to the SCS.

Table B7: Operational Resilience

Assessment Factor	Measurement	Operational Resilience/ Likelihood of Victory	Assessment Outcome
<b>Offensive/Defensive Operational Resilience:</b> Is the operation dependent on any one or two points of failure?	Review of Applicable Force Structure at Operational Area	NO: chance of success is higher	
		YES – TWO ASSETS: chance is medium.	
		YES – ONE ASSET: chance of success is lower.	

While Resilience essentially measures whether a nation's operations are so dependent on a key asset that simple maintenance issues or limited military losses might render an entire effort a failure, in practice it was found to usefully represent the increasing robustness of military forces. Hence in the MPD while three or more key assets are rated green, the actual resilience number is usually listed also. For SD missions, this number can be quite high as it relies simply on the presence of no less than one asset able to conduct ASuW attack. For SC and amphibious operations, the weakest forces for amphibious, AAW, ASW and ASuW needs provide the Resilience factor. Of course, where only a bi-dimensional SC is required, then only a two-domain Resilience assessment is needed. In practice SC situations had the weakest assessed Resilience due to needing to generate the widest range of effects.

### **Practical Notes, Counting Rules and Qualitative Implications for Measures of Operational Suitability and Resilience**

In the model, states are presumed to plan for reasonable adverse contingencies. Regarding Resilience, this generates a counting rule that where various assets provide a capability then calculations are based on the most capable assets being lost first. For example, in Step One the MEZ requirement for a 50 km AAW perimeter could be met by one or more ships with 50 km range missiles or four or more with 30–49 km range missiles.

In an illustrative scenario, to meet these needs a nation might rely on one long-range (50 km) AAW Destroyer and five Frigates with 40 km AAW capabilities. When assessing Resilience in this situation, the Destroyer is always presumed lost first. Hence the resilience number would be "3": the Destroyer and two Frigates would need to be lost to end AAW SC, as the remaining three Frigates cannot maintain a 50 km AAW zone. This is in contrast to an assessment of "5", which would be the outcome if the Destroyer was considered to be lost last: all four frigates could be lost and AAW SC maintained, only with the loss of the fifth ship would the air defence zone collapse. Similarly, from an ASW perspective, if a MEZ perimeter is provided by a Destroyer with two embarked helicopters and a Frigate with one



embarked helicopter, the resilience number is “1”. If the Destroyer is lost, so are both helicopters, and the Frigate cannot maintain an ASW perimeter with its one remaining aircraft. Finally, as the operational scenario is based around a single large battle then any aircraft or assets not at a MEZ are not counted towards Resilience.

#### Amphibious, CR and Civilian Shipping, and Light Patrol Craft Counting Rules

For true AA/MEZ scenarios, the specialised amphibious ships in nations’ inventories were considered as part of Resilience calculations. In CR situations, no such assets were counted due to the presumption, as noted previously, that states have ‘sufficient’ such resources to call on to conduct the necessary construction operations. Hence, the limiting factor becomes the ability to generate a MEZ (in particular, an EMEZ) as once such a protective shield is no longer able to be created then any CR resources are essentially open to rapid destruction. The same concern (i.e. a focus on MEZ generating assets) applies to scenarios of permanent patrolling, rather than any attempt to count the presence of likely civilian ships conducting economic exploitation. Also, due to the negligible combat impact of light patrol craft (ships or aircraft), and that ships in particular could be easily replaced, such assets are also not counted. Indeed, they do not contribute to achieving the needed MEZ effect, and it seems unlikely that they would be deployed noting the presence of the EMEZ force: their role would be redundant. Finally, CR and economic assets too would likely only be deployed in limited numbers, to minimise their exposure to risk ahead of the initial battle.

#### Aircraft MEZ Counting Rules

More broadly, an additional calculation affecting ratings of Operational Suitability and Resilience is necessary for those aircraft types identified in Step Two as being able to reach an AO and conduct a MEZ patrol. This calculation is necessary to determine the maximum number of units that could be permanently deployed in

each scenario, with this clearly affecting ratings of overall force suitability and Resilience.<sup>313</sup>

The calculation is determined by the need for the airborne presence in a MEZ to be permanently in position if it is to support true SC. This requires aircraft to be operating in a circuit, such as that as one aircraft leaves, another replaces it. Thus, the number of permanently patrolling aircraft reflects the total number of units available overall (from Step Two) subtracting those travelling to and from the AO, or engaged in refuelling and undergoing basic maintenance at an airbase. On the latter point, discussions with Defence personnel indicated a minimum feasible time of 30 minutes for jet fighters and one hour for multi-engine patrol aircraft to allow them to continuously support a MEZ.<sup>314</sup>

#### *A Circuit Model of Aircraft Availability*

A useful means to determine, then, the total number of available aircraft at a MEZ requires firstly identifying how many individual platforms are necessary for a single aircraft to permanently be in place at an AO (i.e., a single circuit). This number is referred to as the circuit-number. Then, the total quantity of aircraft available from Step Two can be divided by the circuit-number to represent the times such an activity can be conducted in parallel.<sup>315</sup> This provides the number of aircraft able to loiter at the MEZ.

This approach is illustrated in [Figure B4](#) below in a hypothetical situation where four Fighter aircraft are required to operate in a circuit to keep one on-station (i.e., the circuit-number is “four”). As the first fighter to launch, Fighter 1, lands; Fighter 2 is loitering at the AO; Fighter 3 is on the way to relieve Fighter 2; and Fighter 4 is

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<sup>313</sup> This, of course, also affects the military power criterion of Preponderance discussed below.

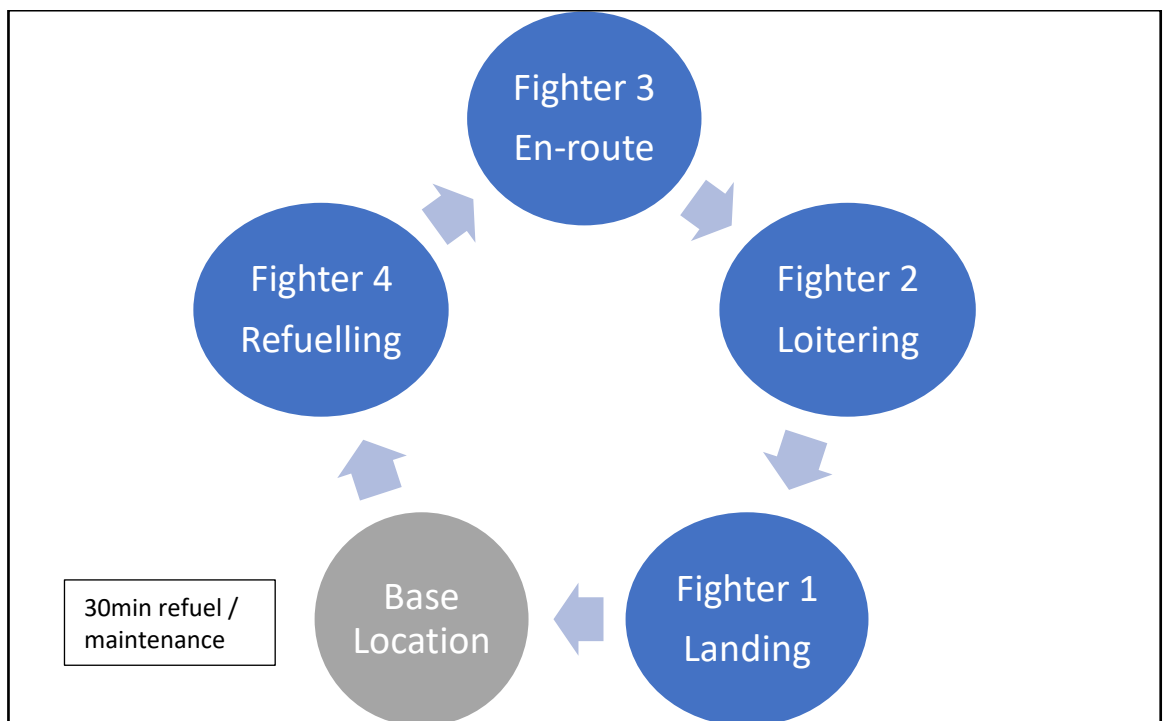
<sup>314</sup> In reality, such short times can only be sustained for a certain time before longer deep maintenance activities are required; however they are harnessed here as a useful simplification. Sufficient fuel and spares for enduring operations were also assumed.

<sup>315</sup> As a simplifying assumption, airbases were presumed to be able to support an unlimited number of circuits, noting aircraft numbers had already been apportioned to no more than 40 per airbase.

finishing refuelling and will launch soon to take over from Fighter 3. After Fighter 1 lands, in 30 minutes it will be available to recommence its role in the circuit. In this situation, if the total aircraft fleet is 20, then dividing this by the circuit-number gives the quantity of circuits that can operate in parallel i.e., five, reflecting  $20/4$ . Hence five aircraft can loiter at the MEZ at any one time.

To determine the circuit-number in each instance, a manual calculation was conducted based on range and loiter time. This loiter time drives the operation of the circuit, as discussed below.

Figure B4: MEZ Aircraft Availability Model for a Four-Aircraft Circuit



Developing the loiter time simply involved determining an aircraft type's maximum flight duration and then subtracting from this the time it would need to fly to an AO and return; the difference would be its loiter time at that location. To develop a maximum flight time in minutes, this was achieved by (for Fighter and FGA aircraft)

dividing their overall range by 800 (reflecting an average cruising speed of 800 km per hour<sup>316</sup>) then multiplying by 60 to convert to minutes.

For example, the Taiwanese F-5E fighter has a range of 2,500 km, resulting in a flight time of  $(2,500/800)*60 = 187.5$  minutes, rounded up to 190 minutes under standard conventions. From this was subtracted the round-trip return time, that is, the time taken for the aircraft to fly from its base to the AO and return. This was determined by dividing the straight-line round-trip distance by 800, then multiplying by 60. For the Macclesfield Bank AO, 950 km from Taiwan's main bases, the round-trip distance is 1,900 km, hence  $(1900/800)*60 = 150$  minutes. Taking the total time (190 minutes) and subtracting the travel time (150 minutes) provides the aircraft's loiter time, which for the F-5E at Macclesfield is 40 minutes.<sup>317</sup>

The loiter time drives the circuit through being the maximum period for which an aircraft can remain in position until it is replaced. Using the above example input into the circuit model, when the first F-5E to launch, Fighter 1, is completing its mission and landing at the 190 minute mark, at the same time Fighter 2 (which replaced it at the AO) has necessarily been flying for 40 minutes less, and has been in the air for 150 minutes. Again, at the same time, Fighter 3, has been in the air for 110 minutes, Fighter 4 has 70 minutes, and Fighter 5 for 30 minutes.

Continuing this subtractive process leads, as shown in [Figure B5](#) below, to a point where at the same time as Fighter 1 lands, the next aircraft must launch in 10 minutes to be able to maintain the circuit. As this time is less than the 30 minutes that Fighter 1 needs to be ready to takeoff, a sixth aircraft is necessary – Fighter 6. Hence the circuit number is six. Of course, if the launch time was 30 minutes or more, Fighter 1 would be ready to resume operations, and the circuit-number would be five.

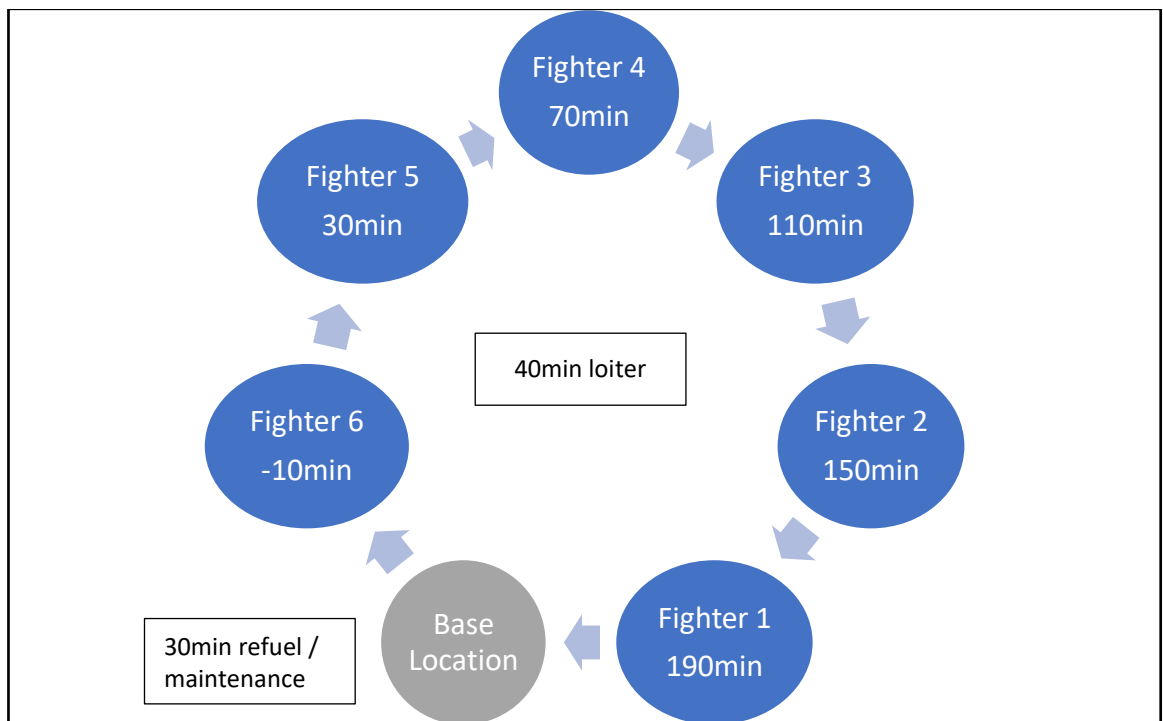
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<sup>316</sup> MARPAT and bomber flight times were calculated individually using their listed speeds in *Janes*.

<sup>317</sup> As previously discussed, 30 minutes is the minimum for a Fighter or like aircraft to conduct a full patrol of a MEZ. Of course, Step Two already removes from MEZ consideration those aircraft that cannot meet the 30 minute loiter time.

Using the circuit-number of six allows the identification of how many F-5E aircraft Taiwan could deploy to Macclesfield bank informed by the year (and hence aircraft inventory) and scenario – in this case an EMEZ, hence using 1/3 of the available total force. Dividing Taiwan’s 1995 EMEZ fighter force of 91 available aircraft by six shows that at Macclesfield bank that year, 15 F-5E could be permanently on patrol.

Figure B5: MEZ Aircraft Availability Model for F-5E Presence at Macclesfield Bank



In the overall military power model, this subtractive process was conducted manually for each platform type and operational scenario, based on likewise manually calculated loiter-times. The resulting circuit-numbers were captured as divisors that were applied to overall annual fleet totals in the MPD, thus providing annual MEZ aircraft numbers at each AO. These divisors are listed under the airbase-to-AO ranges in the appropriate tab in each MPD spreadsheet. Of course, with increasing distances and/or decreasing aircraft range, the divisor increased as more aircraft were required to be in flight to take-over patrolling from those low on fuel, or to allow sufficient maintenance time when landed.

Regarding practical counting rules, when developing these divisors loiter time totals were rounded to the nearest 5 minutes and ranges to the nearest 10 km. Further, where the divisor was greater than the total number of aircraft in a fleet, that type was judged unable to support a MEZ. So, an inventory of 3 aircraft with a divisor of 4 would indicate that it is impossible for a state to maintain a complete circuit and hence such assets cannot be counted towards rating Operational Suitability. When divisors generated results of 0.4 and below, totals were rounded down, and 0.5 and above were rounded up, to reflect average aircraft numbers on patrol at the MEZ.

#### Qualitative Impact of High Resilience Numbers

Returning to the broader topic of Resilience, as discussed above, this factor is principally assessed in the model on the availability of up to three assets: one is critical (coded red), two are coded yellow, and three or more are green. As also noted previously, it was found useful to list nation's actual resilience numbers to show their increasing robustness – and in some instances (such as SD) nations had very high numbers. While the military power model treats two nations coded as green as being notionally equally powerful from a Resilience perspective, logically if one has a much higher resilience number its potential for operational success, and hence military power is greater. For example, a nation with very high resilience number (such as 10 or more critical assets) is more likely to survive in combat and thus achieve victory in battle, and hence can be judged as having higher military power. While such subtleties are not formally captured in the model, they can be included by the analyst as part of the final qualitative summation of military power when comparing nations. Instances where such considerations effect assessments are described in the textual descriptions appended to Integrated Assessments.

#### Step Four – Comparative Forces Assessment

If both members of a dyad have forces operationally suitable to conduct needed missions at an AO, the likelihood of success in battle must be measured by how the two forces will fare against each other across the other military power outputs.

Step Four gathers the necessary information for, and then conducts assessments of, states' relative advantage at each AO across the four comparative factors of Asymmetry, Modernity, Training, and Preponderance, and also the fifth factor of terrain advantage (Geography). As noted in Chapter Five, the first four criteria are essentially relative as they have no independent value that can indicate whether a state has an advantage. For example, Asymmetry assesses which nation has longer-ranged weapons. This can only be determined by comparing the armaments of the two forces. Terrain effects can be assessed by comparing the operational objectives of each state at each location logically against whether the local geography facilitates or hinders these being achieved.

Of course, judgements of relative advantage can be assessed from the perspective of the aggressor or defender, with different outcomes. For example, if an aggressor has range superiority then it has relative advantage, while the defender would be disadvantaged. As noted previously, in this dissertation the calculation is conducted from the perspective of the aggressor.

More detailed information on the comparative and terrain assessment factors, their information requirements and counting rules is listed below. This information is captured and utilised to conduct annual assessments in the MPD.

### **Overview and Selected Practical Considerations**

This section summarises describes the five factors and how they are assessed to provide a cogent synopsis. In fact, for Modernity and Personnel, the full description of these factors is provided here, including their practical considerations, due to this being quite brief. For Asymmetry, Preponderance, and Terrain much more detailed exposition is necessary, with this addressed in the next section.

- *Asymmetry*. This factor examines if a nation's effective weapon ranges allow it to detect and attack an adversary without placing its forces at risk. To measure

this, the effective ranges of all relevant weapons at an operational location were captured and compared numerically to identify whether one side had 20% or more superiority. Such practical asymmetry may exist in one, two or all three of the MEZ domains, offering increasing relative advantage in overall Asymmetry.

- *Modernity.* This factor examines which nation has more modern forces at a particular location. This measured through a simple annual numerical comparison at each AO of the common types of modern platforms available to contending states, with the larger modern force judged superior. For example, in the air domain this is done by adding together all the modern aircraft deployed by either force at an AO and comparing the two numbers. Superior modernity may exist in one, two or all three of the MEZ domains, offering increasing relative advantage.

Practically, and as discussed in Chapter Five, there are no commonly agreed measures for assessing an asset's modernity. So, for the purposes of this dissertation, fighter and FGA aircraft of third generation or later are counted as modern.<sup>318</sup> In turn, bombers and MARPAT are counted as modern by consideration of asset age and ability to host long-range and advanced weapons (a fundamentally qualitative assessment). Modern ships and submarines are too assessed qualitatively around criteria including asset age, weapons-fit, ability to embark helicopters (for ships) and to fire ASCM (for submarines). These assessments were cross-checked against similar assessments in professional sources such as Heginbotham et al. (2015) and O'Rourke (2018). Modern and non-modern assets are identified in the MPD.

Also of note, where a nation has a capability that another does not, then by default it is taken as having a more modern fleet in that domain. This is because

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<sup>318</sup> By 2016, modern fighters and fighter-bombers are fourth generation or above, with the most modern fifth generation requiring stealth capabilities. Only a handful of in-service aircraft can be considered fifth generation (the F-22, F-35 and J-20) and none are particularly relevant to the concerns of this dissertation as they were not in service in the SCS during the period under investigation.



the force with a greater number of more modern or unique assets in an AO has more capability and flexibility, hence more advantage. For example, one nation might have a submarine in an AO while another has none. Clearly the two forces cannot have their submarine modernity compared in a like for like manner. But the first still has an advantage as the submarine can be used for any number of tasks to support its objectives (such as ASuW, surveillance, or special forces delivery) while the latter state can derive no such benefit.

- *Personnel Training/Experience.* This factor examines the level of training or deployment experience achieved by a state's armed forces, based on open-source commentary. Such qualities are presumed to be generalisable; that is, personnel deployed to an operational location are presumed to have the same level of overall quality as adjudicated for the armed force. As qualitative measure, this dissertation uses descriptions of "poor", "acceptable" and "good" based on information available describing training and deployment experience. If two forces have the same rating then neither side has a benefit, while of course if one is better, then it is judged superior.

Practically, as with Modernity, there are no agreed measures for personnel quality in terms of training and experience. Hence the approach taken was to examine, for air forces, average annual flying hours (where available) in comparison to the objective training requirements of the US Air Force, arguably the most sophisticated and effective such force in the world. For naval and air forces, training expertise was also considered through engagement in exercises with modern first-world naval forces. Deployment expertise was rated through consideration of secondary sources describing real-world deployment experiences. The details of these assessments are captured in part two of the CAR, with force ratings then transferred to the MPD to inform overall assessments.

- *Preponderance*. This factor examines which a nation has a greater weapon-to-target ratio. It is measured by comparing the number of weapons that a nation has at each operational location against the number of targets presented by its adversary, and vice versa. The nation with a 100% (i.e., double) or better ratio than its competitor has superiority, noting this can exist in one, two or all three of the MEZ domains, offering increasing relative advantage.
- *Geography/Terrain Effects*. This factor examines whether the physical geography of an area favours the attacker, the defender or neither.

When comparing adversaries, the aggressor for every above factor is rated as overall either red, orange or green. The assessment logic for each factor is shown in [Table B8](#) below, copied from Chapter Five. Of note, for the factors of Asymmetry, Modernity, and Preponderance, a sub-assessment is first done on each domain (air, surface, submarine) and then the results summed into single rating. This reflects that nations may have different ratings in each domain (for example, having more modern aircraft but older ships). The counting rules for the summation are those discussed in Chapter Five. That is: two or more domains of advantage (green) with one of neither advantage (orange) are classed as providing overall superiority. Two or more domains of disadvantage (red) with one of neither advantage (orange) is classed as providing overall inferiority to a party. All other combinations provide neither distinct advantage or disadvantage.

### **Practical Notes, Counting Rules and Qualitative Implications for Asymmetry, Preponderance and Terrain**

While specific issues relating to assessing the comparative factors are discussed below, there is an important common consideration to usefully address first. Specifically, regarding the interests of MEZ and SD forces, the critical issue from the perspective of either is whether the vital amphibious task force (AA or CR) or civilian assets at the heart of the MEZ survive to achieve their objectives of conquest or exploitation. Whether the SD forces also survive is a secondary concern.

Table B8: Comparative Force Assessment Factors

Assessment Factor	Measurement	Relative Advantage/ Likelihood of victory	Assessment Outcome
<b>Asymmetry:</b> Do own forces have a clear asymmetric advantage in all domains?	Review of Force Structure and Technical Capacity; Weapons and Sensor Ranges	Advantage: chance of success is higher	
		Neither Advantaged: chance is uncertain	
		Disadvantage: chance of success is lower	
<b>Modernity:</b> Do own forces have more modern assets in all domains?	Review of Force Structure age in comparison to adversary.	Advantage: all assets are more modern, chance of success is higher	
		Neither Advantaged: some assets are more modern, chance is uncertain	
		Disadvantage: all adversary assets are more modern, chance of success is lower.	
<b>Personnel:</b> Are own forces better trained and have more experience in the types of operations they are now conducting than the adversary?	Review of Personnel Training and Experience.	Advantage: chance of success is higher	
		Neither Advantaged: chance is uncertain	
		Disadvantage : chance of success is lower	
<b>Offensive Preponderance:</b> Are own forces at 200% or greater weapon to target ratio across all domains?	Review of numerical Preponderance of Force Structures	Advantage: preponderance exists across all domains, chance of success is higher.	
		Neither Advantaged: preponderance exists across some domains, chance is uncertain.	
		Disadvantage: no preponderance, chance of success is lower.	
<b>Geography:</b> Does the geography of the area favour the operations sought to be conducted?	Review of Geography/Area of Operations.	Advantage: chance of success is higher	
		Neither Advantaged: chance is uncertain	
		Disadvantage: chance of success is lower	

Hence for either state, measuring military power relates centrally to the potential for the ruin of the MEZ force, in terms of its ability to achieve its objectives. While this refers principally to the amphibious forces and civilian economic units, their likelihood of survival in turn depends on the contest between their MEZ escorts and SD forces, with this forming the core of the assessment. The implications of this as applied to the AAW, ASuW and ASW domains are discussed below.

### Asymmetry

The principal concern for both SD and MEZ defender forces is the potential for the former's assets to be destroyed before they can strike the amphibious task force or naval patrol forces of the latter. As such, range disparities are generally considered in terms of which MEZ systems can outrange SD forces' ASuW weapons.

Logically, noting the three domains from which attacks can come, this leads to Asymmetry being assessed in terms of whether MEZ defence systems can outrange missiles launched from aircraft (AAW), missiles launched from ships (ASuW), or torpedoes or missiles fired from submarines (ASW). Where any single system at a MEZ has overall range superiority against relevant SD weapons (or vice versa), a practical asymmetry exists. As noted in Chapter Five and above, such asymmetry is determined by comparing the longest ranged individual weapons of both sides, identified through considering all available assets at an AO and presuming these platforms are equipped with the longest ranged weapons suitable for them. This approach reflects that a state, when assessing military power, must consider that it may be exclusively attacked its enemy's longest ranged weapons, or that they would be used first to destroy or degrade its defences before shorter-ranged weapons are employed.<sup>319</sup> As discussed above, in terms of the extent of range

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<sup>319</sup> To illustrate this concept, consider a scenario where a single Chinese H-6G bomber, with four 250km range YJ-12 missiles, and a JH-7A attack aircraft, armed with four 83km range YJ-83K missiles, attack a Taiwanese amphibious task force protected by two *Keelung* Destroyers, each armed with 64 SM2-MR missiles of 166km range. In this scenario, the Chinese force has practical asymmetry as the H-6G may attack without fear of retribution; after which the JH-7A might engage the remaining amphibious forces should the defenders be destroyed.

superiority required to gain advantage, disparities of 20% or more are considered to provide asymmetry, otherwise, neither has a benefit.

As a result of this approach practical and overall Asymmetry is generally assessed in a fundamentally relative manner. There is no set minimum or maximum range for a force to have superiority, instead this advantage must be determined in relation to the specific capabilities of the two contesting forces.

However, a different set of counting rules exists for ASW due to the peculiarities of hunting submarines. Asymmetry is instead based around comparing submarines' weapons to the 50 km ASW perimeter to see if they provide a 20% range advantage, disadvantage, or neither. This reflects that while embarked ASW helicopter and aircraft can patrol beyond 50 km this is not classed as providing an asymmetrical advantage for two reasons. Firstly, such broad-area ASW is unlikely to be engaged in as it becomes increasingly uneconomical, as submarines are inherently difficult to detect and the area to find them in merely becomes larger. Further, as noted before, submarines' most potent weapons are torpedoes with ranges generally less than 40 km. Hence the focus of the defender is to keep submarines outside 50 km, where they are less effective, as beyond this there are diminishing returns.

Also, when assessing any asymmetry and its battlefield impact, it is important to only compare those defensive systems that can actually target adversary platforms and will be present in the AO. Hence SAM ranges can be compared to those of aircraft-launched ASCM but not of submarine's torpedoes. And practical asymmetry brings little benefit when there are no opposing platforms to be targeted. For example, while one nation's ASCM may outrange those on another state, if the latter never deploys its vessels to an AO (due to these, for instance, lacking the range to reach there) then the asymmetry produces little practical impact.

Finally, when determining practical asymmetry, it is of course weapons' effective ranges that are considered: whichever is the shorter range of an individual asset's

weapons and corresponding sensors. Considering sensors, the counting rule used for radar data was that where both detection and tracking ranges were provided, tracking ranges are used; where not, the listed range is used. Further, where assets (typically ships) held multiple applicable sensor systems (such as various AAW radars) then the most modern system was selected; where systems were of similar age, the longest ranged one was used. Also, where assets had weapons with short air-to-air (less than 15 km) or air-to-surface (less than 25 km) ranges, then sensor distances were treated as irrelevant as such systems are classed as being Within Visual Range weapons. That is, they can be targeted by pilots' eyesight. Also, in terms of determining which weapon systems were equipped on platforms, aside from overt descriptions in *Janes*, the counting rule was used that where a weapon and asset were both in national inventories and could be used together to achieve a capability effect, then this was presumed to occur.<sup>320</sup>

#### *Counting Rules for Anti-Air Warfare Asymmetry*

Asymmetry in AAW can be considered through two different steps, reflecting MEZ forces attempting to defending themselves by seeking to destroy enemy SD jets before they can launch their ASCM. This can be achieved through either long-range SAM or fighter aircraft.

Should a force have SAM asymmetry (i.e., SAM range is 20% greater than air launched ASCM range), it has AAW asymmetry. Of note, due to the ranges of modern ASCM, only long-range SAM (able to reach 100km or further) are considered. In this dissertation, this limits relevant systems to the HQ-9 and certain SM1- and SM2-series missiles discussed in the MPD.

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<sup>320</sup> For example, *Janes* notes Malaysia's Hawk Mk 208 aircraft are cleared to carry AGM-65 missiles able to target ships. These missiles are in the Malaysian inventory although not typically noted as being employed by its Hawks. In the MPD, the Mk 208 is, regardless, considered to be equipped with the AGM-65 to enable its use for ASuW missions.

For any fighter and AAM-equipped FGA aircraft escorting the MEZ, these platforms are presumed to be able to detect and as a first priority move to attack the SD aircraft before they have the chance to launch their ASCM. Hence the relevant metric becomes which forces' AAM have the longer range to identify which can destroy the other first. Should a nation fail both types of measure, it fails to have AAW range superiority.

### *Qualitative Aspects*

Two qualitative AAW asymmetry factors can also affect power calculations. Firstly, SAM asymmetry should provide greater confidence of advantage. This is due to this capability being persistently available compared to MEZ aircraft that may be orbiting elsewhere when SD forces arrive. While this difference is not specifically captured in the model, it can be usefully incorporated when making detailed qualitative descriptions of military power. There, it can help to justify decisions such as placing a state at a particular level of power (such as approximate parity rather than advantaged parity) when it was on the borderline between these two as a result of the main military power factors.

Secondly, in some instances the MEZ force's orbiting aircraft, either FGA, MARPAT or bombers, will have ASuW weapon ranges providing asymmetric superiority over a SD force's own surface vessels' SAM air defences, potentially allowing the SD force to be destroyed before it can launch its attack. While this notionally provides an advantage, this particular scenario is less relevant to a MEZ or SD force's calculations. This is because neither can be sure that MEZ aircraft will be positioned to fire such weapons before the SD force is able to attack, noting this may well come from many directions simultaneously. And in such a scenario, while even poorly placed MEZ-force FGA might be able to move fast enough to interdict SD surface vessels, such FGA (and any fighters) are presumed to firstly be seeking to respond to enemy SD aircraft. In turn, slower bombers and MARPAT may simply be on the opposite side of the overall MEZ perimeter and have much more limited opportunities to strike. Hence the cautious Revisionist does not depend on such

uncertain advantages. Nevertheless, when such situations do occur (i.e., MEZ aircraft ASuW weapons have asymmetry over SD force's SAM) then they may be considered in the qualitative descriptions of military power.

*Counting Rules for Anti-Surface Warfare Asymmetry Considering Ship launched Anti-Surface Weapons*

To determine ship launched ASuW asymmetry, the range of such armaments that would be launched by either side, seeking to destroy the other's ships, is compared. The force with superior range has asymmetry. Air launched weapons are considered under AAW asymmetry, with torpedoes discussed under ASW.

*Counting Rules for Anti-Submarine Warfare Asymmetry Considering Submarine Torpedoes and Missiles*

To determine ASW asymmetry, the maximum range of submarine weapons deployed in an area is compared to the 50 km ASW perimeter. Weapons with a 20% shorter reach (40 km) or less are considered asymmetrically inferior, a 20–60 km range as equivalent, and a 60 km range or greater having superior asymmetry.

Preponderance

Preponderance is calculated by comparing ratios of weapons to targets. For both members of a dyad, the number of AAW, ASuW and ASW weapons they can fire is calculated, as is the number of AAW, ASuW and ASW targets that they can offer. The number of one side's weapons is divided by the number of the other's targets, and vice versa, to give a total of weapons-per-target for each competitor. The two sides' totals are then compared. As noted in Chapter Five, should one side possess double (100%) the weapon to target ratio of the other it is judged to have superior Preponderance. Weapon fit-outs were derived principally from the *Janes* series of publications unless otherwise stated. From an aggressor's perspective, as with Asymmetry, the key issues affecting its assessed Preponderance are whether it has



superiority in the three avenues by which its MEZ can be threatened: from air-launched weapons, ASCM from ships, or ASCM or torpedoes from submarines. Each requires specific counting rules, discussed individually below. But before doing so two further practical points bear considering.

Regarding numbers of weapons and targets to count, the calculation of numerical superiority depends on whether there are suitable targets for weapons to engage. While one state may have vastly more ASCM than another, if its competitor never deploys vessels to an AO (instead relying on aircraft to defend its position) then the first nation's practical ASCM preponderance is largely moot.

Also, from the perspective of both SD and MEZ forces the key issue is whether the attacking MEZ force can withstand the defender's SD assault, as it must do so to succeed. Practically, this affects presumed weapon fit-outs for SD and SC missions when vessels have multi-purpose launchers able to house varying numbers of SAM and ASCM. In short, SD forces are presumed to favour ASCM while MEZ forces favour defensive weapons. Such nuances are captured in the MPD.

#### *Counting Rules for Anti-Air Warfare Preponderance*

For the MEZ force, when comparing weapons to targets the total number of MEZ long-range SAM and AAM to incoming SD aircraft (Fighters, FGA, bombers and MARPAT) is considered. For the SD force, its AAM and, in some instances, long range SAM totals are compared to numbers of the same types of defending aircraft (Fighters, FGA, bombers and MARPAT). Of note, SD long range SAM are included for those rare occasions when SAM ranges exceed those of a ship's ASCM. In such situations, when a vessel seeks to bring the MEZ task force within range of its anti-ship missiles, its SAM by default can also be used. Practically, this situation occurs only with certain Taiwanese and American ships.

For naval forces, in assessing SAM fit-outs, dedicated launchers are presumed to be full. Multi-purpose launchers are equipped with either SAM (for MEZ missions) or ASCM (for SD missions).<sup>321</sup>

Certain assumptions are also necessary to assess AAM payloads, which are carried by fighters (AAM only) and FGA (AAM and ASCM). While aircraft can carry varying quantities of such weapons, standard load-outs were available (and used) for almost all fighters and FGA from the *Janes* publications. For FGA, where different standard loads were listed (such as all-AAM, all-ASCM or mixed), they were presumed to carry a mixed load with the aim of being a credible strike force able to also support self-protection. In those few instances where a standard load was not listed, a review of available imagery was conducted to determine a representative weapons load. Descriptions of weapon loads and any specialised basis for them are listed in the MPD.

#### *Counting Rules for Anti-Surface Warfare Preponderance Involving Long-Range (50+ km) Missiles*

Any MEZ force must consider the potential for its own ASuW weapons (ASCM and torpedoes) to overwhelm a defending SD fleet and vice versa. This can be judged by comparing the number of targets that the MEZ force will present compared to the number of long-range weapons that the SD force will be able to launch against it (from aircraft, ships, and submarines) and vice versa. The only weapons not counted when developing these ratios are those of SD submarines equipped with either purely torpedo armament or ASCM with a range of less than 50 km. This is because such submarines will have to attempt to pass the MEZ ASW perimeter to be effective, hence their weapon totals are instead counted under ASW preponderance, discussed in the next section.

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<sup>321</sup> This relates effectively only to some Chinese vessels as while certain American ships also have multi-purpose launchers, these can be equipped with either SAM, ASW or land-attack missiles but not ASCM. As only SAM are relevant to this scenario, for US ships a SAM only load is assumed.

Regarding long-range missile weapons, specific counting rules for developing target numbers are:

- *Interceptor Missiles and CIWS*. Many ships often carry anti-ASCM weapons in the form of SAM able to serve as interceptors and specialised defensive cannon (CIWS). Such systems should be included to provide a more operationally relevant assessment. This is particularly so for MEZ defence as escorts are presumed to be placed close to transports to deliberately draw-off ASCM and destroy them with such defences.

From a practical perspective, such weapons can be considered as providing additional “targets”, as they will “consume” incoming missiles; of course, they will have no effect on torpedoes. Regarding interceptors, a review of various missiles in Janes showed that while many suggested high probabilities of a defensive “kill” with each weapon, none promised an absolute certainty of destroying an incoming ASCM.<sup>322</sup> Hence a cautious Revisionist is presumed to allocate no less than two interceptors for each incoming ASCM. So, every two interceptors are classed as one additional target. For CIWS, each forms a “last ditch” defence in the final few seconds of an attack. Each CIWS on a vessel is considered as consuming at least one ASCM, thereby providing an additional target.<sup>323</sup>

- *Example*. A vessel equipped with 10 interceptors and one CIWS would be classed as seven targets from an opponent’s perspective: five from the interceptors, one from the CIWS, and one being the vessel itself.

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<sup>322</sup> Illustratively, the SA-N-7B is claimed, for a two-missile volley, to have a 0.43–0.86 chance of destroying a missile target (Janes, Weapons: Naval, 2018).

<sup>323</sup> Extensive research provided no official figures on the effectiveness of even individual CIWS types, let alone across the various versions in service worldwide. To justify the widespread presence of such systems, representing a substantial investment, it was deemed prudent to presume that nations expect CIWS to be capable of consuming at least one ASCM. Such a cautious assessment also aligns with the precautionary approach nations are presumed to use when assessing military power.

- *Relevant Systems.* The types of systems able to perform these roles, and their presence and quantities on platforms, are based on descriptions in the *Janes* series of publications. Missiles able to serve as interceptors are identified in the tabulated data in the MPD, but in summary are the *Aspide*, HQ-7, HQ-9, HQ-10, HQ-16, SA-N-7B, *Seawolf*, 9M311, *Sea Sparrow*, *Evolved Sea Sparrow Missile* (ESSM) and SM1-series and SM2-series interceptors and various CIWS such as the *Phalanx* and Type 730A and Type 1130 units.
  
- *Payloads.* Dedicated SAM launchers are presumed to be carry their full payload. Where vessels have multi-purpose launchers, the assumed missile loads are that if vessels are engaged in SD efforts these will have ASCM (aiming to destroy a MEZ force) or if in a SC role then will have SAM. These concerns relate principally to Chinese vessels.<sup>324</sup> Actual missile numbers are captured in the MPD.
  
- *Other Defences.* While vessels also have other forms of self-defence such jamming or decoys to deceive ASCM, such systems are not counted as their efficacy is extremely difficult to measure, for the researcher or state. Thus, their inclusion is less conceptually relevant. This reflects both that such measures offer less certainty of defeating an ASCM, compared to its physical destruction, and that even a successful deception effort may be foiled as some missiles have the potential to return and re-attack missed targets, or shift to other vessels.

Specific counting rules for weapons are:

- *Aircraft and Ship Payloads.* As with AAM, aircraft ASCM loads are based almost entirely on standard weapon fits available in *Janes* or, when this is unavailable, a review of available imagery to determine standard weapon fits. Descriptions of

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<sup>324</sup> While it is also possible for the numbers of defensive interceptors equipping US destroyers to vary, such totals are of less relevance to aggressors as these effect the potential of an American force to defend itself rather than improving its ability to destroy an invading force.

ASCM loads and the basis for them are listed in the MPD. Ships' dedicated ASCM launchers are presumed to be full. This supports a cautious Revisionist assessment of the balance of power. Where vessels have multi-purpose launchers, assumptions on missile loads are as previously discussed: SD forces will equip ASCM, MEZ forces will equip SAM.

- *SD and MEZ Submarine Force Weapons.* Where SD and MEZ submarines can carry long-range weapons (50+ km) they are presumed to do so<sup>325</sup> and be able to fire their *entire weapons magazine* including reloads. This reflects that for SD boats operating beyond the ASW perimeter, these are likely to have time to move, reload, and fire again before being found by ASW forces. In turn MEZ submarines will simply have the opportunity to target a broad swath of incoming attackers as they enter and exit their weapons' range. For SD submarines with shorter-ranged ASCM and torpedoes, these units do not have their weapons counted, with these instead addressed under ASW, below, as they will need to penetrate a defensive perimeter before firing. For MEZ boats with short-ranged torpedoes and ASCM, their weapons are counted but only for their *initial load* in torpedo tubes. This is because due to their short weapon range, submarines' low speed, and the short duration of any expected attack, they are presumed to only have the chance to fire their ready-service weapons. Such a presumption also reflects an application of the principle nations will plan for reasonable adverse circumstances. So, a MEZ force might sensibly expect (and an attacking SD force reasonably fear) that the MEZ force's short-range weapon armed submarines will intercept<sup>326</sup> the attacking SD force, but it would appear overly optimistic to suggest such vessels would have the good fortune to be able to expend their entire magazines.

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<sup>325</sup> That is, where a submarine can be armed with long-range ASCM or torpedoes, a missile load is presumed due to the longer range of such weapons increasing the potential to engage targets.

<sup>326</sup> Either by being available in sufficient numbers to be enforcing SC, or in lesser quantities seeking opportunity targets in the MEZ and beyond.

Specific rules affecting for ratios affecting assessments of Preponderance are:

- *Total Target and Weapon Counts.* The targets for a SD force's weapons are the MEZ escort ships plus transports, interceptors and CIWS. This is compared to the total number of ASUW weapons able to be fired by the SD force, with the exception of submarine weapons with less than 50 km range. For the MEZ force, the total target count is the attacking SD vessels and their interceptors and CIWS, against the total number of all ASCM and torpedoes, of any range, able to be fired by all MEZ assets (with short-ranged sub-launched weapons counting only the initial load of torpedo tubes, while long-range weapons count entire magazines).
  - For situations where an EMEZ is required to protect civilian assets (i.e., CR reclaiming land, ships engaged in economic exploitation) and light patrol forces, the state is presumed to have sufficient civilian and patrol resources to meet its needs. These civilian and patrol units are not included in the target totals as, should all the potential military escorts be destroyed or unavailable, such vessels would be essentially entirely vulnerable. Further, the numbers of such craft are likely to be limited ahead of the initial battle in any case, to minimise the assets exposed to danger.
- *Summing ASCM and Torpedo ratios.* Developing a total of weapons-per-target involves dividing the total number of weapons by the total number of targets. As torpedoes and ASCM can both target ships, where necessary the calculation is conducted twice. For example, 20 torpedoes targeting 10 ships provides a ratio of 2:1; 30 ASCM targeting the same 10 ships provides a ratio of 3:1; hence the summary total is 5:1. If the same 10 vessels could each launch 10 interceptors, making for 100 missiles, this would generate 50 additional ASCM targets. Hence 30 ASCM would face 60 targets, providing a ratio of 0.5. This added to the torpedo total provides a summary total of 2.5:1.

### *Qualitative Aspects*

While the above points cover the brunt of assessments of Preponderance, two other issues that can affect the power placement of states can be considered when making detailed qualitative descriptions. Firstly, if both states have weapon-to-target ratios of more than one, then there exists the real chance both may destroy the other. For example, a MEZ force with a 10:1 ratio is clearly superior against a SD force with a 5:1 ratio; however, if the latter force can fire its weapons the MEZ units remain at grave risk of being overwhelmed. And it is the MEZ force that must survive to successfully conduct the assault, not the SD force.

Secondly, if one force can generate sufficient targets (with vessels, interceptors and CIWS) to reduce its adversary's missile-to-target ratio to less than one, then there is the real chance that the force may survive even if the adversary fires all its weapons, enabling victory regardless of such an assault. The potential for this is heightened if interceptor-generated targets exceed the number of attacking ASCM, as then an attack may be blunted without even reaching close to the ships themselves. Of course, such an outcome is impossible to measure with certainty as a defender may not have time to launch all its interceptors, and those that are launched will not always be successful, and those that are successful may not all have the range to protect the entire MEZ. But even so, in such situations these considerations may place a state on one side or another of a power threshold.

### *Counting Rules for Anti-Submarine Warfare Preponderance*

When assessing practical ASW preponderance, the total number of SD submarines (as targets) is compared to the number of ASW helicopters or MARPAT assets (as weapons) actually enforcing persistent SC. The force with the greater number by 100% or more is considered preponderant.

This approach reflects that the key concern of ASW is to keep submarines at a distance, while the focus of the submarine is to penetrate the barrier. If the

submarine can do so, it will have a strong chance of thwarting an invasion with nearly unstoppable torpedoes, hence its actual weapons load is largely irrelevant. As a counting rule then, each submarine is tallied as one target.

Regarding counting rules for ASW assets, each active helicopter and MARPAT can also be considered as one weapon regardless of the number of ASW torpedoes they can actually carry.<sup>327</sup> This is based around the key difficulty in hunting submarines, as discussed by Pittman (2008), being finding the boat rather than having multiple weapons with which to attack it.<sup>328</sup> This is due to the previously discussed short ranges at which submarines can be detected. Hence once they are, ASW weapons are by default dropped “right on top of” targets, making escape unlikely – and even a single weapon can cripple a submarine. On a practical note, ASW helicopters and MARPAT are presumed to have sufficient weapons at their embarking ships or airfields that they can re-arm to attack as many submarines as they may face. Regarding *how many* submarines to count as potential targets when assessing chances for operational success, all SD boats (armed with short- or long-range weapons) are considered. This reflects aggressors, when assessing their potential for operational success, must be wary that any such asset might attempt to pierce the perimeter for an unstoppable torpedo attack.

In terms of numbers of defensive assets, the quantity of platforms actively attempting to enforce an ASW perimeter (rather than merely being available) is used. Numbers of helicopters are determined by first examining the total available, determined by whichever is the lesser tally: available helicopters or positions on ships that can embark them (noting some vessels can support two aircraft). Then, this total is halved to reflect that any one helicopter must have time for maintenance and refuelling; hence two are required to generate one available for

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<sup>327</sup> Because of this, the numbers of weapons carried by such assets is not captured in the individual equipment entries in the MPD, an issue further noted in that document.

<sup>328</sup> Further, discussions with military personnel indicated that in practice helicopters frequently only carry one torpedo as, while they may notionally carry more, in practice this is rare in order to minimise their weight (and hence fuel use) and thus maximise time on patrol. This again reflects that the more critical issue in ASW is assets’ availability on patrol to *find* the submarine, rather than maximising weapons load to attack a boat *once* it has been discovered.



persistent defence. For situations where there is only one helicopter, this is rounded down to zero; for three or more, halved totals of 0.4 and below are rounded down, and 0.5 and above rounded up, to reflect average patrols. Of note, all ASW helicopters were presumed equally capable. Numbers of MARPAT are determined by applying the divisors discussed in Step Three to national inventories.

Of note, the above process generates low levels of MEZ assets, making achieving practical preponderance difficult. However, this is also assessed to be more reflective of the great difficulties involved in ASW, where even large numbers of assets can operate with no certainty of effectiveness.

#### Terrain Effects in the South China Sea

Finally, it is worthwhile to briefly discuss the relevant terrain effects of the SCS affecting such offensive and defensive activities. These relate to the common geographic features of the region that impact on all nations in a broadly common fashion, rather than the effects of a geographic distance from an AO, that will vary for each state.

The most salient terrain effects of the SCS stem from its obviously maritime nature, which overall serves to enhance the prospects for incumbent defensive forces. These effects are, firstly, the stopping power of water (Mearsheimer, 2014). This creates a moat around each island or outpost, hampering the direct application of land power and requiring instead specialised and vulnerable amphibious forces. Further, the nature of the SCS as being full of submerged or barely visible geographic features increases the risks of vessels running aground, a danger clearly not faced by forces already incumbent on islands and outposts. In this way, the SCS bares the hallmarks of the types of restricted waters that are dangerous to shipping (Peltier & Percy, 1966, pp. 56–57). Finally, the sea provides no place for surface forces to hide once within the sensor range of their adversaries. Hence, particularly for amphibious assaults, there is little chance of surprise and multiple opportunities for defenders to fire upon attackers (Shlapak et al., 2009, pp. 101–102).

Further to these points, in situations where there is an occupied geographical feature (i.e., for an aggressor an AA/MEZ scenario) then the terrain is assessed to favour the defence. If there is no incumbent occupying physical ground, such as in EMEZ situations, the geography of the SCS is assessed to provide equal benefit or harm to the involved parties, such as by risking ships running aground.

### **Step Five – Integrated Military Power Net Assessment**

This step conducts the final individual summation and then comparative integrated assessment for every claimant's relative military power at every location for every year under consideration. The actual means of summary assessment are those discussed in Chapter Five and discussed in the introduction to this CAR, with salient points briefly repeated here and with the actual assessment conducted in the MPD.

As will be recalled, focussing on aggressor nations, their stand-alone and comparative assessment factor ratings are summarised into single lines to examine whether, and to what degree, a nation has more advantaged (green) outcomes than its adversary at each location. This produces an Offensive Action Summary, shown in [Table B1](#) above. Based on this, a qualitative overall judgement is reached represented by an Integrated Assessment that rates the aggressor's chances as ranging from Clearly Inferior/Victory Unlikely to Clearly Superior/Victory Likely. This is shown in [Table B2](#) above.

As nations are presumed to assess balances of power equally effectively, this in turn also provides the defender's rating, with this simply being the reverse. That is, if a potential Revisionist is assessed to be Clearly Superior in military power then the defender is Clearly Inferior, or if it has Advantaged Parity the defender has Disadvantaged Parity, or if there is Rough Parity then both share this rating. Each Integrated Assessment is supported by a detailed description to capture any qualitative factors that, in the analyst's best judgement, affected the outcome beyond the basic data as represented in the Action Summary.

Of note in areas such as the SCS, multiple nations may contest the same piece territory that is only controlled by one nation at any one time. In such situations, for every year of observation at a particular location every aggressor will have one rating of its position in the military balance. But in turn a defender will have multiple ratings depending on the number of states that threaten it. For example, only Malaysia is assessed as seeking to conquer Vietnam's possessions on Barque Canada Reef, hence it receives a yearly single rating for offence while Vietnam receives the opposite for defence. In turn, China, Taiwan and Vietnam are all assessed as seeking to conquer Malaysia's key facilities located on Swallow Reef. Hence while each aggressor nation receives a single annual rating for its likelihood of a successful attack, Malaysia receives three assessments per annum (the reverse of each aggressor) reflecting its potential to defeat each particular opponent. Malaysia's potential for success with each nation should, according to Realism, be reflected in its different behaviour towards each state

### **Realist Behavioural Prediction Assessment**

Finally, the Integrated Assessment is used in turn to generate broad predicted behaviours under DR(GS), DR(GLS), OR and PTT, using [Table B3](#) as copied from Chapter Five. This is conducted in the MPD, with the behavioural prediction tables collocated with the Action Summaries and Integrated Assessments to support the most cogent presentation of the information.

Using the behavioural prediction table simply requires correlating a state's power position (from the five categories across the top row) with the appropriate cells directly below. In the MPD, for ease of reference this is shown by highlighting the relevant cells in blue, as shown below in [Table B9](#) for an entry regarding China where it was assessed to be in a position of Disadvantaged Parity. Here, the relevant OR, DR and DR(GLS) cells are highlighted. Of note, as DR(GLS) behaviour is expected to be broadly similar regardless of the balance of power, this cell will always be highlighted unless a nation is judged clearly inferior – in which case its behaviour should match DR(GLS) activity in any case.

Table B9: Illustrative Use of Realist Behavioural Prediction Table

Power Inferiority	Disadv'd Parity	Rough Parity	Advant'd Parity	Power Superiority	
<p><b>Irrational State:</b> Initiate and respond with distinctive coercive actions.</p> <p><b>OR/DR State:</b> Focus on Cooperative resolution.</p> <p><b>OR/DR State:</b> Defend in face of military attack.</p>	<p><b>OR(PTT):</b> Focus on initiating and responding with escalating distinctive coercive <u>(para)militarised</u> strategies, including <b>major conquest</b>.</p> <p><b>OR(BOP):</b> Focus on initiating and responding with escalating distinctive coercive <u>non-(para)militarised</u> strategies.</p>			<p><b>OR(PTT):</b> Focus on initiating and responding with escalating distinctive coercive <u>non-(para)militarised</u> strategies.</p> <p><b>OR(BOP):</b> Focus on initiating and responding with escalating distinctive coercive <u>(para)militarised</u> strategies, including <b>major conquest</b>.</p>	
	<p><b>DR(GS)BOP:</b> Focus on initiating, and responding in kind to, normal coercive or cooperative strategies. Will use strongly mixed strategies. Will respond in kind to distinctive coercion in defence; but show restraint in offence.</p> <p><b>DR(GS)PTT:</b> As for DR(GS)PTT at power superiority, but may initiate and respond with escalating distinctive coercive strategies, including <b>minor conquest</b>, in offence should normal strategies fail.</p>			<p><b>DR(GS)BOP:</b> Same as for DR(GS)BOP at power parity, but may initiate and respond with escalating distinctive coercive strategies, including <b>minor conquest</b>, in offence should normal strategies fail.</p> <p><b>DR(GS)PTT:</b> Focus on initiating, and responding in kind to, normal coercive or cooperative strategies. Will use strongly mixed strategies. Will respond in kind to distinctive coercion in defence; but show restraint in offence.</p>	
	<p><b>DR(GLS):</b> Focus on initiating and escalating cooperative strategies, including to distinctive levels, and show restraint in response to coercion.</p>				
	<p><b>OR/DR State:</b> Focus on general control-enhancing behaviours in occupied territories.</p>				

As with the Integrated Assessments, predicted behaviours are developed for each nation at each location firstly from the perspective of a potential aggressor. Then the reverse rating is assigned to the position of the defender, and appropriate predictions developed. Of course, as a defender at any location will be faced with multiple potential aggressors, then it may well have a different predicted behaviour with each based on the theory under consideration and the specific dyadic balance.

## Section II: Country-Specific Assessment Information

With the broad considerations affecting the employment of the model in the SCS described above, it is now possible to apply it to the individual countries under investigation. This is done below, drawing principally from *The Military Balance*, *SIPRI*, and the *Janes* series of publications across 1995–2015, to produce a range of necessary data that are populated into the MPD to conduct the detailed power analysis. This section of the CAR also provides a useful location to record certain selected idiosyncratic issues and decisions that arose in applying the model to the various states. This required adjudication of mainly technical issues such as when various missiles or aircraft entered service when this was unclear. A complete listing of these decisions is recorded in individual entries in the MPD.

In terms of presenting the information, this is described for each state under four relevant headings that broadly align with the first four steps of the power assessment process:

- *Territorial Claims and Operational Needs*. This describes nations' claims, their physical nature and location, leading to an identification of their key AO and assessment of their operational needs at each, data which is transposed into the MPD. This section also describes any new locations or changes in needs that occurred between 1995-2015 due to nations capturing features or altering their physical characteristics (such as island-building). A summary of each nation's operational locations, its mission-needs at each, and the competitors it faces there, are contained in the first few rows of an overview table provided at the end of each entry, which is also accompanied by a figure showing key locations.
- *Forces and Requirements*. This describes specific forces assigned to the SCS and their base locations, providing an assessment of assets available and range requirements that can be transposed into the MPD. These range requirements are also captured in the third row of each states' overview table. Also discussed

are any forces specifically excluded and any individual assumptions needed for platform counting totals that vary from the rules described above in the CAR.

- *Operational Suitability and Resilience Notes.* All assessments for these criteria are done in the MPD. This section describes any variations applied in making these assessments from the rules described in the previous section of the CAR.
- *Further Considerations.* This describes any detailed technical or other issues that affect the comparative or Geography assessment factors, with the terrain assessment also captured in the overview table. It also contains the analysis that delivers a rating for personnel quality that is transposed into the MPD.

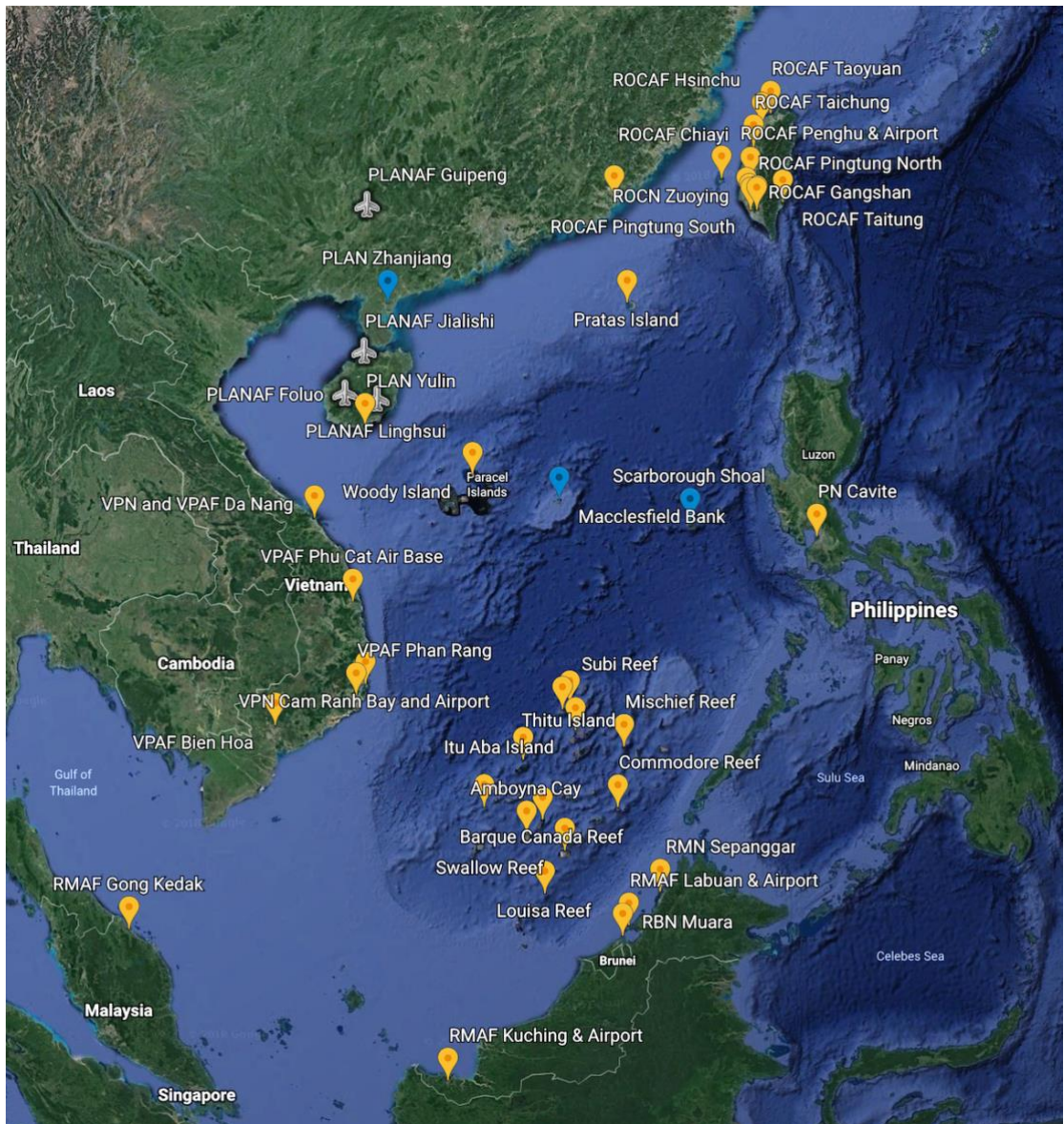
As a final introductory step before commencing a discussion of each nation, [Figure B6](#) is provided below, drawn from Google Earth showing all 44 locations considered in the MPA, comprised of 29 basing locations and 15 AO. This serves to illustrate the necessary diversity and level of detail required to effectively apply the model and make more operationally relevant assessments of states' military power.

Subsequently shown is [Figure B7](#), with some bases removed to reduce congestion, which illustrates key geographic features and bases together with territorial claims<sup>329</sup> as identified in electronic mapping data available from CSIS (2013). Of note, all figures in the MPA are the author's work drawn using Google Earth and harnessing mapping data from CSIS (2013) for maritime boundaries, unless otherwise stated – this data is used with permission.

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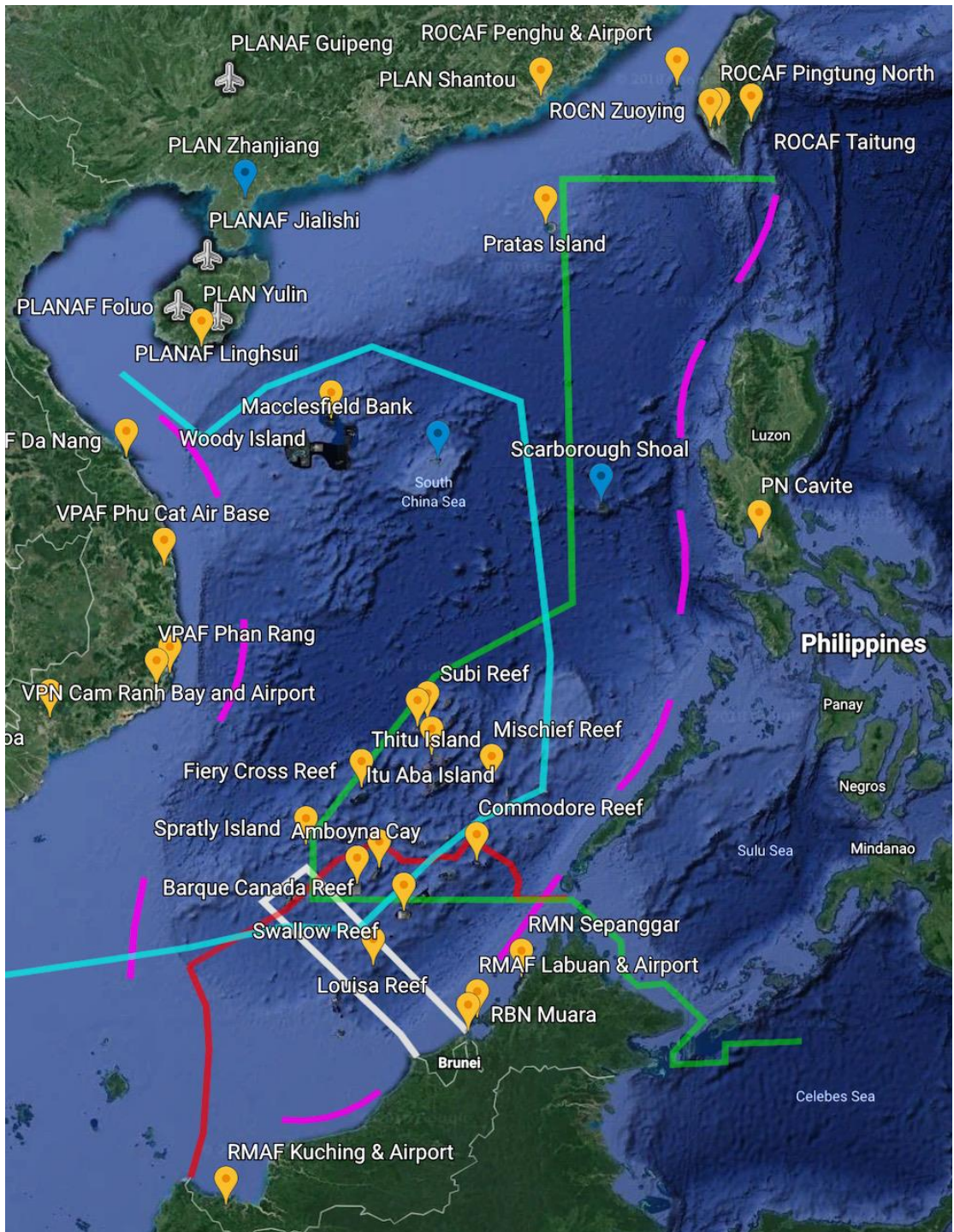
<sup>329</sup> The only claim not shown is the western portion of Malaysia's claim, as this is not contested by other nations and to include it here would congest the representation of the rest of the data. However, the entire Malaysia claim is shown in [Figure B2](#) above.

**Figure B6: Overview of South China Sea Claimant Bases  
and Operational Locations**



*Notes: Each base is identified through the acronym of its main military service (such as Vietnamese Peoples' Navy: VPN) and location name. Dual-use facilities (such as an airport that also is used by military forces) include the second use in the name. Brunei: Royal Bruneian Navy (RBN); China: People's Liberation Army Navy (PLAN), Naval Air Force (PLANAF); Malaysia: Royal Malaysian Navy (RMN), Air Force (RMAF); the Philippines: Philippine Navy (PN); Taiwan: Republic of China Navy (ROCN), Air Force (ROCAF); Vietnam: Vietnamese People's Navy (VPN), Air Force (VPAF).*

**Figure B7: Overview of South China Sea Bases**  
**Operational Locations and Claims**



*Notes: Country claims are identified as follows: Brunei – White; China/Taiwan – Pink; Malaysia – Red; the Philippines – Green; Vietnam – Blue. Claims data sourced from CSIS (2013).*



## **Brunei (BRN)**

### **Territorial Claims and Operational Needs**

Brunei claims the smallest area of the SCS, based on the 370 km EEZ from its coastline afforded it under UNCLOS. In this area there appears to only be one principal geographic feature, Louisa Reef, to serve as an AO (Roach, 2014). The Reef is not naturally inhabitable (Roach, 2014) and hence for Brunei to occupy it would require either land reclamation, the installation of an artificial outpost or the maintenance of a continuous naval presence. Any of these require an EMEZ to be achievable. Yet between 1995–2015, Brunei did not make efforts to reclaim land or position a permanent outpost, nor was evidence found of continuous patrols. Despite the above, as noted previously Brunei is treated as the ‘defending state’ for analysis purposes, and to hold relevant UNCLOS rights relating to the Reef’s TS.

In turn, to defend Brunei’s claim, SD EMEZ operations would need to occur to prevent other states from enforcing their own claims. Louisa Reef is also contested by China, Taiwan, Vietnam and Malaysia, in particular by the first three states.<sup>330</sup> None of Brunei’s claim contests any feature occupied by another nation.

The nature and location of Brunei’s claim, and its needs against its various competitors, are summarised in [Table B10](#) below. This location also shown in the table’s accompanying [Figure B8](#).

### **Forces and Requirements**

Brunei’s claims are enforced and defended by the Royal Brunei Air Force (RBAF) and the Royal Brunei Navy (RBN). While these forces have diverse geographic responsibilities, they are treated as being available in their entirety to be applied to defensive or offensive tasks in the SCS. This reflects both Brunei’s lack of other

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<sup>330</sup> It is possible that Malaysia has withdrawn its claim to the Reef (Roach, 2014, p. 39).

equally critical maritime disputes, which might otherwise draw these forces away in times of confrontation, and the limited size of the RBAF and RBN in total, requiring a concentration of effort to maximise chances of operational success. This also supports the effective utilisation of the information in *The Military Balance* that does not define how overall forces are split amongst regions.

#### Forces Excluded

While Brunei maintains a small AA capability this is not listed as these vessels are not relevant to the EMEZ or SD operations relevant to the nation

#### Range

Regarding issues of range, as Brunei's air force has no combat aircraft, the location of its bases is irrelevant. Brunei's naval base is located in the city of Maura, near the state's North Eastern tip, less than 250 km from Louisa Reef. This allows access to Louisa for all naval forces, including FAC, without venturing into blue water. The locations discussed above, and selected other nearby geographic features, are shown in Figure B8 below with distances between bases and AO in Table B10.

#### **Operational Suitability and Resilience Notes**

There are no additional notes regarding the assessment of Operational Suitability and Resilience with regards to Brunei.

#### **Further Considerations**

#### Asymmetry, Preponderance, and Modernity

There are no additional notes on the assessment of these factors with regards to Brunei. Bruneian CIWS are as listed in *Janes*.

## Training and Deployment

Overall, little in-depth information is available on the training level of the RBN, arguably due to the small size of force drawing little attention from commentators. With that said, salient matters are addressed by Goldrick and McCaffrie (2013) who note that the RBN has benefitted from naval experience inherited from Britain, which possesses a well-trained Navy (Brunei became independent only in 1984). The RBN hence had a strong tradition of effective training, supplemented by hiring contract-sailors and technical specialists to assist in the force's development over time. The country has also maintained a consistent exercise program with well-trained regional navies including Singapore through the Exercise Pelican series, since 1979; Australia through the Exercise Penguin series, since 2000; and the United States Navy (USN), through the Exercise CARAT series since 1995. While this provides a strong basis for effective training, Goldrick and McCaffrie note the effects of this are constrained by the limited personnel available to the RBN, preventing the benefits of training being fully realised as insufficient staff are necessarily available to fully crew platforms. Further, *The Military Balance* shows no foreign deployment experience for the RBN, although of course this does not mean that the force does not conduct regular operations in Brunei's waters.

Based on the above considerations of a strong training and exercise tradition whose effects are constrained by limited personnel and deployment experience, Brunei's Personnel rating is "acceptable" throughout the period.

## Terrain

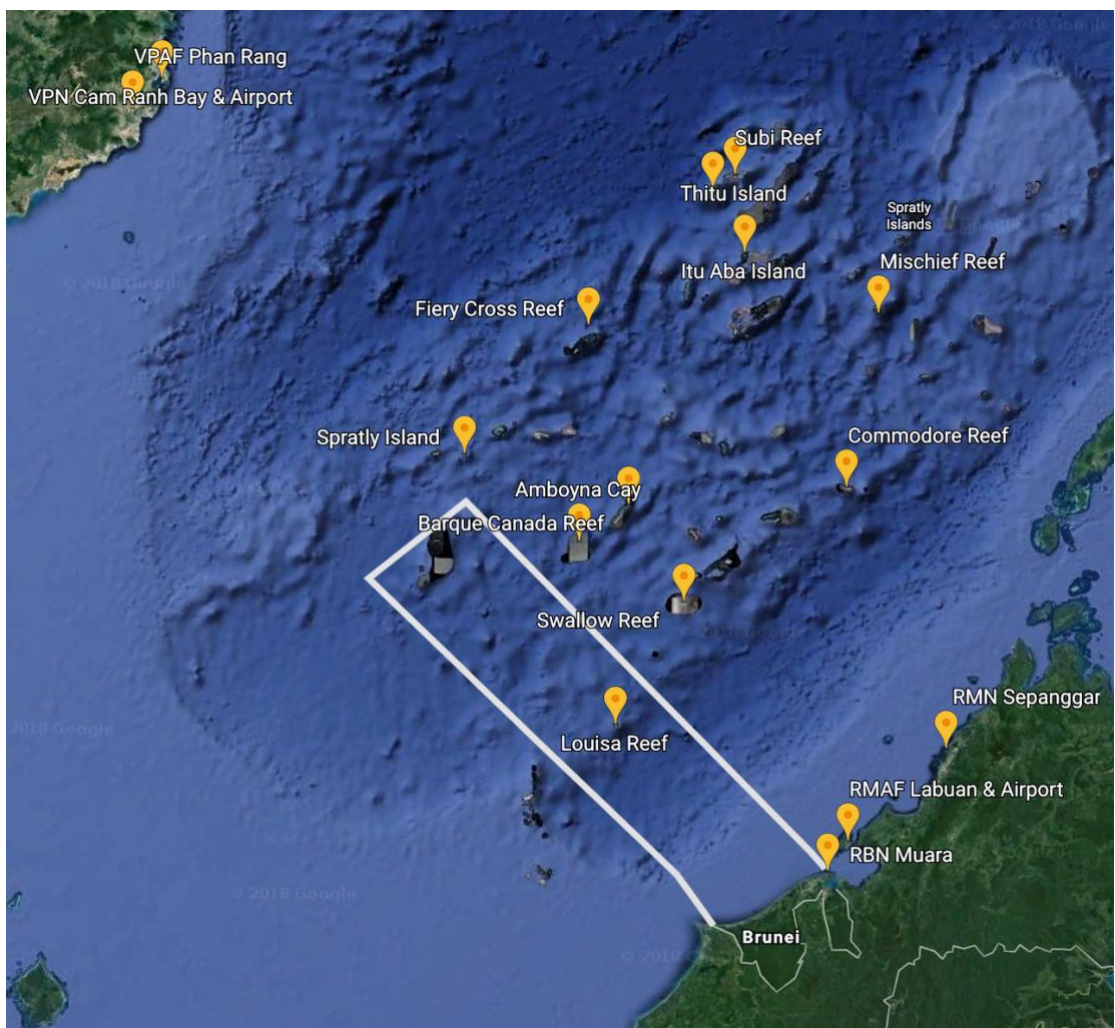
From a terrain perspective, as Louisa Reef is a principally submerged feature it provides neither advantage nor disadvantage to Brunei.

**Table B10: Brunei SCS Overview**

	Geographic Feature and Type				
	Louisa Reef (Sec-B)				
Claimed	BRN, MLY, CHN, TWN, VNM				
Controlled	N/A				
Distance from Brunei Bases	250 km				
Brunei Operational Need	EMEZ	SD EMEZ - MLY	SD EMEZ - CHN	SD EMEZ - TWN	SD EMEZ - VNM

Notes: AO distances from Maura Naval Base. Feature Type: CoG: Centre of Gravity; Sec-A: Secondary, Amphibious Assault Possible, Sec-B: Secondary, construction effort or naval patrolling required.

**Figure B8: Brunei South China Sea Overview**



Notes: Bruneian claim highlighted in white. Claims data sourced from CSIS (2013).

## The People's Republic of China (China/CHN)

### **Territorial Claims and Operational Needs**

Mainland China has claimed the most extensive area of the SCS, together with Taiwan, since 1949.<sup>331</sup> The claim, enclosed within the famous “nine dash line”<sup>332</sup> covers the entirety of the main groups of geographic features in the SCS together with substantial maritime territory beyond that afforded by UNCLOS. It is primarily based on historical evidence of occupation or control, such as these features’ representation on centuries’ old maps (Pedrozo, 2014).

Within the nine-dash line China pursued an expanding geographic presence in the SCS during 1995-2015 and has been by far the most active claimant in terms of expanding its areas of control (CSIS, 2018c). At the beginning of 1995, China occupied 20 features in the Paracels, seven in the Spratlys (including Mischief Reef which it seized from territory nominally controlled by the Philippines at the end of 1994 or the beginning of 1995), together with effectively controlling the underwater Macclesfield Bank through a regular naval presence.

Among these various possessions, at that time only Woody Island in the Paracels could then be classed as a CoG for Chinese forces, having an airfield and some small port facilities. The remaining islands and other features being considerably less developed, with the Spratly facilities in particular being very basic outposts on rocks or low-tide elevations. In 2012 China also occupied Scarborough Shoal; taking territory nominally controlled by the Philippines. Further, in 2014 an enormous land reclamation project commenced at three small features in the Spratlys: Subi, Mischief, and Fiery Cross Reefs.<sup>333</sup> By 2015, satellite imagery showed each was reaching a size suitable for an amphibious assault to occur, should a nation wish to

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<sup>331</sup> The claim was originally put forward by the Republic of China (Taiwan) in 1947, with this being taken up the People's Republic of China in 1949 (Pedrozo, 2014, pp. 17–18).

<sup>332</sup> The claim was originally an 11-dash line incorporating waters disputed with Vietnam, until this was resolved in 1953 (Pedrozo, 2014, pp. 17–18).

<sup>333</sup> This was supported by more modest improvements at a range of other features across the SCS.

threaten these facilities, and by 2016 (now outside the timeline of this dissertation) fully fledged military bases existed able to serve as new centres of gravity in the Spratlys.

China's claims, new conquests and building efforts are contested in whole or in part by every other competing state in the SCS, most of which also maintain their own facilities in these areas. Taiwan's claim mirrors that of China and thus disputes it entirely; and Taipei<sup>334</sup> maintains a centre of gravity at Pratas Island in the Pratas group and Itu Aba Island in the Spratlys. In turn Vietnam asserts ownership of the Paracels and Spratlys and holds a key facility at Spratly Island. Malaysia and the Philippines too both contest areas of the Spratlys and have respective major facilities at Swallow Reef and Thitu Island. And finally Brunei of course claims the still undeveloped Louisa Reef.

In total, by 2015 no less than 12 potential AO and 20 opponents can be identified for Beijing's attention, divided between key possessions to defend or adversary centres of gravity to threaten. Due to the complexity and extent of these overlapping claims and facilities, China has over the past 20 years had (and occasionally executed) needs for the full span of AA/MEZ, EMEZ and SD operations considered by this dissertation.

The nature and location of China's claim, and its needs against its various competitors, are summarised in Table B11 below. These locations are also shown in the table's accompanying Figure B11.

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<sup>334</sup> The inclusion of Taiwan merits a brief discussion as the potential for conflict between the two may appear unlikely. This is due to the two nations sharing a common position as both declare themselves to be the legitimate government of the whole of China, including the SCS territories originally claimed by the predecessor national administration in 1947. Due to this commonality, both Governments have broadly supported, or at least not conflicted, with claims made by the other. Hence, it might be argued China would not seek to contest Taiwan's existing zones of control. However, this dissertation assesses the chance of conflict as real due to the potential for Beijing to seek to pressure Taipei in general or to gain power directly for itself as predicted by OR.

## Forces and Requirements

The military forces most applicable to enforcing China's SCS claims are the units of the Chinese Navy, known as the People's Liberation Army Navy (PLAN), and the PLAN Air Force (PLANAF). The latter in particular serves to provide the PLAN with an air capability independent of that from the Chinese Air Force, known as the People's Liberation Army Air Force (PLAAF). The need for such a capability stems from the specialised nature of the tasks required by the PLAN, including long-range overwater flights for the air defence of naval units and bases, naval strike (i.e., ASuW), and maritime patrol and ASW (Office of Naval Intelligence [ONI], 2007, pp. 45–60; 2009, p. 23). These tasks are the responsibility of the PLANAF, with the PLAAF focussing on air defence of the mainland and attacking ground targets, together with other roles such as surveillance and paratrooper operations (Cliff, 2010, pp. 3–7).

The PLAN and PLANAF units counted in assessing China's military power in the SCS are those attached to the SSF, as this the force responsible for the area. Units from China's other two fleets, the North and East Sea Fleets, are not included due firstly to their differing responsibilities of, respectively, defending China's northern approaches and deterring Taiwanese independence or forcing reunification should this fail (ONI, 2015, p. 33; Cole, 2012, pp. 67–78). The three fleets' geographic areas of responsibility are shown in [Figure B9](#) below. Secondly, as all three fleets commenced the study period as already large if somewhat poorly equipped forces, and then gained rapidly in new units, it is the author's judgement that the SSF would be expected by Beijing to hold its own against other competitors in the SCS.

Importantly, in terms of SSF equipment this not only includes MSC, submarines and air units able to generate SD and SC; it is also the home of the PLAN's amphibious forces in the form of a Marine Corp comprised of two brigades of some 6,000 personnel each (Cole, 2012, p. 76). As such, the fleet is able to conduct the types of amphibious operations necessary to rapidly seize islands and meet China's objectives in the SCS; a key enabler for opportune moments for aggression.

Figure B9: PLAN Fleet Areas of Responsibility (AOR)



Source: Author's figure based on data From Cole (2012).

### Technical Notes on Counting Forces

In developing the SSF naval ORBAT certain assumptions proved necessary due to the constraints of available information in *The Military Balance* as the principal source. This publication only provides information on the numbers of units and classes assigned to the SSF from 2011, such as the Fleet having 10 submarines and 8



Destroyers. Previously only overall PLAN totals are presented, such as 40 submarines and 30 destroyers across the entire Chinese Navy.

To develop a SSF ORBAT for preceding years, the 2011 forces were first converted into a percentage of overall PLAN strength. So, that year, of the overall PLAN force the SSF held two nuclear powered attack submarines,<sup>335</sup> 33% of the conventionally powered (diesel motor) attack submarines, 40% of guided missile Destroyers, 35% of guided missile Frigates, 40% of FAC/Corvette, 26% of ASW Corvette, and 58% of Amphibious forces. These percentages are applied retrospectively to PLAN annual totals to identify a probable SSF ORBAT. For any year between 1995 and 2015, the ORBAT was “filled in” with referenced to individual pennant numbers (i.e., specific ships and submarines) where possible, with Janes sources and websites such as [www.sinodefence.com](http://www.sinodefence.com) proving particularly useful. Where sufficient pennants could not be identified, the remainder of the presumed ORBAT was populated by the most common units available in representative percentages. This approach was also used where no pennants were available and multiple classes of vessels were grouped under common headings in *The Military Balance’s* SSF ORBAT totals. For example, where two different class of FAC exist in a 60:40 ratio in the PLAN fleet, this was applied to the listed number of generic FAC for the SSF to identify how many of each type of vessel was present. Also, where insufficient vessels existed in total to “make up” expected pre-2011 ORBAT numbers, then the lesser total is accepted. For example, there were insufficient *Luda*-class Destroyer pennants/ships overall to provide the expected 7 Destroyers in the SSF in the 1990s.

This method of “back-casting” was judged broadly appropriate as while the SSF and PLAN overall underwent extensive improvements during 1995–2015 (discussed in Section IV below), the overall numbers of major vessels did not substantially increase (ONI, 2015). Instead, large quantities of old units were replaced by modern platforms of increasing size and capability. So, asset totals developed by applying SSF percentages to overall PLAN ORBAT are likely to be fairly representative.

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<sup>335</sup> The presence of nuclear submarines in PLAN service is able to be tracked by pennant number due to their limited numbers, hence is unnecessary to convert to a percentage.

Similar concerns also apply to the SSF PLANAF ORBAT, as *The Military Balance* only provides information on specific units from 2012, with these being three Fighter Regiments (one each of J-11, J-8, J-7), one bomber (of H6D) and one FGA Regiment (of JH-7/A). One Regiment is taken as 24 aircraft.<sup>336</sup> This total of five combat PLANAF Regiments is applied retrospectively to develop unit totals for previous years. As discussed in Section IV, the SSF held a low priority for equipment upgrades until 2004, hence until that point it is presumed to make-do with older equipment. Hence for fighter units, three regiments of the oldest available J-6 fighters are presumed to be in service until 2006, when *The Military Balance* indicates large scale deployment of J-8. Thereafter two Regiments of J-8 and one with J-7 are presumed until 2012. For FGA Regiments, the most common PLANAF strike asset (the H-5 torpedo-bomber) is presumed until 2004 when *Janes* indicates the JH-7/A commenced operations with the SSF. No PLANAF MARPAT aircraft assets are included as *The Military Balance* indicates none are assigned to SSF. Also, ASW helicopters are based on the entire PLAN strength, as such assets are presumed to be made available to “fill out” slots for embarkation on SSF surface assets.

Finally, two exceptions to the standard counting rules are applied to SSF forces. Firstly, the Type 371/IS *Hainan/Haiquing* class ASW vessels are counted for SC missions despite having no missile or torpedo armament. This reflects that they exist in such numbers that they might well be put to sea to provide some support to ASW in AA/MEZ and EMEZ missions, in addition to serving as additional targets for ASCM. Due to their lack of armament, they are not counted towards assessment of Operational Suitability or Resilience, and instead only as targets for Preponderance calculations. Such ships are also not included at all for SD missions where they lack the armament to contribute. Secondly, the most common but also oldest and lightest type of Chinese FAC, the Type 24 *Hegu*, is not included in totals due to its limited range and seakeeping, associated with being a 65-ton vessel. Noting the

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<sup>336</sup> While *The Military Balance* identifies numbers of aircraft by referring to numbers of Regiments, it does not describe how many platforms are in each unit. In this dissertation, a PLANAF Regiment will be counted as 24 aircraft in alignment with reporting by Cole (2012, p. 77). This is likely the number also used by *The Military Balance*. For example, its 2015 edition notes that the total PLANAF quantity of Su-30MK2 aircraft is 24 and that these only equip a single regiment (p. 241).

substantive stocks of larger FAC and other craft available to the SSF, the inclusion of the *Hegu* to island campaigns across hundreds of kilometres of open water was judged unlikely, rather than it being reserved for coastal defence duties.<sup>337</sup>

### Forces Excluded

Beyond the North and East Sea Fleets, four other forces potentially applicable to SCS operations are excluded from the military power assessments in the MPA. These are, firstly, PLAAF units based near the SSF, due to their differing specialisations from the PLANAF. Secondly are the ever-proliferating units of China's Coastguard, as while these units play an important role in China's efforts to exert its territorial claims (discussed further in Chapter Seven) they are essentially unarmed compared to military assets. Hence, they are unable to contribute to either SD or SC missions and should not be usefully included in balance of power calculations.

Also excluded are PLAN Coastal Defence Cruise Missile assets, being land-based units firing ASCM to defend against invasion efforts. While such forces could be deployed onto features to defend against attack, these are too large for most of the Chinese controlled features considered here, with the exception of Woody Island and the transformed Mischief, Subi, and Fiery Cross Reefs. Further, at these sites, for Woody Island there is either no indication such forces were permanently deployed there during the investigation period (CSIS, 2018c); or, for the others, that before their airstrips were completed (by early 2016) that they could be flown in promptly as opposed to moved by sea. Hence there is no reason to expect nations would factor such weapons into their calculations when considering surprise attacks.

Finally, also excluded is one of China's newest and potentially most potent weapons – the DF-21D Anti-Ship Ballistic Missile (ASBM), often characterised as a “carrier killer” aimed at the US navy (Heginbotham et al., 2015). This reflects three key

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<sup>337</sup> This includes for Pratas Island – while this AO is only some 300km from the Chinese mainland, this is still a substantial distance for a small vessel.

considerations. Firstly, the weapon remains untested over-water (as opposed to land-based tests) rendering its effectiveness (including from a Chinese perspective) necessarily uncertain. Secondly, the weapon is available during the period only in small numbers (six in total) commencing in 2015 (International Institute for Strategic Studies, 2015, p. 237).<sup>338</sup> In such numbers, and its likely high cost as a complex ASBM, its use against any but the most essential targets is judged unlikely, hence it is unnecessary to consider against assets such as Vietnamese or Taiwanese MSC, which are well able to be addressed by conventional PLAN forces. Thirdly, for the plum target that is a US aircraft carrier, this unit is only counted in Chinese operations against the Spratlys, which would occur near the limits of the DF-21D's range. Such situations are precisely where the limited stock of missiles would be most likely to miss due to targeting errors. Further, US forces would also have the most time to simply move out of the way by the time the missile arrived; or utilise defensive measures against it, such as missiles, radar-jamming of its homing warhead or interrupting its guidance links (Heginbotham et al., 2015, pp. 165–171). Due to such poor conditions, and the plethora of other options available to Chinese forces, the DF-21D was determined as not being useful to include in measuring military power to 2015, although of course it would usefully be included in assessments going forward.

### Range

The South Sea Fleet's PLANAF forces are located at four main bases, one on the mainland (Guiping airfield) supporting ASuW bombers, and three on Hainan Island located fairly closely together and focussing on fighters (Folou, Jialishi and Lingshui airfields).<sup>339</sup> These bases are respectively 2000 km (Guiping) and 1,600 km (Jialishi, the northern-most fighter base) from the most distant elements of the Spratlys.

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<sup>338</sup> Although some sources indicate that the DF-21 reached an initial capability as early as 2010 (Collins & Erickson, 2010), the use of The Military Balance's date is preferred for consistency.

<sup>339</sup> Cole (2012) identifies seven "main" South Sea Fleet PLANAF bases: Lingling and Guipeng on the mainland, and Folou, Haikou, Sanya, Lingshui and Jialaishi on Hainan Island. Cross referencing these with Kopp (2012) and observation of satellite imagery shows Lingling, (the only airfield north of Guipeng) Haikou and Sanya to be either mixed-use or civilian airfields which are judged unlikely to have a primary role in PLANAF capability.

More broadly, the Hainan Island bases are an average<sup>340</sup> distance of 400 km from the Paracel Islands, 600 km from Macclesfield Bank, 750 km from the Pratas Islands, 950 km from Scarborough Shoal, and 1000–1,500 km from the widespread Spratly islands. These expanses form critical limiting factors on PLANAF contributions to SSF missions due to the limited range of most Chinese aircraft and the almost complete lack of airborne refuelling capability to extend these ranges (Heginbotham et al., 2015, p. 88).

More broadly, the SSF has its headquarters and many naval units at Zhanjiang, with other major naval bases at Shantou and Yulin (this being principally a submarine base), and subsidiary bases spread along the Guanzghou coast (Cole, 2012, p. 75). These bases are all less than 2,000 km away from the Spratlys. However, their location has little impact on the SSF's capability requirements as even the shortest range MSC and submarines needed for missions can easily traverse such distances.

The base locations discussed above, together with selected other nearby geographic features, are shown in Figures B10 and B11 below, with distances between bases and AO summarised in Table B11. For this table specifically, the representative base location selected was PLANAF Lingshui on Hainan Island, as the closest base to most AO for the fighters and FGA that form the bulk of PLANAF forces and that are the assets most sensitive to range. In the MPD, other ranges are shown for bombers, calculated from Guipeng, and naval forces, from Zhanjiang.

### **Operational Suitability and Resilience Notes**

Regarding the assessment of Operational Suitability and Resilience, China is the only nation assessed as able to achieve ASuW SC through use of submarines with short-ranged weapons alone due to the large numbers available to it. While in reality depending on such assets alone would be highly unusual, they are included in Resilience calculations for completeness.

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<sup>340</sup> Taking distances from the centre of Hainan, which all the airbases are within 100 km of.

Regarding how assets are counted, while Type 56 and 56A Corvettes are normally considered ASW assets these are instead counted as ASuW units. This is because they lack the ability to embark a helicopter, which is necessary for an asset to be counted for ASW operations in this dissertation. As noted above, the Hainan and Haiquing cannon-armed ASW units are also not counted for assessments of Operational Suitability and Resilience. Finally, the two types of Chinese ASW helicopters (the large Ka-28 that can carry weapons and sensors and the smaller Z-9C that can carry either but not both together) are presumed to be deployed optimally. So, Ka-28s are assumed on larger ships that can embark them and Z-9C on remaining vessels. For Resilience assessment purposes this means the loss of smaller vessels does not mean the loss of a fully capable Ka-28.

Regarding placement of aircraft for calculating availability at AO, as noted previously Fighter and FGA aircraft ranges were calculated from Lingshui airbase on Hainan Island, the base closest to most AO. The basis for this was, firstly, that for short-ranged assets such as J-6 and J-7 Fighters, Lingshui proved the only suitable base from which such platforms could operate to reach AO.

Secondly, for longer-ranged assets such as J-8, J-11 or JH-7/7A aircraft, Lingshui was close enough to the other bases on Hainan island (Foluo and Jailishi) where these platforms were usually based that it served as a suitable proxy. Further, following the process of aircraft-to-base optimisation discussed previously, in scenarios where J-6 or J-7 aircraft could not reach an AO, these are considered to be dispersed and their places taken by other, longer-ranged assets in any case. Bomber aircraft (H-6D/G) distances were calculated from Guipeng airbase.

## **Further Considerations**

### Asymmetry

The long-range (180 km) YJ-83 ship-launched ASCM is presumed to equip all SSF surface platforms by 1996 unless otherwise indicated in the MPD, noting *Janes*

advises the missile achieved an Initial Operating Capability (IOC) in 1993 and Full Operating Capability in 1999. The air-launched YJ-83K has a presumed IOC of 2006 based on its first showing that year. The YJ-82 submarine-launched ASCM has a presumed IOC of 2004 based on its first trade-show appearance that year. The YJ-12 long-range ASCM has a presumed IOC from 2013 when *Janes* notes the first hardware was displayed.

### Preponderance

The HQ-7, HQ-9, HQ-10, HQ-16, and SA-N-7 SAM are classed as ASCM interceptor capable missiles based on commentary in *Janes*. Chinese CIWS are as listed in *Janes*. Two Chinese ships have multi-purpose missile launchers, the Type 52D Destroyers and Type 54A Frigates. The weapons load-out for the 64-cell Type 52D multi-purpose launchers is presumed as presumed 56 HQ-9 SAM and eight YJ-18 ASCM for MEZ missions, and 56 YJ-18 and 8 HQ-9 for SD. For the 32-cell launcher on the Type 54A, 24 HQ-16 SAM and 8 CY-5 long-range ASW missiles are presumed in either MEZ or SD missions as the launcher cannot hold ASCM. This load also reflects the Frigate's AAW and ASW focus as it is able to embark a Z-9C ASW helicopter that carries anti-submarine sensors or weapons but not both, requiring it to cooperate with the Frigate to attack targets effectively.

### Modernity

There are no additional notes regarding the assessment of Modernity with regards to China.

### Training and Deployment

While China remains broadly secretive in revealing detailed training or deployment information; the sheer size of its armed forces, the number of commentators assessing these, and an increasing openness in official communication provides a basis for analysis. Most particularly, the USN's Office of Naval Intelligence (ONI)

discussed the PLAN's training and deployment evolution in its 2007 and 2015 assessments of the force. Both note that until the year 2000, training for the PLAN (and by implication PLANAF) was fairly poor, being highly scripted and not representative of war-like conditions. A process of slow improvement began after 2000, with increasing complexity and realism (ONI, 2015, pp. 27–32). This also included deliberate amphibious assault training for islands in the SCS, including for “surviving under field combat conditions after landing on shore or on an island or reef” (ONI, 2007, p. 56). The ONI 2015 assessment in particular notes that “recent exercises” have demonstrated the PLAN has become proficient in ASuW, has made substantial AAW improvements and has shown some progress in ASW (ONI, 2015, p. 27).

The document also discusses a range of exercises and deployments between 2011 and 2013 that have occurred in regional waters distant from China's coasts, demonstrating that conducting more complex operations farther from home bases has become normalised (ONI, 2015, pp. 27–29). Further, both the ONI 2015 assessment and Cole (2012, p. 142) note that the PLAN commenced its first genuine international operational deployment to the Gulf of Aden in 2009. This was to conduct counter-piracy operations, with Chinese forces in position since then. The Aden deployment has served to both demonstrate a capability to operate continuously in distant seas and to provide valuable exposure to practical conditions, with before this mission the PLAN having very little experience of actual operations (ONI, 2015, p.27).

Separately, for flying units, the number of hours spent conducting flying training serves as a rough barometer of capability (Cliff, 2015, p. 120). Cole points out that in 2010, PLANAF pilots averaged 140 hours a year of flying training, a substantial increase from a decade before (2012, p. 131). This figure is roughly equal to that obtained by United States Air Force (USAF) pilots representing a first-class air force (Pawlyk, 2018).<sup>341</sup>

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<sup>341</sup> Noting, however, that the United States aims to have pilots flying around 240 hours per year.



The evidence above indicates a real increase in the PLAN's capabilities, although the noted limitations in AAW and ASW by the 2015 ONI report prevent a Personnel rating of "good". This leads to a decision that between 1995–2015 the Chinese Navy went from a "poor" to an "acceptable" Personnel rating; with the change-date selected as 2010. This is based on the commencement of the Gulf of Aden deployment in 2009, which would have provided important operational experience, and the ONI 2015 document's reference to "recent exercises" demonstrating improved performance, and later referring to instances no earlier than 2011.

### Terrain

The only terrain where China is assessed to have an advantage is its CoG at Woody Island and also in 2015 at Subi, Mischief, and Fiery Cross Reefs once these have achieved sufficient land reclamation. China's position is adverse when attacking adversary CoG and neither advantaged or disadvantaged when conquering or defending secondary targets such as Scarborough Shoal.

**Table B11: China SCS Overview**

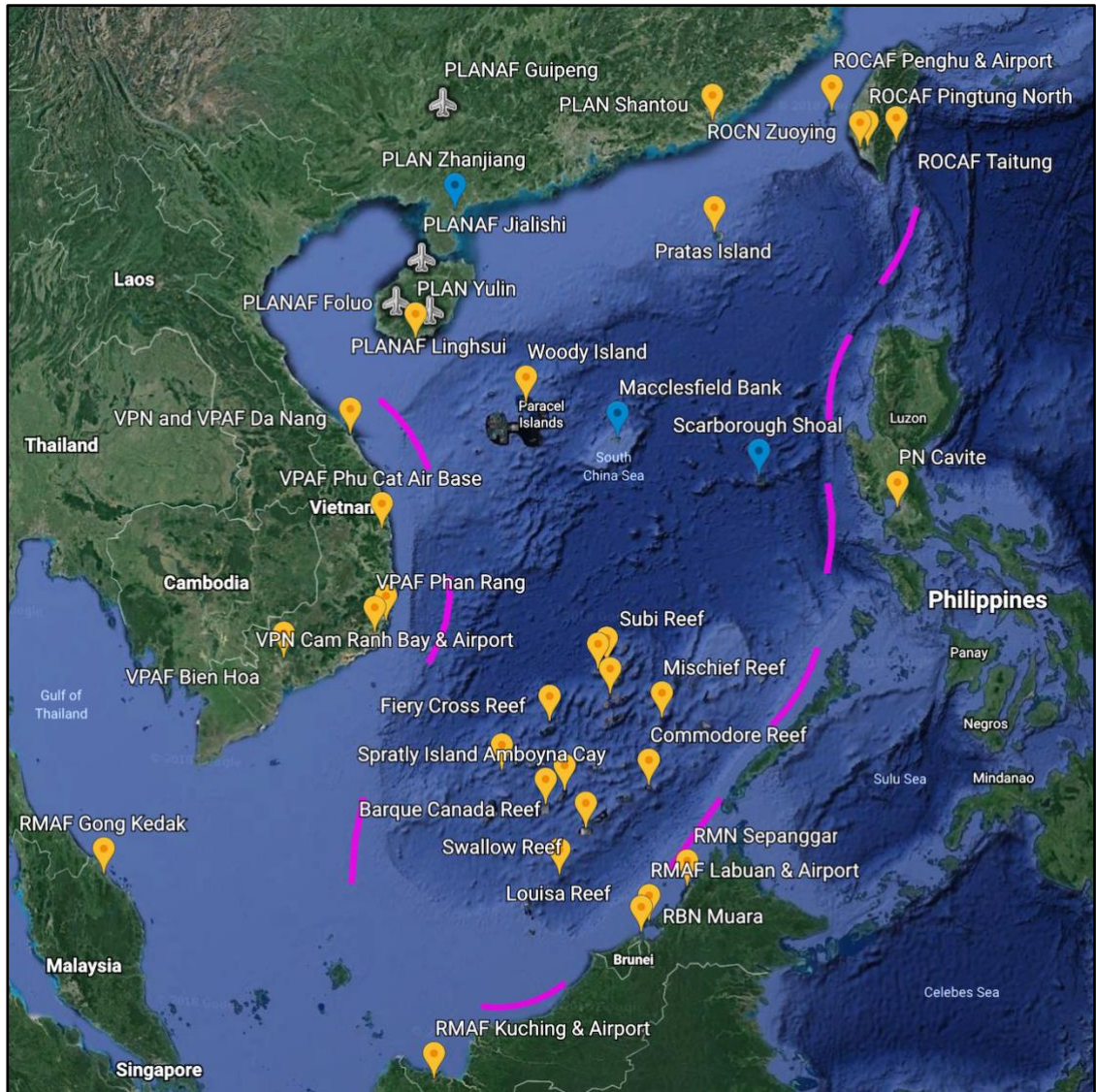
		Geographic Feature and Type																			
		Woody Island (CoG)	Pratas Island (CoG)	M'field Bank (Sec B)	Scarborough Shoal (Sec B)	Subi Reef (Sec B to 2014; Sec A in 2015)			Thitu Island (CoG)	Itu Aba Island (CoG)	Fiery Cross Reef (Sec B to 2014; Sec A in 2015)			Mischief Reef (Sec B to 2014; Sec A in 2015)			Spratly Island (CoG)	Swallow Reef (CoG)	Louisa Reef (Sec B)		
Claimed		CHN, TWN, VNM	CHN, TWN	CHN, TWN	CHN, PHL, TWN	CHN, PHL, TWN, VNM			CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM			CHN, PHL, TWN, VNM			CHN, TWN, VNM	CHN, MLY, TWN, VNM	BRN, CHN, MLY, TWN, VNM		
Controlled		CHN	TWN	CHN	PHL: 1995–2012 CHN- 2012+	CHN			PHL	TWN	CHN			PHL: 1995 CHN: 1995+			VNM	MLY	N/A		
Distance from Bases (Lingshui)		310	660	550	900	950			950	1000	1050			1100			1100	1300	1400		
Chinese Operational Need		SD – TWN	SD – VNM	AA/MEZ	SD EMEZ	EMEZ /SD EMEZ – PHL	SD EMEZ – TWN	SD EMEZ /SD – PHL	SD EMEZ /SD – TWN	SD EMEZ /SD – VNM	AA/MEZ – USN	AA/MEZ	SD EMEZ /SD – PHL	SD EMEZ /SD – TWN	SD EMEZ /SD – VNM	SD EMEZ /SD – PHL	SD EMEZ /SD – TWN	SD EMEZ /SD – VNM	AA/MEZ	AA/MEZ	EMEZ

Notes: AO distances from PLANAF Lingshui. Rating Scale: I: Inferior; DP: Disadvantaged Parity; RP: Rough Parity; AP: Advantaged Parity; S: Superior. Feature Type: CoG: Centre of Gravity; Sec-A: Secondary, Amphibious Assault Possible, Sec-B: Secondary, construction effort or naval patrolling required; N/A: Not Applicable.

Figure B10: South Sea Fleet Key Bases and Nearby Points of Interest



Figure B11: China in the South China Sea Overview



Notes: Chinese claim highlighted in pink. Claims data sourced from CSIS (2013).

## Malaysia (MLY)

### **Territorial Claims and Operational Needs**

Malaysia's claim is split into a western portion, which is not contested by other nations, and an eastern portion covering a range of geographic features in the Spratly Islands including islands, reefs and rocks (Roach, 2014). The eastern portion is contested in whole by China, Taiwan, and Vietnam, and in part by the Philippines and Brunei. Of the features claimed by Malaysia, two are occupied by Vietnam (Amboyna Cay and Barque Canada Reef), one by the Philippines (Commodore Reef) and one is most likely to be defended by Brunei (Louisa Reef). In turn, Malaysia occupies five features, with the CoG being Swallow Reef, which hosts an airfield. All of these features, including Swallow Reef, are claimed by China, Taiwan, and Vietnam, with the Philippines claiming certain features but not including the Reef. These considerations lead firstly to an operational need for SD to defend Swallow Reef (noting the rest of Malaysia's features that are contested by Manila are not considered). Offensively, there is a requirement for an AA/MEZ operation to conquer Amboyna Cay, being of a size suitable for conquest by amphibious attack, and EMEZ operations at the smaller Commodore, Barque Canada and Louisa Reefs.

The nature and location of Malaysia's claim in the SCS, and its needs against its various competitors, are summarised in [Table B12](#) below. These locations are also shown in the table's accompanying [Figure B12](#).

Of note, the Western portion of Malaysia's claim is not shown as it is not being contested by other nations, although it can be reviewed on the overall [Figure B2](#) in the early part of this Annex. The only other features not shown in [Figure B12](#) are secondary targets contested by the Philippines due to that nation being operationally unsuitable to conduct offensive operations hence not requiring Malaysian efforts to defend against them.

## **Forces and Requirements**

To address Malaysia's needs is the responsibility of the Royal Malaysian Air Force (RMAF) and Royal Malaysian Navy (RMN). While these forces have diverse geographic responsibilities, they are treated as being able to be applied cohesively to defensive or offensive operational tasks in the SCS. This reflects both Malaysia's lack of other equally critical maritime disputes, which might otherwise draw these forces away in times of confrontation, and the limited size of the RMAF and RMN in total, requiring a concentration of effort to maximise chances of operational success. This also supports the effective utilisation of the information in *The Military Balance* that does not define how overall forces are split among regions.

### Excluded Forces

Only Malaysia's heavy amphibious assets were considered for AA/MEZ missions. While Malaysia has a range of lighter assets that could assist in amphibious operations in the SCS, these were not considered suitable to be counted for the purposes of Operational Suitability and Resilience. This reflects both limited information available on these forces and in particular the lesser seakeeping capabilities associated with smaller vessels.

### Range

On the issue of relevant operational distances, the Navy's closest naval base to the disputed features is at Sepanggar, less than 300 km from Spratlys. This base affords access to the region by missile armed FAC and larger craft without the need to venture into blue water, rendering concerns over distance largely irrelevant to the RMN. Regarding the RMAF, the service's major bases are located on peninsular Malaysia, such as at Gong Kedak. This facility, the home of Malaysia's most potent Su-30MKM aircraft, is between 1,000 km and 1,400 km away from the region claimed by Malaysia. These distances would severely constrain the application of air power, however two smaller airbases exist much closer and are considered to be

the main foci for any Malaysian efforts in the region, as aircraft are presumed to deploy to these. These are RMAF Kuching, located 300 km–900 km from the features claimed by Malaysia; and RMAF Labuan, which is 260 km–400 km from these points. These distances do impose constraints on the RMAF’s ability to apply air power, although as shown in the MPD, most of Malaysia’s combat aircraft can comfortably reach the most distant contested point, Barque Canada Reef, from RMAF Labuan. For the purposes of range calculations, Malaysia’s longest ranged aircraft, the Su-30 and F-5, were presumed to be based at Kuching with the remainder of forces at Labuan. Further, aircraft availability at AO in the MPD captures support from Malaysia’s limited tanker aircraft.

The locations discussed above, together with selected other nearby geographic features, are shown in [Figure B12](#) below with distances between bases and AO summarised in [Table B12](#). For this table, RMAF Labuan was selected as the representative base location as the majority of RMAF assets fly from there in the MPD. Also, as noted above the short distances between AO and RMN Sepanggar have little effect in terms of constraining naval assets.

### **Operational Suitability and Resilience Notes**

Regarding the assessment of Operational Suitability and Resilience, Malaysia is the only nation where air-to-air tanker refuelling is present to affect the numbers of assets able to support SD and MEZ operations. A review of ORBAT showed four C-130H tankers, equating to 1 available for SD and EMEZ operations (noting totals are multiplied by 1/3) and 3 for SC (totals multiplied by 2/3). For SC, this would generate one tanker permanently on station to support patrols, one refuelling at base and preparing to launch, and one returning from its station. The EMEZ figures presumes no tanker support as one is not permanently available. For SD, the support of one tanker is presumed. In terms of basing locations Su-30 and F-5 aircraft were presumed to operate from RMAF Kuching and all others from RMAF Labuan, with these distances being used respectively to inform the determination of aircraft availability at AO.

Regarding Resilience, for ASW 12 HAS.1 helicopters are listed in the Malaysian ORBAT by *The Military Balance*. However, only six of these are treated as available, due to *Janes* sources note that six were used for operations and six were kept in hangars to use for spare parts. Regarding SD-capable aircraft assets, AGM-65 are presumed to be utilised by Hawk 208 further to notes in *Janes*.

## **Further Considerations**

### Asymmetry

There are no additional notes regarding Asymmetry for Malaysia.

### Preponderance

As discussed previously, the longest ranged aircraft are presumed to deploy to RMAF Kuching when determining numbers of aircraft at an AO that may count as targets. Further, these tanker are considered to support Malaysia's Mk 208 FGA aircraft to maximise target and AAW/ASuW missile practical preponderance until 2008, when assigning tankers to Su-30 generates superior outcomes. Regarding missiles, *Seawolf* and *Aspide* SAM are classed as ASCM interceptor capable, as advised by *Janes*. Malaysian CIWS are as listed in *Janes*.

### Modernity

Malaysia's *Kedah* class vessels are classed as modern despite their light armament due to their young age and also being considered as Offshore Patrol Vessels rather than Corvettes.

### Training and Deployment

Similarly to Brunei, little information is available about the details of the training and deployment experience of the RMN and RMAF. This likely reflects the relatively



small size of these forces and consequent reduced interest from analysts and commentators. Nevertheless, Goldrick and McCaffrie (2013, pp. 92–116) provide an overview of the development of the RMN. From a training perspective, since independence in the 1960s, the force benefitted from inheriting experience from the Royal Navy. While the RMN has long recognised the necessity of effective training, this has been hamstrung due to a limited budget and the diverse nature of the fleet, requiring specialised training courses and hampering the ability of personnel to operate on different vessels. However, the force has maintained complex exercise engagements with a range of competent regional and global navies including the United Kingdom and Australia through the Starfish series of exercises and the CARAT exercises with the USN. The outcome of such training has been a capability to conduct fairly complex operations, with for example an RMN ship deployed on counter-piracy operations to the Gulf of Aden in 2010 operating for six months away from its home base (Desilva-Ranasinghe, 2013).

Regarding the RMAF, while no specific training information appears available, similarly to the RMN the service must face a constrained budget and complex fleet – with similar effects of increasing training costs and preventing easy transfer of personnel between aircraft types. While the annual flying hours for pilots are unclear, in 2017 several pilots were awarded 1,000 flying-hour certificates for the Su-30 aircraft (Irkut Corporation, 2017). Presuming these pilots had operated the aircraft since its introduction in 2004, this would indicate a flying rate of around 75 hours per year, some 75 hours shorter than managed by the USAF in practice, noting that service aimed ideally for 240 flying hours per annum. However, the RMAF remains involved in a range of major exercises such as Pitch Black hosted by Australia;<sup>342</sup> Cope Taufan, hosted by Malaysia and training with the USAF (Rogoway, 2014); and occasional participation in the USAF's major multinational Red Flag exercise.

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<sup>342</sup> In 2018, Pitch Black included Australia, Malaysia, Singapore, India, Thailand, United States, Canada, New Zealand and United Arab Emirates (Basyir, 2018).

Further to these factors, while the RMN and RMAF are clearly better than poorly trained, the forces' lack of funding and diverse fleets appear to prevent them from instructing their staff to a world-class level. Thus, they are judged to have a rating of "Acceptable" for Personnel.

### Terrain

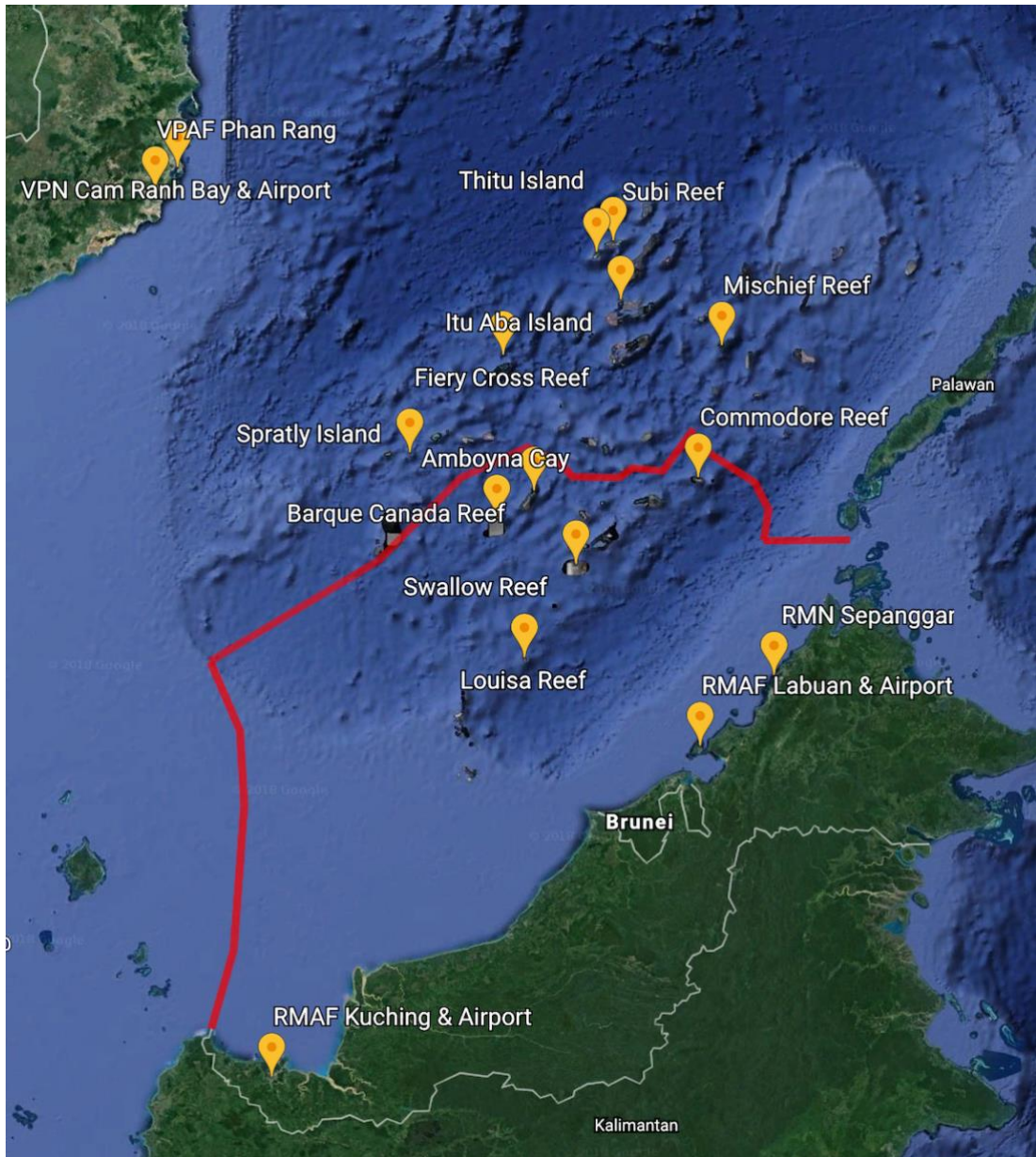
The only terrain where Malaysia is assessed to have an advantage is its CoG at Swallow Reef. Malaysia's position is adverse when attacking Amboyna Cay and neither advantaged or disadvantaged when conquering or defending secondary targets such as Commodore Reef.

Table B12: Malaysia SCS Overview

		Geographic Feature and Type						
		Louisa Reef (Sec B)	Swallow Reef (CoG)			Commodore Reef (Sec B)	Barque Canada Reef (Sec B)	Amboyna Cay (Sec A)
Claimed	PRC, ROC, VNM, MLY, BRN	CHN, MLY, TWN, VNM			CHN, MLY, TWN, VNM	CHN, MLY, TWN, VNM	CHN, MLY, PHL, TWN, VNM	
Controlled	N/A	MLY			PHL/USN	VNM	VNM	
Distance from Bases (Labuan)	250	280			330	390	390	
Malaysian Operational need	EMEZ - BRN	SD - CHN	SD - TWN	SD - VNM	EMEZ	EMEZ	AA/MEZ	

*Notes: AO distances from RMAF Labuan. Feature Type: CoG: Centre of Gravity; Sec-A: Secondary, Amphibious Assault Possible, Sec-B: Secondary, construction effort or naval patrolling required; N/A: Not Applicable.*

Figure B12: Malaysia in the South China Sea Overview



Notes: Malaysian western SCS claim highlighted in red. Claims data sourced from CSIS (2013).

## The Philippines (PHL) and The United States Navy (USN)

### **Territorial Claims and Operational Needs**

In the SCS the Philippines claims some 20 features in the Spratlys, with these considered by Manila to be part of a separate geographical formation it refers to as the Kalayaan Island Group (KIG), together with Scarborough Shoal (Rosen, 2014). Among these features, the Philippines' centre of gravity is at Thitu Island, which has a small air-strip and military outpost. Manila's claims encompass a range of features controlled by other states, including CoG at Itu Aba Island (Taiwan); what became CoG for China at Mischief,<sup>343</sup> Subi and Fiery Cross Reefs; together with an assortment of over 20 other small features claimed or occupied by these nations and also Vietnam and Malaysia (Rosen, 2014; Roach, 2014). In turn, the Philippines claims are contested in their entirety by China and Taiwan, with all of the KIG disputed by Vietnam (but not Scarborough Shoal), and the Philippine-controlled Commodore Reef in the Spratlys desired by Malaysia.

This situation leads to operational needs for the Philippines for SD, in particular to defend Thitu Island, but also AA/MEZ to conquer other states' centres of gravity and EMEZ to capture smaller disputed features such as those controlled by Malaysia, China and Vietnam. Of note, as Taiwan and the Philippines share the US as a security guarantor, Manila is considered unlikely to attempt to capture Itu Aba. In turn, of the various secondary features sought by the Philippines, only Mischief, Subi and Fiery Cross Reefs, and Amboyna Cay and Barque Canada Reef, are used to assess states' behaviour. But as discussed below, these are effectively unable to be conquered by Manila due to its armed forces being operationally unsuitable (i.e., clearly inferior) to conduct aggressive operations. Hence neither operations against Taiwan or these secondary features are considered in any detail; although for the latter behavioural predictions are still developed illustratively as the Philippines should act in the manner expected from a clearly inferior power.

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<sup>343</sup> Mischief was occupied by China from the start of 1995, thus requiring recapturing from then on.

The nature and location of the Philippines' main claims against CoG, and its needs against its various competitors, are summarised in [Table B13](#) below. Noting the Philippines' armed forces offensive weakness (discussed below), for convenience all the secondary targets in the Spratly/KIG group of features are grouped into a single column – as Manila's inferiority is consistent regardless of the adversary or distance from bases. These locations are also shown in the table's accompanying [Figure B13](#). The only features not shown are the various secondary features claimed by Manila.

### **Forces and Requirements**

The responsibility for achieving these needs would fall to the Philippine Navy (PN) and Philippine Air Force (PAF). While these forces have diverse geographic responsibilities, they are treated as being able to be applied cohesively to defensive or offensive operational tasks in the SCS. This reflects both the Philippines lack of other equally critical maritime disputes, which might otherwise draw these forces away in times of confrontation, and the limited size of the PN and PAF in total, requiring a concentration of effort to maximise chances of operational success. This also supports the effective utilisation of the information in *The Military Balance* that does not define how overall forces are split among regions. However, this point is somewhat moot as the PN and PAF lack the capability, even operating cohesively, to produce needed operational effects for Manila. This reflects that the PAF had no combat aircraft across the study period and the PN held no missile-armed combatants; so, no forces met the criteria for inclusion in assessing power balances

Importantly, and beyond the capabilities of the PN and the PAF, a key aspect of the Philippines' defence arrangements is the *Mutual Defense Treaty Between the United States and the Republic of the Philippines (1951)*, which states that both nations will act in common in response to an armed attack on either. While this notionally provides Manila with the protective shield of Washington's forces, it is unclear whether the US considers the Treaty to oblige America to aid the Philippines should disputed SCS territories controlled by Manila be threatened (Lum, 2012, pp. 28–29). This ambiguity is arguably deliberate by the US to help

prevent overly aggressive behaviour by the Philippines with the expectation of support. The uncertainty of US action was emphasised during the confrontation between China and the Philippines over the uninhabited Scarborough Shoal in 2012 where American military forces did not become involved (de Castro, 2015). However, Article V of the Treaty considers an attack on the Filipino armed forces as an armed attack requiring a common response.

Hence, this dissertation considers that a prudent aggressor would need to compare its military power to that of the US when considering an attack on features where Filipino military units are deployed. In this study, these are Thitu Island and Commodore Reef. Further, Washington has indicated that it takes no position on which nations have superior claims in the SCS but does wish to see the disputes resolved peacefully (Rosen, 2014). Hence this dissertation also considers that US forces would not be involved should Manila seek to initiate military actions to conquer disputed territory.

Regarding which US forces fall under consideration, differing geographic responsibilities rule-out American forces beyond the Pacific, leaving the USN's 7th Fleet as the primary formation under consideration. Further, the presumed operational scenario of a surprise attack limits too the forces of this Fleet to those readily available to intercede.<sup>344</sup> For the purposes of this dissertation, these are considered to be those units forward deployed to Yokosuka, being typically an aircraft carrier, some 11 destroyers and cruisers and two submarines. These forces are some 17 days closer to contingencies in the SCS compared to those in the continental US (United States Navy, 2017b).

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<sup>344</sup> While arguably wider forces would have time to be called upon to intercede against a Malaysian EMEZ at Commodore Reef, the existing US assets are already so superior that such actions were judged unnecessary.

### Technical Notes on Counting Forces

Prior to 2009, *The Military Balance* does not provide breakdowns for USN MSC types based in Japan, simply stating overall numbers e.g., eight or nine MSC, noting this term covers vessels from Corvettes to Cruisers. For 2009 and after, typically eight Destroyers and two Cruisers are listed as based in Japan. This 80/20 percentage is applied retrospectively to prior-year overall totals when determining MSC class numbers. Class numbers are filled in with reference to individual pennant numbers where available (principally for cruisers and *Spruance* class Destroyers) with the remainder allocated to *Arleigh Burke* Destroyers or *Ticonderoga* Mk 41 Cruisers as the most common types. Further, prior to 2011, *The Military Balance* does not list Yokosuka breakdowns between *Arleigh Burke* Flights I/II and IIA ships, with the latter being helicopter capable; thereafter an average 60 (Flight I/II) to 40 (Flight IIA) split is shown. This percentage is applied retrospectively, presuming a Flight IIA commencement in Japan of 2002 (noting the overall class IOC is 2000). Also, two nuclear powered attack submarines are occasionally listed as deployed to Yokosuka and sometimes not; two such boats are presumed in all cases as these are typically part of carrier strike groups. As the type of submarine was not listed, the *Los Angeles* class was presumed as it is the most common US class.

### Excluded Forces

While the Philippines maintains a range of amphibious assets, none of these were included as due to the lack of ability to impose offensive MEZ operations, likewise no amphibious operations are considered to be feasible.

### Range

On issues of range, these are broadly of little relevance to military issues involving Manila. Since, as discussed above, the PN and PAF can bring to bear effectively no useful combat capabilities, the distance of AO from these forces' bases has no real impact on assessments of military power. Instead, to provide an illustrative idea of

range, key locations' distances from the main PN base at Cavite are provided. Similarly, regarding US forces, as those based at Yokosuka have ranges of thousands of kilometres that easily compass the entire SCS, the location of AO is again irrelevant. The locations discussed above, excluding Yokosuka, together with selected other nearby geographic features, are shown in [Figure B13](#) with distances between bases and AO summarised in [Table B13](#).

### **Operational Suitability and Resilience Notes**

The 7th Fleet forces, being already forward-deployed, were not subject to any multiplication by two-thirds or one-third to determine available assets. Instead, all vessels were counted. For Resilience counting purposes, a carrier and two escorting cruisers are always presumed to be at stand-off distances from AO.

### **Further Considerations**

#### Asymmetry

There are no additional notes regarding Asymmetry for the Philippines or USN. For ship and aircraft ASuW weapon ranges respectively, the RGM-84D and AGM-84D or later of the standard US Harpoon missile are presumed. This notes the D-variant's IOC in 1985 and it being representative of most other variants' ranges (for ship-launched weapons) and being the most common air-launched version.

#### Preponderance

*The Military Balance* lists USN carriers embarking a total of four or five combat aircraft squadrons (fighter and FGA), reflecting a total of 52–55 aircraft depending on the carrier type. In developing Strike aircraft totals for SD calculations, 34 aircraft were considered available in 1995–1996 and 36 thereafter. This reflects reservation for carrier air defence of either listed dedicated fighter squadrons (one or two equipped with F-14 aircraft from 1996–2005) or two F/A-18 squadron presumed



from 2006, when the F/A-18 FGA aircraft becomes the only combat type listed on carriers. From that date, F/A-18E/F aircraft were presumed when determining payloads for weapon-counting purposes (noting the aircraft's IOC in 2001), before which F/A-18 C/D were presumed.

For target and weapon-total counting purposes, a carrier and escorting cruisers are always presumed to be at stand-off distances from an AO. For SM-2 equipped *Arleigh Burke* units, due to their SAM range exceeding their ASCM range, these ships' SAM totals are included in AAW preponderance calculations. Of note, various US ships are equipped with Mk 41 multi-purpose launchers able to carry mixed loads of various interceptor missiles (SM-2 and *Sea Sparrow* series were classed as interceptors) but not ASCM. The loads utilised were as described in *Janes*, but actual warloads may vary. However, these are of less importance to an aggressor's calculations in comparison to offensive ASCM load, noting a MEZ force is more focussed on its own survival than destroying a SD attacker. Finally, ships' ASW was capability not considered due to being unnecessary for SD missions. The USN CIWS are those listed in *Janes*.

### Modernity

There are no additional notes regarding Modernity for the Philippines or USN.

### Training and Deployment

Due to the limited capabilities of the PN and PAF, these services are not considered as part of the military balance in the SCS. Instead, defence responsibilities are viewed with respect to the USN 7th Fleet. As a major formation for the most powerful military in the world, these forces are taken as having a "good" rating for personnel training.

## Terrain

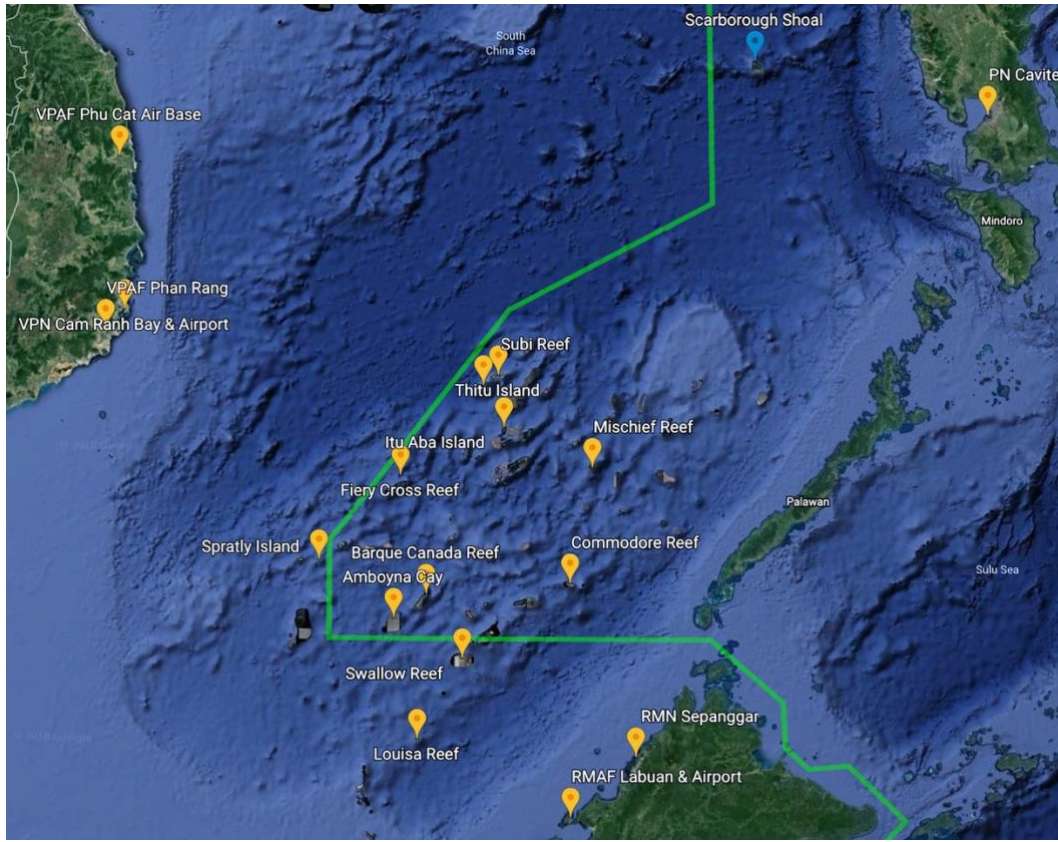
The only terrain where the Philippines is assessed to have an advantage is its CoG at Thitu Island. Otherwise it is neither advantaged or disadvantaged when defending secondary targets such as Commodore Reef or Scarborough Shoal. The terrain of targets for conquest is irrelevant as the Philippines is judged operationally unsuitable to conduct offensive operations.

**Table B13: The Philippines SCS Overview**

	Geographic Feature and Type							
	Scarborough Shoal (Sec B)	Thitu Island (CoG)	Itu Aba Island (CoG)	Commodore Reef (Sec B)	Assorted Spratly (KIG) Features (Various)**			
Claimed	CHN, PHL, TWN,	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, MLY, PHL, TWN, VNM	CHN, VNM			
Controlled	PHL (2012)/CHN +2012	PHL/USN*	TWN	PHL/USN*	Various			
Average Distance Base	340	810	840	910	Various			
Philippine Operational Need	SD CH Pre-2012 / EMEZ	SD TWN Pre-2012	SD - CHN	SD - TWN	SD - VNM	NA	SD - MLY	Various AA/MEZ & EMEZ

*Notes: AO distances from Cavite naval base. Feature Type: CoG: Centre of Gravity; Sec-A: Secondary, Amphibious Assault Possible, Sec-B: Secondary, construction effort or naval patrolling required; N/A: Not Applicable. \*Reflects USN involvement. \*\*Mischief, Subi, and Fiery Cross Reefs (controlled by China), and Barque Canada Reef and Amboyne Cay (controlled by Vietnam).*

Figure B13: The Philippines in the South China Sea Overview



*Notes: Filipino claim highlighted in green. Claims data sourced from CSIS (2013).*

## **Taiwan (TWN)**

### **Territorial Claims and Operational Needs**

Taiwan, as with China, claims the largest area in the SCS. The claim is enclosed within the “nine dash line” shown previously and covers the entirety of the main groups of geographic features in the SCS, that is the Paracel, Spratly and Pratas Islands, Scarborough Shoal and Macclesfield Bank. In these areas, Taiwan has CoG on Pratas Island and at Itu Aba island in the Spratlys, both equipped with small airfields and military outposts. Further, its claims encompass other nations’ CoG at Woody Island and later Subi, Mischief and Fiery Cross Reefs (China), Spratly Island (Vietnam), Thitu Island (the Philippines) and Swallow Reef (Malaysia). For secondary targets, these are at Brunei’s claim to Louisa Reef and China’s at Macclesfield Bank and from 2012 at Scarborough Shoal, once Beijing seized this from the Philippines. In turn, Taiwan’s claims are contested in whole by China; for the entirety of the Spratlys and Paracels by Vietnam; areas of the Spratlys and Scarborough Shoal by the Philippines; and certain areas of the Spratlys by Malaysia and Brunei.

These considerations lead firstly to an operational need for SD to defend Taipei’s key facilities. Further, there is a requirement to conduct AA/MEZ operations to conquer competitors nations’ CoG and EMEZ operations to gain control of Louisa Reef, Scarborough Shoal and Macclesfield Bank. Of note, due to Taiwan and the Philippines sharing the US as a security guarantor, Taipei is considered unlikely to attempt to capture any features controlled by Manila. The nature and location of Taiwan’s main claims against CoG and secondary targets, and its needs against its various competitors, are summarised in [Table B14](#) below. These locations are also shown in the table’s accompanying [Figure B15](#).

### **Forces and Requirements**

To address these needs is the responsibility of those units of the Republic of China Air Force (RCAF) and Republic of China Navy (ROCN) able to reach AO. While these

forces have diverse geographic responsibilities, and are principally tasked with defending Taiwan from China, suitably long-range assets are treated as being able to be applied cohesively to defensive or offensive operational tasks in the SCS. This reflects that Taipei effectively relies on US assistance for the defence of Taiwan (Heginbotham et al., 2015), allowing its own forces (for the purposes of this dissertation) to be allocated to offensive and defensive operations in the SCS. This is reinforced by the short-ranged assets in Taiwan's inventory (numerous FAC and hundreds of combat aircraft), which are all well suited to deterring a Chinese invasion but lack the range to travel to more distant territories and would be reserved for home defence. Thus, even deploying larger naval units would not denude Taiwan of its defences. Treating Taipei's forces as operating cohesively also supports the effective utilisation of the information in *The Military Balance* that does not define how overall forces are split among regions.

#### Excluded Forces

Taiwan's armed forces include various Coastal Defence Cruise Missile assets, being land-based units firing ASCM to defend against invasion efforts. While such forces could be deployed onto Itu Aba to defend against attack, there is no indication such forces have been deployed there (CSIS, 2018c) nor that they can be flown in promptly as opposed to moved by sea. Hence there is no reason for an aggressor to factor in such weapons into their calculations when considering surprise attacks.

Further, US forces that would *likely* defend Taiwan itself in the event of a Chinese invasion attempt are not considered to apply to Taipei's offensive or defensive needs in the SCS. This reflects that the US has a policy of "strategic ambiguity" in whether it would defend Taiwan island. This is argued by Kastner (2006) to both prevent adventurism by Taipei in declaring independence (which might force an attack by Beijing) and also to prevent a pre-emptive attack by the mainland should Taiwan be perceived to be without allies. Noting this ambiguity about the principal island, it is assessed as unlikely that US forces would move to defend Taipei's claimed territories in the SCS on which, as discussed previously, Washington has no

position regarding which nations are the rightful owners. The US is assessed as yet more unlikely to assist Taiwan in conquering disputed islands.

### Range

Regarding issues of distance for the ROCN, the ranges from the main naval base at Zuoying are from around 430 km to Pratas Island to nearly 2,000 km to the Spratlys. All these are well within the capabilities of MSC but constrain the applicability of smaller craft, which in turn could be reserved for any defence of Taiwan itself.

In turn, while the ROCAF has military airfields in the Pratas Islands and at Itu Aba, these lack suitable facilities for support of combat aircraft and instead principally receive supply flights (CSIS, 2018c). As such, offensive or defensive operations would depend on various bases throughout mainland Taiwan, with a principal cluster of four within 30 km of Zuoying naval base and others up to 300 km away. Hence for aircraft, the various AO are between 430 km and 2,300 km distant, with this forming a key limitation for the application of military power.

These locations and selected other nearby features are shown in [Figures B14 and B15](#), with distances between bases and AO summarised in [Table B14](#). For these distances, Zuoying was selected as the representative key base as it is both Taiwan's main naval base and also serves as a convenient proxy location for the bulk of Taiwan's closest airbases to the SCS, from where most air units would deploy.

### **Operational Suitability and Resilience Notes**

There are no additional notes regarding the assessment of Operational Suitability and Resilience with regards to Taiwan. In alignment with the counting rules discussed previously, for SD missions to Pratas Island the shortest ranged aircraft (such as FC-1 *Ching-Kuo* FGA) are considered to be based at Pintung Airbases North and South, and Gangshan and Tainan Air Bases. Longer-ranged units are considered to be based at Chiayi, Taitung, Penghu, Taichung, Hsinchu and Taoyuan Airbases.

For EMEZ missions to Macclesfield Bank and Scarborough Shoal, longer-ranged aircraft are considered to be relocated to the Zuoying region as part of force optimisation noting shorter-ranged platforms lack the reach to travel to these sites. Those FAC of under 500 tons are considered inapplicable to even the shortest ranged Pratas Island scenario due to the need to travel across blue water to reach their destination directly. While such forces could travel along China's coastline to reach a point where Pratas Island is less than 370 km away from the nearest landmass, this would place such units under threat from Chinese Coastal Defence Cruise Missiles.

### **Further Considerations**

#### Asymmetry

For Taiwanese P-3C MARPAT aircraft, AN/APS-134 radar range data (used on some P-3's worldwide) is used instead of information on the fitted AN/APS-115, for which no range data were found. Regarding weapon ranges, based on National Chung-Shan Institute of Science and Technology (2018) and *Janes* reporting, *Jin Chiang* Corvette treated as equipped with *Hsiung Feng – I* (HF-I) ASCM until 2005, then upgrading to HF-II at some two per year until 2012, and HF-III thereafter; *Cheng Kung* Frigates are assumed to be armed with HF-III from 2007. Further, for the single *Hsun Hai* missile Corvette, there is little information on the craft's range, sensors or weapons. An overall range of no less than its predecessor *Jin Chiang* class was presumed, a radar range of 75 km based on internet reporting and the HF-II missile presumed as the most common Taiwanese ASCM.

#### Preponderance

Regarding any effort against Malaysia and Vietnam, for the periods 1995–1996 and 1995–2003 respectively, Taiwan's SM-1 SAM are counted in developing AAW preponderance totals as their 40 km range is greater than every ASuW weapon in Malaysia and Vietnam's air-launched arsenal. This consideration is not relevant to

other nations Taiwan might threaten during this period. This makes the SM-1 highly likely to be able to counter any Malaysia or Vietnamese attack until longer-ranged weapons are introduced in these nations' arsenals. Also, further to commentary in *Janes*, the SM-1 and SM-2 missiles are classed as ASCM-interceptor capable.

Taiwanese CIWS are as listed in *Janes*.

### Modernity

The bespoke term “*Ching Yang II*” is used to describe the 6 upgraded and modern *Ching Yang* Frigates compared to the original outdated versions.

### Training and Deployment

Little open-source information is available on the extent and nature of the ROCN and ROCAF training and deployment activities. However, the forces benefit from an advanced and wealthy economy, able to support substantial exercises such as annual Han Kuang multi-service war games (Asia Times, 2018). Further, the ROCN conducts regular deployments and supply sorties to the Taiwanese outpost on Itu Aba island, over 1,500 km away (Wu, 2017). Based on the high technical standard of Taiwanese equipment, requiring extensive personnel training to use effectively; the nation's well-funded defence capabilities and complex exercises; together with demonstrated capability to repeatedly deploy to the SCS, the ROCN and ROCAF are rated as “Good” for Personnel.

### Terrain

The Taiwan has terrain advantage at its CoG at Pratas and Itu Aba Islands. It is disadvantaged when conquering adversary CoG, and neither advantaged or disadvantaged when conquering secondary targets such as Scarborough Shoal.



**Table B14: Taiwan SCS Overview**

	Geographic Feature and Type													
	Pratas Island (CoG)	Scarborough Shoal (Sec B)	Macclesfield Bank (Sec B)	Woody Island (CoG)	Subi Reef (Sec B/A)	Thitu Island (CoG)	Itu Aba Island (CoG)			Mischief Reef (Sec B/A)	Fiery Cross Reef (Sec B/A)	Spratly Island (CoG)	Swallow Reef (CoG)	Louisa Reef (Sec B)
Claimed	CHN, TWN	CHN, PHL, TWN	CHN, TWN	CHN, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM			CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, TWN, VNM	CHN, MLY, TWN, VNM	BRN, CHN, MLY, TWN, VNM
Controlled	TWN	PHL (2012)/CHN	CHN	CHN	CHN	PHL	TWN			CHN	CHN	VNM	MLY	N/A
Distance from Bases (Zuoying)	420	870	950	1050	1430	1450	1500			1500	1650	1800	1830	1960
Taiwanese Operational Need	SD	EMEZ	EMEZ	AA/MEZ	EMEZ - AA/ MEZ	N/A	SD - CHN	SD - PHL	SD - VNM	EMEZ - AA/MEZ	EMEZ - AA/MEZ	AA/MEZ	AA/MEZ	EMEZ - BRN

Notes: AO distances from Zuoying naval and air bases. Feature Type: CoG: Centre of Gravity; Sec-A: Secondary, Amphibious Assault Possible, Sec-B: Secondary, construction effort or naval patrolling required; N/A: Not Applicable.

Figure B14: Taiwan Bases Overview

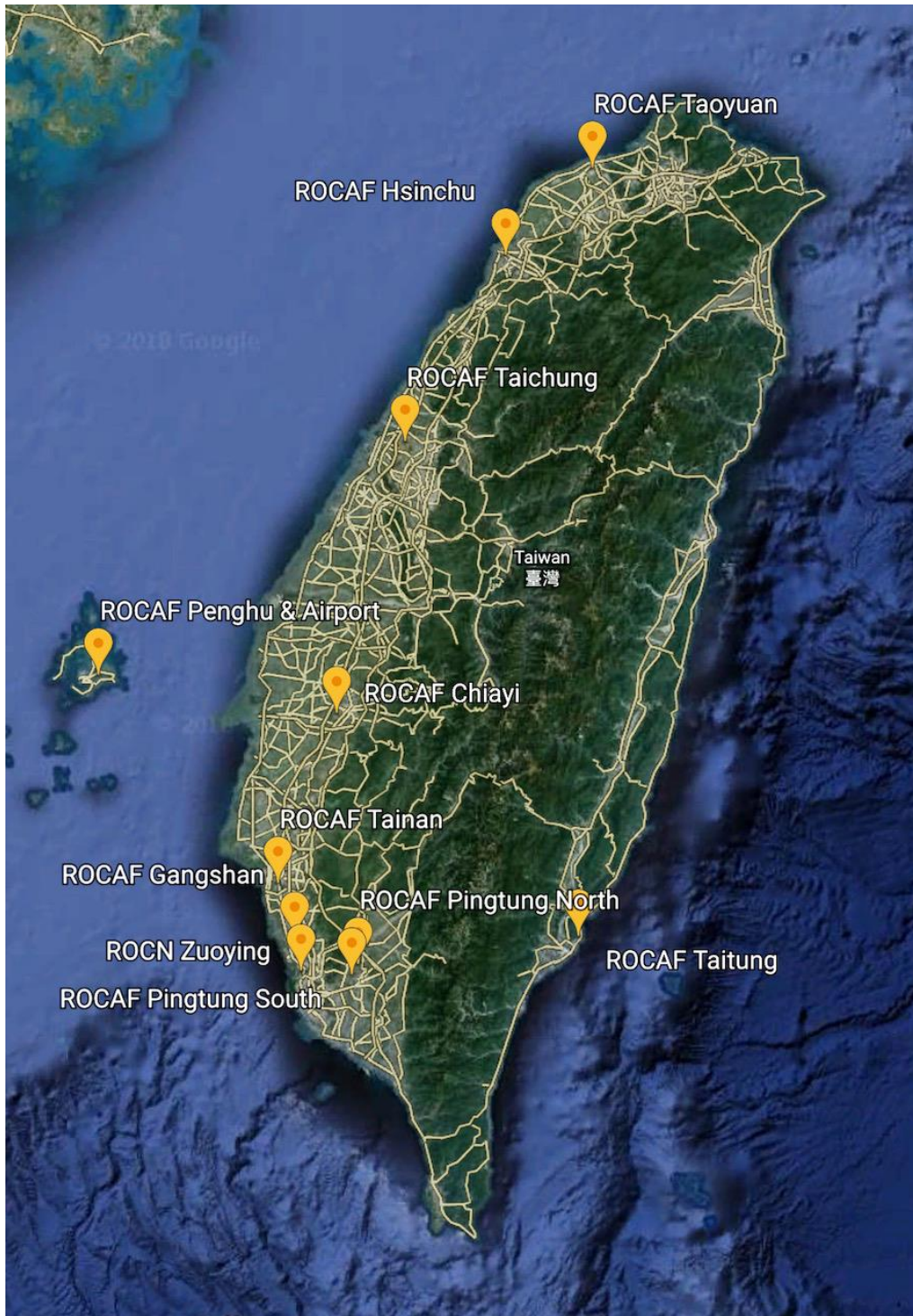
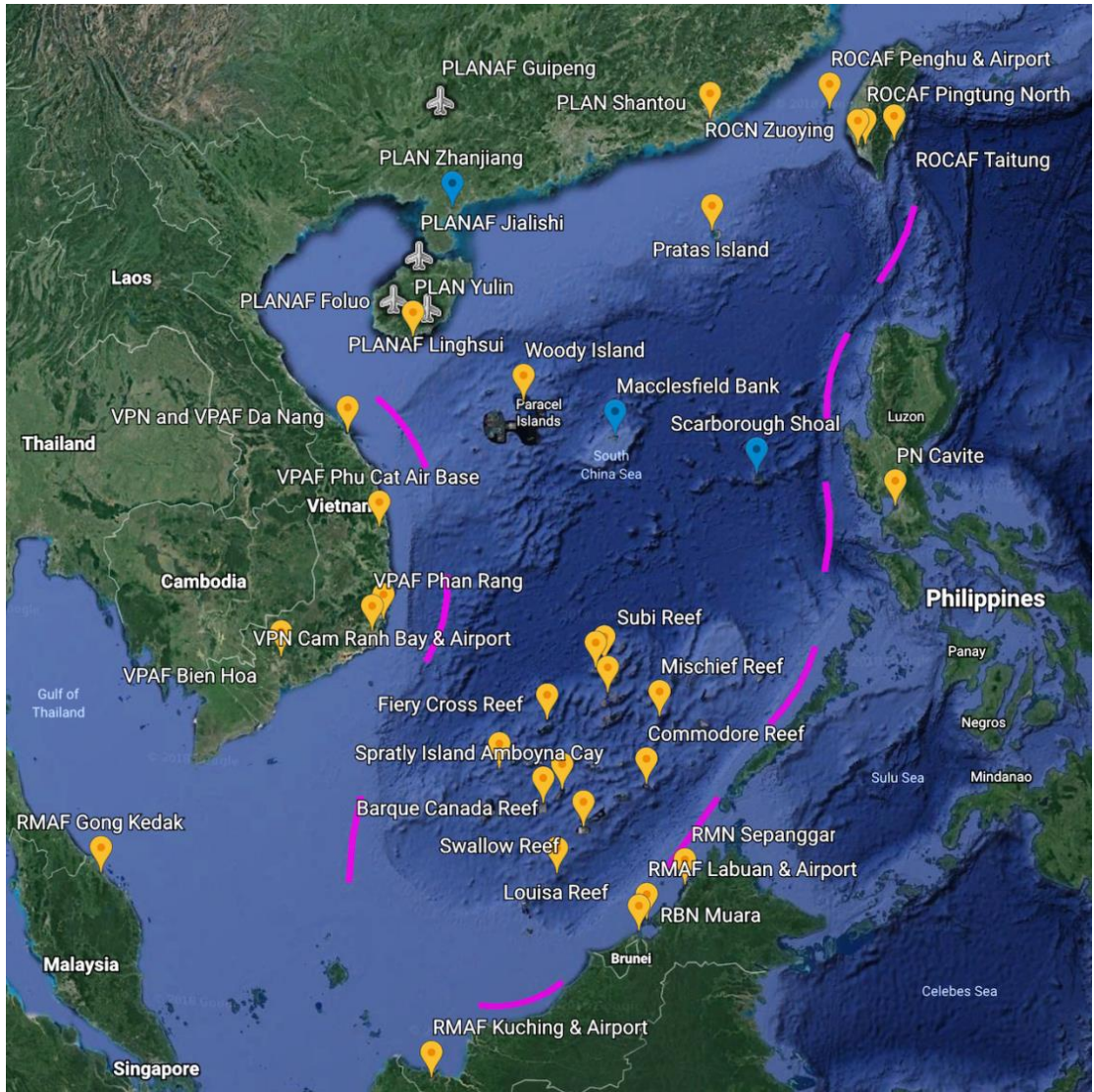


Figure B15: Taiwan in the South China Sea Overview



Notes: Taiwanese claim highlighted in pink. Claims data sourced from CSIS (2013).

## Vietnam

### **Territorial Claims and Operational Needs**

Vietnam claims the entirety of the Paracel and Spratly Islands in the SCS (Pedrozo, 2014). Within these areas, Vietnam has occupied some 27 different features in the Spratlys, with its CoG being Spratly Island, which hosts an airbase and small port, and has received substantial upgrades between 2015–2017 (CSIS, 2018c). Vietnam's claims also encompass other nations' key facilities at Woody Island and later Subi, Mischief, and Fiery Cross Reefs (China); Thitu Island (the Philippines), Itu Aba Island (Taiwan); Swallow Reef (Malaysia); and Brunei's claim to Louisa Reef. In turn, Vietnam's claims are contested in whole by China and Taiwan, and for certain areas of the Spratlys (but not including Spratly Island) by the Philippines, Malaysia and Brunei.

These considerations lead firstly to an operational need for SD to defend Spratly Island together with smaller features claimed by Malaysia, Brunei and the Philippines (although of the latter only Amboyna Cay and Barque Canada Reef are examined). Further, there is a requirement to conduct AA/MEZ operations to conquer competitor nations' CoG and EMEZ operations to control Louisa Reef.

The nature and location of Vietnam's main claims against CoG and secondary targets, and its needs against its various competitors, are summarised in [Table B15](#) below. These locations are also shown in the table's accompanying [Figure B16](#). The only features not shown are the various secondary features claimed by Manila due to the Philippines being operationally unsuitable to acquire these by force. Of note, this figure uses data drawn from CSIS (2013) whereas in reality Vietnam claims *the entirety* of the Spratly Islands but has never defined the extent of its asserted territory on a formal map. Hence the border shown in reality would include other features shown, such as the Commodore, Louisa, and Swallow Reefs.

## **Forces and Requirements**

To address these needs is the responsibility of the Vietnamese People's Navy (VPN) and Vietnamese People's Air Force (VPAF). While these forces have diverse geographic responsibilities, they are treated as being able to be applied cohesively to defensive or offensive operational tasks in the SCS. This reflects both Vietnam's lack of other equally critical maritime disputes, which might otherwise draw these forces away in times of confrontation, and the limited size of the VPN and VPAF in total, requiring a concentration of effort to maximise chances of operational success. This also supports the effective utilisation of the information in *The Military Balance* that does not define how overall forces are split among regions.

One exception is made to the counting rules generally applied, which is the inclusion of Petya class Frigates for Vietnam. While these cannon-armed ASW assets lack the capabilities to contribute to SC effectively, they are included as they form the only ship-based anti-submarine assets available Vietnam. Hence they would almost certainly be included in MEZ efforts to provide some support to ASW in addition to serving as additional targets for ASCM. Due to their lack of armament they are not counted towards assessments of Operational Suitability or Resilience, and instead only as targets for Preponderance calculations. Such ships are also not included at all for SD missions where they lack the armament to contribute.

### Excluded Forces

Vietnam's armed forces include various Coastal Defence Cruise Missile assets, being land-based units firing ASCM to defend against invasion efforts. While such forces could be deployed onto Spratly Island to defend against attack, there is no indication such forces have been deployed there (CSIS, 2018c) nor that they can be flown in promptly as opposed to moved by sea. Hence there is no reason for an aggressor to factor in such weapons into their calculations when considering surprise attacks.

## Range

On issues of range, these of course relate to the Paracels, where Vietnam would seek to reconquer these islands, and the Spratlys where Vietnam must both defend and assert various claims. In contrast to every other nation considered by this dissertation, for Vietnam it is the VPN that is most affected by range considerations due to most of its assets being judged unsuited to venturing over blue water (i.e., 370 km or more of straight-line open ocean distances). The VPN's closest major base to the Paracels is at Da Nang, which while some 450 km away from China's main outpost at Woody island is only 350 km distant from the islands' nearest geographical features and shallow water. Hence this base affords access to the region by all Vietnamese craft, including missile armed FAC, without the need to venture into blue water. For the Spratlys, the closest major base is at Cam Ranh Bay, between 480 km and 750 km distant from the main disputed features spread throughout the islands. Due to these distances, Vietnamese FAC are judged unable to reach this area but larger vessels are unaffected.

Regarding the VPAF, while the service has major bases across Vietnam, primary facilities close to the Paracels are at Phu Cat and Da Nang, both located some 450 km from Woody island. In turn, Phan Rang air base, close to Cam Ranh Bay, is some 470 km–750 km from the main disputed features spread across the Spratlys, with Bien Hoa air base being some 670 km–950 km distant. Cam Ranh Bay International airport was also considered able to support VPAF operations in the Spratlys, with distances as per Phan Rang. These ranges form the main constraint to the application of VPAF air power.

The locations discussed above, together with selected other nearby geographic features, are shown in [Figure B16](#) below. Distances between bases and AO are summarised in [Table B15](#). Representative bases used are the closely co-located VPAF and VPN Da Nang bases for Paracel Island scenarios and VPN Cam Ranh Bay for the Spratlys, noting that for Vietnam range is a greater constraint on naval than air forces.

## **Operational Suitability and Resilience Notes**

Regarding Operational Suitability and Resilience assessments, Vietnam's Ka-25/28 ASW helicopters are not counted due to having insufficient range to support any AO from shore and the VPN lacking facilities to embark helicopters. This restricts Vietnam's ASW MEZ capability to four Be-12 MARPAT aircraft. Also, while the VPAF lacks ASCM until 2007, *SIPRI* indicates AS-10 missiles were procured for the Su-22 from the early 1980s, and potentially AS-14 from 2004. While both are generic Air-to-Surface Missiles, nothing prevents their use against ships, so these weapons allow VPAF platforms to be counted for Suitability and Resilience purposes.

Regarding aircraft basing, for Woody Island MEZ scenarios, until 2012 Mig-21 units are considered to be based at Da Nang and Phu Cat, with Su-22 at Cam Ranh and Su-27/30 at Phan Rang. This supports the maximisation of preponderance through using the large quantities of shorter-ranged Mig-21 assets from these nearby bases. From 2013, with the steep decline in Mig-21 numbers, these and Su-22 units are considered based at Da Nang, with Su-22/27/30 at Phu Cat. For missions involving MEZ at Fiery Cross Reef, Mig-21s are considered to be based at Cam Ranh and Phan Rang, Su-22 at Phu Cat, and Su-27/30 at Bien Hoa until 2012. Again, this serves to maximise preponderance through use of Mig-21 airframes. From 2013, Mig-21 and Su-22 units are considered based at Cam Ranh, with Su-22/27/30 at Phan Rang.

## **Further Considerations**

### Asymmetry

There are no additional notes regarding Asymmetry for Vietnam.

### Preponderance

The 9M311 missile on Vietnam's *Gepard* class frigates is the only missile classed as being an interceptor, as discussed in *Janes*. Vietnamese CIWS are as listed in *Janes*.

## Modernity

There are no additional notes regarding Modernity for Vietnam.

## Training and Deployment

Information on the Vietnamese armed forces, including the VPN and VPAF, is difficult to acquire both due to the secrecy associated with most Vietnamese military details and the lack of English-language sources (Grossman, 2018). However, some information is still available. Goldrick and McCaffrie (2013, pp. 193–211) noted that the VPN has remained substantially underfunded across its history, including in the 1990s needing to cannibalise up to 50% of some of its units' equipment to enable the other half to function (p. 206). Such limitations can only adversely affect training and deployment activity. This was exacerbated by the 2005 decrease in the minimum military service time for personnel to two years, reducing the potential to both sufficiently train personnel and then benefit from their service as suitably professional staff (p. 209). The VPN also engages in only limited exercises, such as simplistic occasional training with the USN (LaGrone, 2015).

The VPAF has suffered from a similar lack of resourcing and personnel training, with pilots apparently achieving only 65–100 flying hours per year; perhaps one-third of those of USAF pilots. The outcome of this situation has been a lack of capability, with the VPAF for example losing a fighter aircraft in 2016 and then losing a maritime patrol aircraft sent to search for it (Grossman, 2018, p. 125). As a result of these considerations, Vietnam's Personnel rating is "poor" across 1995–2015.

## Terrain

The only terrain where Vietnam is assessed to have an advantage are its CoG at Spratly Island and its secondary outpost at Amboyna Cay. It is disadvantaged when faced with conquering adversary CoG, and neither advantaged or disadvantaged when conquering or defending secondary targets such as Louisa Reef.

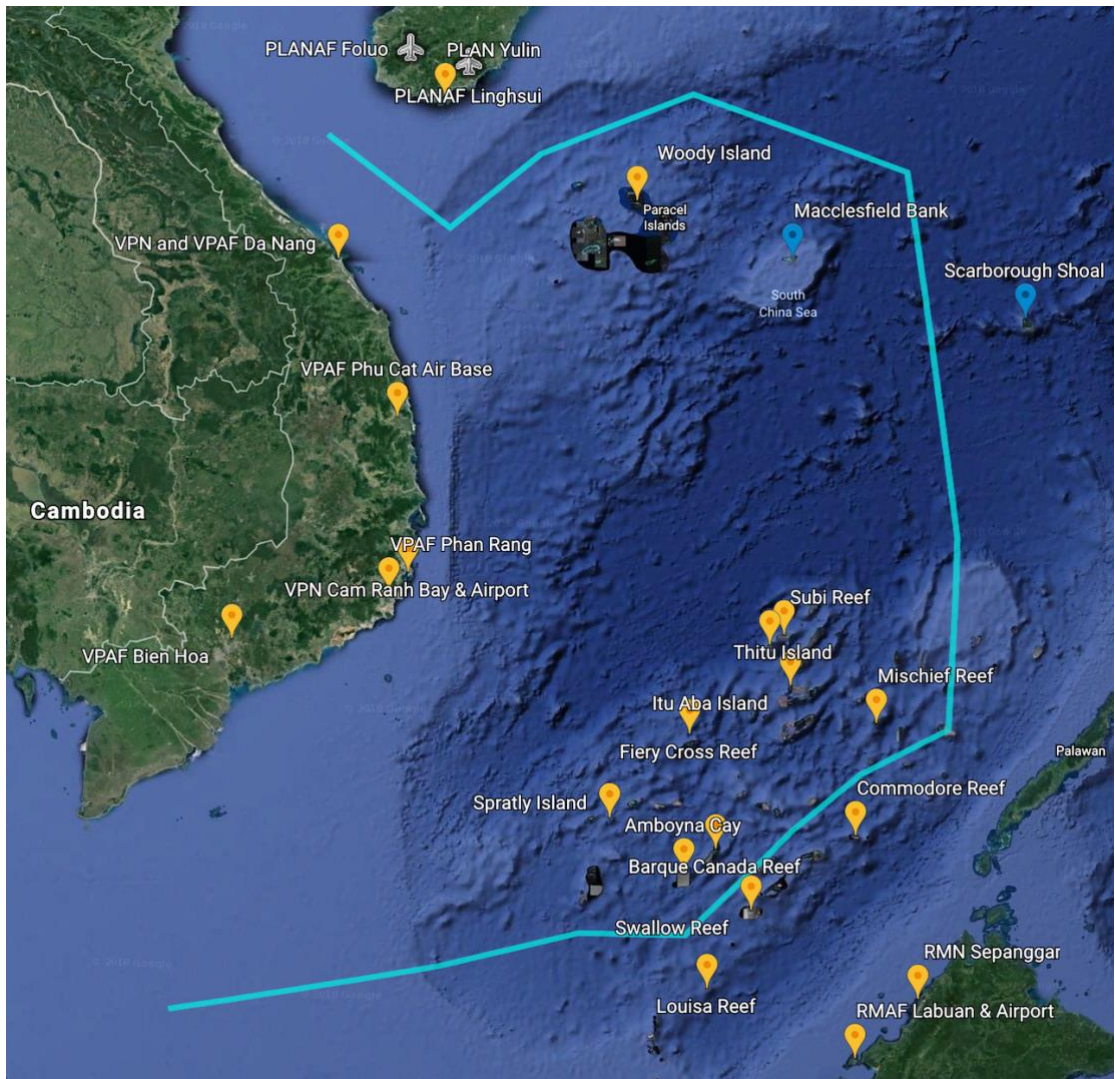


Table B15: Vietnam SCS Overview

Geographic Feature and Type														
	Woody Island (CoG)	Spratly Island (CoG)		Fiery Cross (Sec B/A)	Subi Reef (Sec B/A)	Thitu Island (CoG)	Itu Aba Island (CoG)	Barque Canada Reef (Sec B)		Amboyna Cay (Sec A)		Swallow Reef (CoG)	Mischief Reef (Sec B/A)	Louisa Reef (Sec B)
Claimed	CHN, TWN, VNM	CHN, TWN, VNM		CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, MLY, TWN, VNM		CHN, MLY, TWN, VNM		CHN, MLY, TWN, VNM	CHN, PHL, TWN, VNM	BRN, CHN, PHL, TWN, VNM
Controlled	CHN	VNM		CHN	CHN	PHL/USN*	TWN	VNM		VNM		MLY	CHN	N/A
Distance from Bases	450	460		480	540	560	590	600		610		700	730	750
Vietnamese Operational Need	AA/MEZ	SD - CHN	SD - TWN	EMEZ - AA/MEZ	EMEZ - AA/MEZ	AA/MEZ	AA/MEZ	SD - MLY	SD - PHL	SD - MLY	SD - PHL	AA/MEZ	EMEZ - AA/MEZ	EMEZ

Notes: Woody Island distances from Da Nang bases, Spratly distances from Cam Ranh Bay bases. Feature Type: CoG: Centre of Gravity; Sec-A: Secondary, Amphibious Assault Possible, Sec-B: Secondary, construction effort or naval patrolling required; N/A: Not Applicable.

**Figure B16: Vietnam in the South China Sea Overview**



*Notes: Vietnamese claims as illustratively shown by CSIS (2013) shown in blue. In reality Vietnam claims the entirety of the Spratly group including Commodore, Swallow and Louisa Reefs. Claims data sourced from CSIS (2013).*

### **Section III: The Military Power Dataset**

The MPD comprises some 215,000 cells of information. It draws on the material in the CAR, together with relevant quantitative and qualitative data from *Janes, The Military Balance* and other sources, to conduct Steps Two to Five for the six SCS claimant states. The MPD also contains the summary-level Structural Realist behaviour predictions for the four theories under consideration. Both the overall power assessment and behavioural predictions are reported in long-form in the final section of the CAR.

In assessing the interactions of six states (seven, including the US), and thus 15 dyads, across 21 years, the MPD contains and generates 315 dyad-years' worth of data and analysis. Its end result is 1,371 individual integrated operational assessments of the balance of power between dyads, and then generation of consequent predicted behaviours for each party. These assessments are based on comparing each pair of nations' capabilities across the seven military power factors at 15 AO, considering the capabilities and interactions of over 115 major military asset classes, located at 29 military bases, and involving 70 sensor and 70 weapon systems.

While the reader is welcome to request a copy of the MPD to review at their leisure, this section provides an overview of the document to describe its operation and situate the following discussion of results. The MPD itself is comprised of six Excel Workbooks, one for each claimant nation. Regarding the workbooks, each contains between 25 and 35 individual spreadsheets organised into five broad categories: Capabilities, Distances, Yearly Summaries and Operational Assessments, Location-based Military Power Assessments, and Integrated Assessment Summaries. These various categories are now discussed below.

## Capabilities Sheet

This sheet lists the military-power-relevant technical characteristics for each SCS-applicable platform type that became a part of a nation's arsenal over the 21-year period. The sheet also captures the outcomes of a manual assessment of which operational needs each asset can support (ASuW, ASW, AAW) and whether it can achieve a MEZ in any of these domains either individually or only in cooperation with others. Finally, the sheet captures the outcomes of a manual assessment of which broad operational regions each asset can support. The above information is used in subsequent sheets to identify which assets and capabilities states can project to each AO, information which forms the basis of the military power assessments at these locations.

Each sheet begins with an introductory set of notes that describe its contents, any acronyms used, and any particular considerations of the data presented as affected by the counting rules described in the CAR. Then, for every asset class<sup>345</sup> the sheet contains a table capturing its key data including class name, type (such as Fighter or FAC), modernity assessment, tonnage and range (for vessels) or SD and MEZ combat radius (for aircraft). This is supported by further information on its key weapons and sensors, including their names, ranges, effective weapon ranges, and any specialised capabilities such as whether a SAM can serve as an ASCM interceptor. A platform's typical war-load is also listed, focussing on the missile armament that is the key criterion for inclusion in the MPD as a useful asset.<sup>346</sup> As noted previously, where a weapon and asset were both held in national inventories and could be used together to achieve a capability effect, then this was presumed to occur, and the weapon listed as part of the platform's war-load. As also discussed above, where sources provided various combat radii or war-loads for single

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<sup>345</sup> Such as J-11 class Fighter, or *Kee Lung* class Destroyer. Specific individual assets within classes are not considered as platforms of the same class almost always have very similar characteristics.

<sup>346</sup> In alignment with the notes in the CAR, gun-armament is generally excluded and ships' short-ranged ASW torpedoes and sensors are listed for illustrative purposes although these do not contribute to forming ASW MEZ perimeters. These and other issues are captured in the Capabilities Sheet introductory notes.

platforms, the author's judgement was used to select the most appropriate figures.<sup>347</sup> Any relevant asset specific notes are listed beneath its entry, such as regarding idiosyncratic counting rule decisions, payloads or capability assumptions. General classes of assets (such as Destroyers, Frigates, or bombers) are grouped in columns for ease of reference.

As noted above, each table also contains an assessment of which operational needs the platform can support based on the key requirements listed in the CAR for the asset type and mission. For example, to generate an AAW MEZ, ships with SAM of less than 30 km range cannot contribute to this mission, 30–49 km range SAM can contribute cooperatively, while those with 50 km or greater range SAM can individually generate an appropriate effect. Such criteria were applied to each asset's listed weapons and sensors to determine what effects it could generate. Each table also includes a broad manual assessment of which AO an asset class could support, conducted in the manner described previously. In short, average distances from key bases to AO were drawn from the CAR, and minimum ranges developed for naval and air SD and MEZ missions. These were compared to asset ranges or combat radius to develop a broad indication of which groups of features an asset could support. This served suitably for naval assets (as these generally have ranges far greater than the minimum required distances) but more specific calculations were required for aircraft, which are captured in the separate distances sheet.

In terms of *what* assets and weapons were in national inventories over 21 years, *The Military Balance* was the primary resource used although the *SIPRI* arms transfer database and various *Janes* sources also provided useful information. Information on *when* each system entered service is addressed in the yearly summary sheets discussed below.

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<sup>347</sup> For example, FGA aircraft can carry all AAM, all ASCM or mixed payloads. As noted in the CAR, such aircraft were presumed to carry mixed payloads. Or where different sources conflicted, those with the most congruence and detail were preferred.

In terms of *individual platform information* (such as range) primary data was drawn from the specific entries for these assets in the online 2018 editions of, for aircraft, *Janes Aircraft Upgrades* and *Janes All the World's Aircraft*; and for ships and submarines, *Janes Fighting Ships*. Where *Janes* lacked suitable information, or the data provided clearly conflicted with more detailed and credible other reporting, then secondary sources were used, with this noted in individual entries.

Primary naval weapons and sensor range data were drawn from, respectively, the specific entries for these systems in the online 2018 editions of *Janes Weapons: Naval* and *Janes C4ISR & Mission Systems: Maritime*. Primary air weapons and sensor range data were drawn from, respectively, *Janes Weapons: Air Launched* (2015–2016) and *Janes C4ISR & Mission Systems: Air* (2016–2017). Where *Janes* lacked suitable information, or the data provided clearly conflicted with more detailed and credible other reporting, then secondary sources were used. An overview of system types, ranges and data sources (with these sources also listed in the bibliography) is presented in the MPD Sensor and Weapon Summary, available upon request separately.

### **Distances Sheet**

This lists the key ranges between a claimant nation's relevant military bases and AO and the operational need it has at each location. It also provides summary information affecting aircraft numbers and types at these areas. This data is used in subsequent sheets to develop totals of assets and capabilities at each AO.

Each sheet contains two tables. The first lists key locations, distances and operational needs drawn from the specific country entry in the CAR. Where assets are located at different bases for range purposes, multiple rows are used to indicate the different key distances applicable to the various bases when aircraft are consistently deployed to different locations. Otherwise such differences are discussed in notes either in or beneath the tables.

The second table, for each aircraft type in a nation's inventory over the 21-year period (drawn from the capabilities sheet), captures its availability and circuit-number for each AO, calculated in the means discussed in the CAR Section II. As a brief summary, availability was judged by comparing any aircraft's combat radius to the range requirement, i.e., twice the straight-line base-to-AO distance.<sup>348</sup> Where this was not met, the distances sheet shows no aircraft of that type can be present at that particular location. This calculation was most relevant to SD missions. At AO where MEZ requirements existed and a specific aircraft type was determined to have the range to reach it, the type's circuit-number for that location was calculated and listed as a "divisor". As discussed previously, the circuit-number is the manually calculated figure identifying how many of an aircraft type are required to be available for one to be permanently loitering at a location. In subsequent sheets, a nation's total inventory of a particular type is divided by this number to identify the quantity of such aircraft it is able to have persistently present at an AO in a particular year. Of note, such calculations are not conducted for ships as these almost always had more than sufficient range to reach all needed locations in the SCS. Finally, short notes describing acronyms used are located beneath the tables.

### **Yearly Summary Data and Operational Assessments Sheets 1995–2015**

These describe the annual military assets and capabilities available to the claimant nation at each contested location as its armed forces develop. Each sheet records one year of analysis. This data is used to make stand-alone assessments of Operational Suitability and Resilience, together with gathering the information required to conduct analyses of the comparative military power factors in subsequent sheets.

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<sup>348</sup> As discussed in Step Two, in terms of base locations shorter-ranged assets were presumed to be located at closer bases, optimised based on AO and scenario needs.

Each sheet is comprised of table, split into two parts, that conducts all relevant analysis for a single year. The first part of the table lists all the SCS-relevant military platforms in a state's inventory in a particular year, grouped into classes and including a note as to whether each class is modern. These initial figures are multiplied by two-thirds (0.66) or one-third (0.33) as appropriate to generate overall total forces available in AA/MEZ and SD or EMEZ situations. By comparing the numbers of platforms to their weapon and sensor data listed in the capabilities sheet, initial totals are also developed for overall numbers of weapons and targets produced by national inventories (affecting calculations of Preponderance). Further, the longest ranged AAW, ASuW, and ASW capabilities are also identified, affecting calculations of Asymmetry. Asset totals and capabilities are then tallied, further to the rules described in the CAR, to develop overall assessments of Operational Suitability and Resilience for an entire national force for each mission type. In practice, these various calculations are conducted by embedded Excel formulas.<sup>349</sup> Finally, the first part of the table lists the rating for personnel quality for that year, drawn from the CAR, which of course is presumed to be generalised and hence applicable to all forces at all operational locations.

The second part of the table lists for each AO its key distance from the claimant's bases and the capability effects the nation must generate to achieve its objectives. These are drawn from the country data analysis conducted in the CAR. By applying range constraints at each AO, including aircraft divisors for MEZ operations, the overall forces identified in the first part of the table are appropriately reduced to identify the specific applicable forces at each operational location.<sup>350</sup> These units'

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<sup>349</sup> The exception is Brunei, where due to the limited number of assets involved it proved more straightforward to manually calculate totals.

<sup>350</sup> As discussed previously, in developing totals of military equipment frequently there were instances where rounding was required to deliver whole numbers. This resulted from applying percentages of 0.66 or 0.33 to equipment totals, in addition to further applying divisors where necessary to identify aircraft available to enforce MEZ. In general, standard conventions were applied (i.e., 0.4 and below was rounded down, 0.5 was rounded up) to reflect the number of assets generally expected to be available. Exceptions were made when such an approach was insensible, such as where only a single aircraft was available for MEZ enforcement and a minimum of two were required to have an asset permanently on station. Dividing one by two (0.5) would here be rounded down to zero (reflecting no potential for permanent enforcement) rather than up to one.



capabilities are then assessed, again using the counting rules from the CAR transformed into appropriate Excel formulas, to determine which operational effects they can generate and how robustly. For example, a state may be dependent on having four ships with 40 km range SAM to generate an AAW MEZ, and have five such vessels in total, with the loss of two ships thus rendering it operationally unsuitable. These needs are captured in appropriate formula that firstly check that the state can indeed have at least four vessels at the AO (if so, and it meets other requirements, it is operationally suitable); and secondly assign an appropriate resilience number. In this situation, if the state can project all five ships, and is not dependent on any more limited critical assets, the number is two. Hence these formulae generate assessments for Operational Suitability and Resilience for the state at that location.

The second part of the table also, for comparative factors data at each AO, conducts appropriate Preponderance and Asymmetry calculations in the same manner as was done in part one of the table. For Modernity, each asset class available at a location can have its practical modernity note referred to; and training levels are reflected in the training rating listed in the first part of the table. Finally, at each location a note is made, drawing on the country assessment in the CAR, of whether the terrain in the area provides advantage, disadvantage or neither to the state.

The two sections of the table thus, together, provide all the information necessary to conduct military power assessments when the appropriate data *from two nations' annual sheets are compared*; which is done in later sheets. Information is available for all seven of the military power factors at each AO: Operational Suitability, Resilience, Asymmetry, Preponderance, Modernity, Training and Terrain.

More detailed information on how each yearly sheet is organised, including in terms of individual rows and columns, the meanings of acronyms, and how to access formulas, is contained in a set of notes at the foot of the 1995 table for each

country. These notes also address any country-specific issues, including copying the military-power-factor relevant data discussed in the country entries in the CAR.

Regarding information sources, ORBAT data was drawn principally from *The Military Balance*, although various *Janes* publications and the SIPRI arms transfer database were also used. Where sources disagreed, while *The Military Balance* was generally preferred, the most detailed source with the most congruence with other reporting was used in some instances. Any instances of specialised considerations are provided in notes at the bottom of each 1995 sheet in the MPD.

### **Location-based Military Power Assessment Sheets**

These sheets provide, for the claimant state at each operational location, 21 years of Integrated Assessments and Structural Realist behavioural predictions. This is done by drawing on all the previous information in the MPD to conduct military power assessments. Each contending nation has one sheet of this type for every AO, named after the particular location (such as Woody Island) and the country's operational objective there (such as AA/MEZ). Of course, as nations have different numbers of AO, the numbers of sheets will vary too in each Workbook.

### **Aggressor Sheets**

For locations where nations are identified as potential aggressors, each sheet is principally comprised of a single large table where a full annual military power assessment is conducted. This is done through applying the 5-7-7 model's Steps Two-to-Five against information drawn from each state's (one defender, one aggressor) yearly summary data. This generates Comparative Assessments, Action Summaries and then Integrated Assessments from the perspective of the attacker for every year between 1995 and 2015. For example, each nation's AAW, ASuW and ASW weapon and target numbers at an AO are compared to deliver a Comparative Assessment of whether the aggressor has relative advantage, disadvantage, or

neither in Preponderance. This process is completed for all the military power criteria to provide an Action Summary showing the aggressor's relative advantage across all the factors.<sup>351</sup> This is then turned into a final Integrated Assessment of the potential attacker's relative military power, moderated by the analyst's judgement. A description of how individual cells, columns and rows operate is provided in a brief set of notes at the base of the table for the first AO where a state is a potential aggressor or defender.

Located beside the Integrated Assessment, each sheet provides a written description of why the particular rating was chosen, including any qualitative factors further to those described in the CAR. Such explanations are provided for aggregated periods where power ratings were judged to be the same. For example, a five-year period of rough parity is provided a single explanatory paragraph, with an updated explanation provided when the power level changes; this new explanation applies until the power balance alters yet again.

Collocated with the description of each aggregated period is a Structural Realist behavioural prediction table. This has the behaviours predicted by the various theories highlighted as appropriate based on the Integrated Assessment power level.

### **Defender Sheets**

For AO where a state is a defender, only its Integrated Assessment is listed, with this being the reverse or mirrored rating to the power level of the relevant potential attacker. For example, if the aggressor's rating is Advantaged Parity, then the defender's is Disadvantaged Parity, and so on. Listing only the reverse rating is based on the previously discussed presumption that all nations apply the military power model equally effectively and reach the same conclusions. Hence it would be

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<sup>351</sup> In practice, where calculations were required to determine ratings (such as when assessing Preponderance, Asymmetry, or Modernity) this was conducted by embedded Excel formulas.

nugatory to repeat the power assessment from the perspective of both nations. This approach also provides presentation benefits as, of course, a defender can be faced by many potential attackers and have different power ratings against each. Through only listing the Integrated Assessment, this provides room for multiple country-ratings to be presented cogently on a single sheet, providing a realistic picture of the state's position. As a further efficiency, aggregated Integrated Assessment ratings are shown: if a state's position against another country is the same for many years, this is shown once for the entire block of time. Another rating is only shown when its position in the balance of power changes.

Collocated with these various Integrated Assessments, a general Structural Realist behavioural prediction table is also included. This allows the reader to identify the behaviours predicted by the various theories based on the differing power ratings that the claimant state has with respect to each potential competitor.

Long-form discussions of the Integrated Assessments and their associated behavioural predictions are provided in Section IV of the CAR below. These are also summarised in Chapter Six of the dissertation.

### **Integrated Assessment Summary Sheets**

Drawing on all the Integrated Assessments for the various AO, this sheet contains a table providing a summary of the claimant state's power ratings in every location, against every competitor, across the 21-year period. These summary tables are also presented in Chapter Six.

## Section IV: Long-Form Power Assessments and Structural Realist Predictions

Based on the information contained in the MPD, the below section provides a prose summary of key developments for each nation over the 1995–2015 investigation period. Similarly to this Annex’s Section II, the information is presented here under three headings that respectively describe for each nation how its forces developed over time, how its position in various balances of power changed, and how these balances lead to differing sets of predicted behaviours under the various theories:

- *Operational Assessment and Force Development Overview.* This describes how a nation’s armed forces have evolved over the 21-year period in terms of meeting its operational needs, with particular references to changes in Operational Suitability and Resilience while noting any relevant territorial effects. This section also discusses key equipment changes and other developments that have driven the results as presented.
- *Integrated Assessment Overview.* This discusses how a state’s position in the balance of military power has changed over time with respect to its various competitors at each contested location and overall. This section aggregates periods when there were no substantive shifts in power (frequently for many years) while highlighting those instances when a nation changed its power grade from inferiority, rough parity, or clear superiority. This is because changes of this magnitude are those expected under DR(GS), DR(GLS), OR and PTT to lead to different behaviours and are hence most relevant to this study. The driving causes of changes are also addressed, focussing in particular on the comparative military power factors of Asymmetry, Preponderance, Modernity and Training.
- *Predicted Behaviours.* This section provides descriptions of predicted national behaviours under the theories for how each state will act towards its competitors at the AO across the 21 years under investigation. These

predictions are based on the various theories' expectations based on the state's power position, which was determined in the Integrated Assessments.

Predictions are provided both for the behaviours states should initiate and how they should respond at each contested location. For every nation, the entry focusses on periods of continuity (aggregated into blocks of time) and large-scale changes in national power that should reflect consistent or shifting behaviour under the theories. Focussing on continuity and major change reflects both that national power rankings often did not alter for many years and that when they did (particularly among the grades of rough parity) these variations were not significant enough to, under the theories' predictions, result in identifiably different behaviours. For the same reason, no reference is made to generic control-increasing activities expected from all state-types.

For ease of reference, each entry also contains a copy of the relevant Integrated Assessments Summary sheet, which is also included in the respective summaries in Chapter Six.

## **Brunei**

### **Operational Assessment and Force Development Overview**

Brunei's armed forces are assessed as being operationally unsuitable between 1995–2015 to achieve its EMEZ objectives but suitable for its SD tasks. This reflects that of the four other nations claiming Louisa Reef, all possess air assets they can use to attack the area, to which they can add (at various times) surface and also submarine assets. Hence to defend against these Brunei needs to be able to conduct AAW SC, together with potentially ASUW and ASW SC also. As neither the RBAF or RBN have any air defence or anti-submarine capability, Brunei is fundamentally unable to enforce the EMEZ. However, the RBN does have a reasonably effective ASUW capability, allowing it to credibly threaten other forces that seek to impose their own EMEZ at Louisa Reef.

In more detail, Brunei's Order of Battle (ORBAT) across the period is three *Waspada* class FAC during 1995–2010, with these replaced by three *Darussallam* Offshore Patrol Vessels from 2011–2014, with a fourth added that year. All of these vessels are armed with ASCM, enabling a SD capability, but none have AAW or ASW capabilities. And as noted above, the RBAF has no combat aircraft so can contribute no relevant assets to a Louisa Reef contingency.

Due to this small ORBAT Brunei's rated Resilience remains weak at two vessels for the SD mission until 2014. Then, the addition of a fourth ship raises Resilience to the adequate level of three vessels.

### **Integrated Net Assessments Overview**

Due to being operationally unsuitable to conduct SC between 1995–2014, Brunei is assessed as clearly inferior to the other claimant nations should it seek to conduct offensive EMEZ operations at Louisa Reef. In turn, Brunei is also clearly outmatched even in defensive SD missions against China, Malaysia and Taiwan – these nations can simply apply a sufficient weight of force that Brunei is outmatched on almost every military power factor.

The exception however is Vietnam; due to Vietnam's lack of ASCM-armed ships able to reach Louisa Reef until 2012, any effort by it to impose SC is dependent on its Air Force. While Brunei lacks the capability to defend against such aircraft, these in turn do not gain a night-attack capability until 2004 – until which Brunei could seek to mount night-attacks against any Vietnamese forces at the Reef. Hence Brunei is judged to have either approximate (until 2004) or disadvantaged parity with Vietnam until 2012, when it becomes also clearly inferior.

In summary, while Brunei did manage to achieve minor qualitative improvements in its armed forces, these were outpaced by yet greater advances made by its competitors, leaving Brunei worse off in 2015 than it had been in 1995. The annual details of these assessments (105 in total) are shown in [Table B16](#) below.

## **Predicted Behaviours Overview**

Based on the above military power assessments, the following overview predictions can be made about Brunei's behaviour regarding Louisa Reef over time in terms of initiating and responding to efforts to resolve the status of the dispute. These can be considered on an annual basis by correlating the colour-coding of the yearly Assessment with the predicted behaviours summary provided at [Table B3](#).

### Defensive Realism (Gains Less Sensitive)

Offensively, Brunei should not seek to initiate confrontations at Louisa Reef. It should, with all states, focus on either allowing the issue of sovereignty to lie fallow or initiate and escalate cooperative dispute resolution strategies, and definitely not initiate distinctive (para)militarisation or attempts at conquest. Defensively, Brunei should engage in self-initiated (i.e. without reference to the behaviours of other nations) generic normal control-enforcing behaviours (including military ones) such as printing maps and making statements of sovereignty, though avoiding initiating distinctive coercion. Of note, since Brunei does not actually control the Reef, such behaviours can equally be classed as offensive, although either way the focus will remain on not engaging in distinctively coercive actions.

Offensively or defensively, when responding to other states' cooperative or confrontational initiatives, Brunei should seek to de-escalate confrontations if and when these occur, focus on cooperative dispute resolution strategies, and seek to build distinctive cooperation. Regarding defensive reactions, Brunei may infrequently respond to non-(para)militarised coercion with increased coercion, such as escalating to a formal protest in response to some declaratory action, but it should avoid escalating to any form of distinctive coercion, let alone a (para)militarised threat. Also, it will respond to distinctive (para)militarised strategies in kind, though with a decreased level of coercion, seeking to de-escalate the confrontation, but will still defend itself strongly if attacked. Lastly, it should also aim to avoid lethal or potentially lethal force against poachers.



## Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory

### *Offensive Objectives*

Offensively, as a clearly inferior power from an EMEZ perspective, Brunei should not seek to initiate confrontations by building outposts on Louisa Reef. It should behave as a weak state with all nations, effectively acting identically to the DR(GLS) entry.

### *Defensive Objectives*

Defensively, being clearly inferior to China, Malaysia, Taiwan and, after 2012, Vietnam, Brunei should likewise behave as weak state. This includes for the types of self-initiated control-enforcing actions it might engage in.

But regarding Vietnam, during the period Brunei has parity, it should be willing to respond to Hanoi with normal cooperation or coercion in kind, potentially (de)escalating its response as it sees fit. Brunei should also be willing to offer Vietnam up to practical normal economic, paramilitary or military cooperative measures regarding the Reef. But Brunei should demur most offers of distinctive cooperation and match forms of distinctive coercion in kind, including the threat or use of (para)military force, though aiming to ultimately decrease level of tension over time.

The exceptions are, firstly, if towards Vietnam Brunei is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently respond by initiating non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – although it will seek to de-escalate if these do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing defensive confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if the aggressor matches its coercion, even progressing to militarised strategies if at an opportune balance of power. Regardless of either approach, it will of course

defend itself strongly if attacked. And in the defence of its territory against poachers, it should be willing to occasionally use potentially lethal force, such as warning shots, particularly as part of an escalation following less-intense measures.

In terms of theory-specific behavioural differences, when responding to Hanoi under BOP, since parity is not an opportune moment for aggressive behaviour, *Brunei should not initiate or escalate distinctive paramilitary or military coercion* – only engaging in such strategies in response to their use first by its adversary. But under PTT, *Brunei may indeed respond by initiating such behaviours* (but is far from certain to), with a view to heading-off further threats.

### Offensive Realism – Balance of Power/Power Transition Theory

#### *Offensive Objectives*

As a clearly inferior power from an offensive EMEZ perspective, Brunei should not seek to initiate confrontations by building outposts on the Reef. It should behave as a weak state.

#### *Defensive Objectives*

Defensively, it should likewise behave as a weak state towards China, Malaysia, Taiwan and, after 2012, Vietnam. This includes for the types of self-initiated control-enforcing actions it might engage in.

During the period when Brunei has parity with Vietnam, when responding to efforts by Hanoi to resolve the dispute, Brunei should strongly favour escalating confrontational strategies. In particular, it should respond in kind and with escalation to the threat or use of distinctive coercive strategies against it; and be readily willing to use warning shots or lethal force in defence of its territory against Vietnamese poachers. It will of course also defend itself strongly if attacked. During parity Brunei should offer or accept no more than limited cooperation.

In terms of theory-specific behavioural differences; under BOP, when responding to anything short of distinctive paramilitary or military actions from Hanoi, Brunei should react with escalating *non-paramilitary or non-militarised* distinctive coercive strategies (i.e. up to economic and diplomatic measures), while seeking to avoid being the first to begin distinctive paramilitary or military action. However, under PTT, Brunei should react with escalating *paramilitary or militarised* strategies, including crisis initiation. Of course, Brunei should behave as a weak state towards Vietnam from 2012.

Table B16: Brunei Summary

		Geographic Feature and Type				
		Louisa Reef (Sec-B)				
Claimed	BRN, MLY, CHN, TWN, VNM					
Controlled	N/A					
Distance from Bases	250 km					
Brunei Operational Need	EMEZ	SD - MLY	SD - CHN	SD - TWN	SD - VNM	
Integrated Military Power Assessment	1995					RP
	1996					RP
	1997					RP
	1998					RP
	1999					RP
	2000					RP
	2001					RP
	2002					RP
	2003					RP
	2004					DP
	2005					DP
	2006					DP
	2007					DP
	2008					DP
	2009					DP
	2010					DP
	2011					DP
2012						
2013						
2014						
2015						

Notes: AO distances from Maura Naval Bases. Rating Scale: I: Inferior; DP: Disadvantaged Parity; RP: Rough Parity; AP: Advantaged Parity; S: Superior. Feature Type: CoG: Centre of Gravity; Sec-A: Secondary, Amphibious Assault Possible, Sec-B: Secondary, construction effort or naval patrolling required; N/A: Not Applicable. Total number of assessments: 105.

## China

### **Operational Assessment and Force Development Overview**

The SSF is assessed as being operationally suitable through the study period to conduct SD operations but only capable of conducting MEZ missions in all AO from about 2005. This reflects that across the 12 AO, at least four locations (Itu Aba, Pratas, Spratly and Thitu Islands) are defended by forces equipped with submarine or air capabilities or both, and the SSF did not appear to demonstrate a comprehensive long-range ASW SC capability before 2000 and AAW SC capability before 2004. Hence until these capabilities were in place, SSF MEZ operations would have been inherently vulnerable. However, the force has always maintained a robust air- and especially ship-launched ASCM capability, providing it the potential to credibly threaten attackers with a strong SD capability.

In more detail, the SSF was a particular beneficiary of a range of improvements affecting the entirety of the PLAN and PLANAF from around 1996 that resulted from a change in the focus of these forces' missions. The PLAN, in the late 1990s, had the key objective of "offshore defence" focussed on protecting China's coastline and nearby territories in the "near seas", including the SCS.<sup>352</sup> A particular (and enduring) focus of this task included developing capabilities to deter any move towards independence by Taiwan, and should this fail, to be able to forcibly reunify it with the mainland (ONI, 2015, pp. 7–9).

In 2004, these roles were expanded to "new historic missions" including "providing a security guarantee to safeguard China's national development and playing an important role in ensuring world peace" (ONI, 2015, p. 9). This significantly expanded role broadened the PLAN's remit beyond Taiwan and the territorial

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<sup>352</sup> Even this was an expansion beyond the PLAN's previous tasks, which until 1987 had focussed strictly on coastal defence, making it a "brown water navy". In 1987 it commenced a focus on offshore defence, beginning the process of operating in more distant green and blue waters (ONI, 2015, p. 7). For a broader discussion of the move from coastal defence, to near seas defence and then far seas operations, see Li (2009).

defence focus and drove the development of capabilities able to operate in the “far seas” (blue water) and conduct “open seas protection” operations. That is, to proactively exert military force with the aim of defending and progressing Chinese international interests, including claims over disputed territories and protecting sea lines of communication (Department of Defense, 2016, pp. 6, 43–44; ONI, 2015, pp. 9–11).

To achieve these ends, the PLAN’s air and naval forces exhibited dramatic improvements along with the rest of the Chinese armed forces due to the extraordinary (and continuing) increases in defence spending during the period 1996–2016. These improvements have occurred across all the key factors affecting military power as defined by this dissertation. They have ranged from the technical, with large quantities of modern platforms entering service boasting increasingly diverse and longer-ranged weapons and sensors, through to personnel-focussed issues, with improved training and deployment experience (Heginbotham et al., 2015, pp. 26–36; ONI, 2015).

To provide a brief overview of the changes, in 1996 the PLAN’s surface, submarine and air forces were largely antiquated, with mediocre capabilities in ASuW, limited broad-area ship-based AAW due to vessels lacking longer-ranged missiles (depending instead on fighter aircraft for protection), and very limited ASW potential. Larger vessels able to venture into the “blue water” of the more distant ocean were rare, restricting the PLAN to coastal or littoral operations (O’Rourke, 2016, p. 80). Further, training was infrequent, unrealistic and highly-scripted, with most results predetermined (Heginbotham et al., 2015, p. 27; ONI, 2015, p. 27). In short, the PLAN could only exert limited tri-dimensional control at short distances from the mainland, while protected by fighters, and even there had strong vulnerabilities to submarines. It had limited capacity to travel farther, and where it did, it was with vessels and submarines of doubtful capability.

By 2015 a very different picture had emerged. While the overall numbers of major vessels had not substantially increased, large quantities of old units had been

replaced with modern platforms of increasing size and capability (ONI, 2015). For example, the PLAN's percentage of modern Destroyers and Frigates respectively increased from 14% and 24% in 2003 to 65% and 69% in 2015 (Heginbotham et al., 2015, p. 30). These new vessels demonstrated substantial improvements particularly in ASuW and AAW due to having long-range missiles and sensors, freeing the PLAN from dependence on fighter-cover, and had more limited but increasingly capable ASW capabilities (O'Rourke, 2016, pp. 81–84). As modern and large combatants able to operate in blue water, these ships were highly capable multi-mission craft comparable to the most modern Western ships (ONI, 2015, p. 13). Further, amphibious assault capabilities had roughly doubled; large numbers of advanced naval strike and fighter aircraft had been inducted, together with new submarines; and the scale, frequency, complexity and realism of training had all been increased (Heginbotham et al, 2015, pp. 26–36; ONI, 2015). Due to now being able to conduct AAW, ASuW and ASW at long ranges and with high competence, these changes had resulted in a large, technologically advanced and flexible multi-mission force (ONI, 2015, p. 47).

Importantly, these changes have benefitted all three of China's Fleets but the SSF most of all. Until the mid-2000s, the SSF was both smaller and less technologically advanced than the northern formations, reflecting the primacy of their roles of defending the ocean approaches to Beijing and preventing Taiwan's independence. However, with the assertion of "new historic missions" the SSF became a vanguard force for China's new ambitions. The Fleet benefitted from dramatic improvements to a primary submarine base on Hainan Island and became the first to receive important new MSC, amphibious ships and submarine forces (Bussert, 2009; Khurana, 2016). Key upgrades included Type 52C destroyers in 2005, providing a long-range (150 km) SAM capability and enhanced ASW helicopters; *Kilo*-class submarines with 100 km range ASCM in 2007; and JH-7/A Fighter-Ground Attack aircraft in 2004, providing the first truly long-range airborne AAW capability, later supported by J-11B long-range fighters. Further key improvements from 2009 were China's newest and largest amphibious ship, a Type 71 Landing Platform Dock, and increasing numbers of modern Type 54A Frigates with extensive ASW capability.

Indeed by 2010, the South Sea Fleet had grown to be “largest and most modern of the three fleets” (Agnihotri, 2010, p. 75).

The SSF’s growth and improving technical capability also provided improvements in assessed Resilience at the various AO. Utilising figures from *The Military Balance*, while the Fleet only overall grew from 156 to some 175 warships, this included nearly doubling its amphibious strength from 36 to 58 major vessels. Further, in distant locales the resilience number of ASW forces grew from one to eight vessels, and the presence of long-range fighters and SAM-equipped vessels grew the AAW resilience number from five patrolling aircraft to 22 assets. Such forces were able to support Chinese objective regardless of the terrain, from areas such as Woody Island that favoured defenders, through the uncertain advantages of areas such as Scarborough Shoal, through to those adversary facilities such as Itu Aba where Beijing’s marines would face stiff competition should they attack.

In summary then, with regards to the operational needs identified by this dissertation, that is, the capability to conduct SD and SC throughout the SCS, the developments in the PLAN and SSF from 1995–2015 represent a step-change in capability. At the beginning of the period, the SSF was largely coastal, old and lacking key capabilities. This rendered it arguably able to conduct SD against fairly incapable adversaries across the SCS, such as by utilising submarines, but with low confidence.<sup>353</sup> But the force was effectively unable to attempt AA/MEZ or EMEZ at more distant islands, being particularly reliant on shore-based short-ranged aircraft for air defence, and had limited amphibious capabilities. By 2015, however, the PLAN had matured into a highly capable naval force, second only to the US in the region, able to attempt SC and AA throughout the SCS.

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<sup>353</sup> For example, Submarine 361 was lost in 2003 with 70 killed due to mechanical malfunctions largely brought about by poor maintenance practices (Cole, 2012, p. 64).



## **Integrated Net Assessments Overview**

The extensive and rapid improvements outlined above result in, between 1995 and 2015, China moving from a period of frequent inferiority to potential opponents to meeting and then out-matching their capabilities – and doing so for increasingly challenging scenarios. Hence Beijing’s overall position much improved over these 20 years for both offensive and defensive missions. The following summary judgements are made regarding China’s relative military advantage over each of its competitors in the SCS, with the annual details of these assessments (402 in all) available in [Table B17](#) below.

### Brunei

As none of China’s occupied features fall within any of Brunei’s claim, Beijing’s key potential territorial objectives, should it be an active Revisionist, are offensive. The specific operational need is assessed to be the establishment of an EMEZ at Brunei’s only claimed feature of Louisa Reef, to either control the area through a naval presence or to allow the building of a suitable outpost. China is assessed to maintain clear superiority between 1995–2015 due to Brunei having only ASuW forces for its defence, and China possessing such an advantage in numbers and types of assets and range of weapons as to be able to easily defeat such forces.

### Malaysia

As none of China’s occupied features fall within any of Malaysia’s claim, Beijing’s key potential territorial objectives, should it be an aggressor, are offensive. The specific operational need is assessed to be the conquest of Malaysia’s centre of gravity at Swallow Reef through conducting an amphibious assault on the location. Such an action would pit Chinese air and naval forces against Malaysian counterparts until 2009, when Malaysia also introduced submarines forces. Hence until 2009, at a minimum the PLAN must be able enforce AAW and ASuW SC to achieve a MEZ, and until 2003 China is assessed as being operationally unsuitable to

do so due to lacking a long-range air defence capability. This highlights the effects of range on military power, as due to this deficit China's military power is judged clearly inferior. With the introduction of long-range fighter aircraft from 2004 and long-range SAM equipped vessels from 2006, China is then assessed to have broad or advantaged parity with Malay forces, noting its own ASCM substantially outrange those of Malaysia. Further, China possess sufficient defensive interceptors to potentially blunt the entirety of a successful Malaysian weapons launch. China is assessed to have clear superiority from 2010 with the introduction of training equally effective to Malaysia and yet further increases in numbers of defensive interceptor missiles and ASCM.

### The Philippines

Due to both various Filipino- and Chinese-controlled geographic features falling within each nation's claim, Beijing has both offensive and defensive territorial objectives regarding the Philippines. For the Philippines' main centre of gravity, Thitu Island, there is an operational need for AA/MEZ, while at Scarborough Shoal an EMEZ is required. Defensively, China's various occupied and controlled possessions in the SCS, notably Subi, Mischief, and Fiery Cross Reefs, together with Scarborough Shoal,<sup>354</sup> require protection. The assessment of the balance of power between the two nations is complicated by the *Mutual Defense Treaty Between the United States and the Republic of the Philippines (1951)*, which obligates the US to defend Filipino territory and lives but is unclear regarding the status of disputed and unoccupied territories. This dissertation therefore considers that Beijing would expect a US-supported defence of Thitu Island but not of unoccupied features such as Scarborough Shoal, nor would any US assistance be anticipated in any Filipino attack seeking to conquer Chinese controlled territory.

Based on these considerations, China is assessed as clearly superior to the Philippines at Scarborough Shoal and Mischief, Subi, and Fiery Cross Reefs across

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<sup>354</sup> For counting purposes the Shoal is treated as an offensive objective up to and including 2012, when it is captured by Beijing, and a defensive objective from 2013.

the entire period of investigation. This reflects that Manila has no combat aircraft or missile-armed naval units to either defend against or seek to conduct offensive actions towards Chinese missile-armed forces. Of note, this assessment of clear superiority also applies, and for the same reasons, to the special assessment conducted for China's position in the military balance of power when it seized Mischief Reef in 1994–1995 under EMEZ conditions.

The situation is different facing a USN-backed defence of Thitu Island where Chinese air, surface and submarine assets would face American equivalents. China is rated as clearly inferior during 1995–2005, reflecting that due to the range constraints of its available assets it possessed no or very limited capabilities to conduct either or both ASW and AAW SC in the face of US strikes, being therefore operationally unsuitable to enforce a MEZ. From 2005 onwards China is assessed to be in a position of disadvantaged or rough parity with the USN due to the introduction of ships with long-range SAM, increasing numbers of advanced Chinese fighter aircraft able to reach Thitu, improved training, and overall improvements in PLAN and PLANAF modernity.

### Taiwan

Due to the entirety of Taipei and China's claims overlapping, Beijing has both offensive and defensive territorial objectives with respect to Taiwan. From a Revisionist perspective, China's key targets would be Taipei's centres of gravity at Pratas and Itu Aba islands, with both suitable for AA/MEZ operations. Defensively, Beijing has a core need to protect (through SD operations) its Woody Island facilities in the Paracels, its effective control of Macclesfield Bank and Scarborough Shoal, and what would become its centres of gravity in the Spratlys: Mischief, Subi and Fiery Cross Reefs. For such operations, only Taiwanese forces are considered as while Taipei holds a defensive security agreement with the US, this has never been suggested as applying to territories in the SCS.

Based on these considerations, regarding defensive actions, China is, firstly assessed to maintain parity against Taiwan at Woody Island during 1995–2015. At Mischief, Subi, and Fiery Cross Reefs, China maintains parity until 2013, when it achieves clear superiority until 2015. Then, once the islands become suitable for a rapid amphibious attack and take-over by Taiwan, China’s advantage decreases to advantaged parity. At Scarborough Shoal, China only faces a Taiwanese threat from 2013 onwards<sup>355</sup> and by this point its forces are clearly superior to Taipei’s. Finally, at Macclesfield Bank during 1995–1999 China is assessed as lacking the long-range AAW capability to protect its ASCM-firing aircraft from Taiwanese fighters, and its own sea-launched missile are out-ranged by Taiwan’s. In this situation, the defeat of a PLAN SD attack is rated as highly likely, and China’s military power as clearly inferior, until the issue of range asymmetry balances between the two forces from 2000, with rough parity existing thereafter until 2013, where China’s advances have sufficiently outpaced Taiwan’s to make PLAN forces clearly superior.

These various developments reflect that at all these locations (aside from the first few years at Macclesfield Bank) China is able to deploy air-, sea- and submarine-launched ASCM and torpedoes in such quantities that the survival of any Taiwanese invasion force is at best uncertain to almost untenable. This is despite Taipei’s initial advantages in training, ASCM range asymmetry and asset modernity. And at every location these relative benefits erode slowly over time, with increasing numbers of more modern Chinese ships, aircraft and submarines becoming available armed with ever longer-ranged weapons and benefitting from improved training. These developments match and then outpace improvements in Taiwan’s forces, granting Beijing increasing relative advantage.

Regarding offensive action, however, China is assessed as initially inferior to Taiwan when seeking to conquer its centres of gravity at Pratas and Itu Aba, and later to be no more than roughly comparable in military power. This reflects that while

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<sup>355</sup> As previously noted, for counting purposes Scarborough Shoal is considered to be come a defensive objective for Beijing from 2013, noting it is captured from Manila in 2012. Hence, Taiwan poses a threat the site for Beijing from 2013.

Taiwanese ships are present at both locations, Pratas Island also benefits from air and submarine forces and Thitu Island from submarines (being beyond the range of Taipei's air force). Hence Beijing's military is faced with the task of enforcing bi- or tri-dimensional SC to achieve a MEZ. China is operationally unsuited to achieving these effects at Itu Aba until 2000 (when it becomes able to enforce an ASW perimeter) and at Pratas Island until 2004, when it gains an AAW capability able to reach the island. After this time, Beijing's previously discussed improvements to modernity, weapon range, training, and numbers of offensive and defensive missiles outstrip relative improvements in Taiwan's forces, but never to the extent that a Chinese victory becomes a certainty.

### Vietnam

Due to Hanoi's claims over the Paracels and Spratlys overlapping with China's, Beijing has both offensive and defensive territorial objectives regarding Vietnam. Should China prove a Revisionist, its key target would be Vietnam's centre of gravity in the Spratlys, Spratly Island; with this a suitable target for AA/MEZ. Defensively, Beijing has needs to conduct SD operations to protect Woody Island in the Paracels and also Mischief, Subi, and Fiery Cross Reefs in the Spratlys. In all these AO the primary contest is between Chinese air, surface and submarine forces against Vietnamese air assets, as Hanoi is assessed to have minimal long-range surface ship capability until 2012, supported by its first submarines from 2015.

Based on these considerations, China is assessed as clearly superior to Vietnam at all defensive AO during 1995–2015. This essentially reflects that Chinese forces exist in such numbers, with weapons in such quantities, that they are able to effectively absorb any Vietnamese attack and in turn overwhelm any invasion force. The extent of this superiority increases over time, with PLAN and PLANAF improvements in numbers, weapon ranges, modernity and training outpacing those of Hanoi and rendering the scale of any Chinese victory proportionately greater.

Regarding Spratly Island, China is assessed as being operationally unsuitable to attack the island until 2004, and hence clearly militarily inferior up to that point, due to its lack of an AAW SC capability and thus inability to enforce a MEZ. Thereafter, with the introduction of long-range fighters and defensive missiles, various degrees of parity exist between the two nations until 2012. During this time China maintains particular benefits in defensive preponderance, having sufficient interceptor missiles to be able to absorb many times the numbers of ASCM that can be fired by Vietnamese forces. China's degree of relative advantage continues to improve until 2012, due to its previously discussed improvements in all the military power factors exceeding comparable efforts by Hanoi. Then, in 2012, the introduction of long-range J-11 fighter jets, which can finally contest with Vietnamese aircraft on equal terms, in addition to all of Beijing's other strengths, leads to an assessment of clear superiority.

### **Predicted Behaviours Overview**

Based on the above military power assessments, the following overview predictions can be made about China's behaviour towards other competitor nations over time in terms of initiating and responding to efforts to resolve the status of disputes. These can also be considered on an annual basis by correlating the colour-coding of the yearly Integrated Assessment with the predicted behaviours summary provided with it at [Table B3](#).

#### All Parties/All Locations – Defensive Realism (Gains Less Sensitive)

Offensively, China should not seek to initiate confrontations at the various locations. It should, with all states and regardless of the balance of power, focus on either allowing the issue to lie fallow or initiate and escalate cooperative dispute resolution strategies, and definitely not initiate distinctive (para)militarisation or attempts at conquest. Defensively, China should engage in self-initiated (i.e. without reference to the behaviours of other nations) generic normal control-

enforcing behaviours (including military ones) such as printing maps and making statements of sovereignty, though avoiding initiating distinctive coercion.

Offensively or defensively, when responding to other states' cooperative or confrontational initiatives, China should seek to de-escalate confrontations if and when these occur, focus on cooperative dispute resolution strategies, and seek to build distinctive cooperation. However, defensively, it may infrequently respond to non-(para)militarised coercion with increased coercion, such as escalating to a formal protest in response to some declaratory action, but it should avoid escalating to any form of distinctive coercion, let alone a (para)militarised threat. Also, it will defensively respond to distinctive (para)militarised strategies in kind, though with a decreased level of coercion, seeking to de-escalate the confrontation, but will still defend itself strongly if attacked. Defensively, it should also aim to avoid lethal or potentially lethal force against poachers.

### Brunei

#### *Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

China's objectives against Brunei are offensive, to capture or control Louisa Reef via EMEZ. As a clearly superior offensive power, China should engage in a mixed set of (de)escalating normal cooperative and coercive strategies to gain control, and broadly respond to Brunei's behaviour in kind. It should not generally initiate or escalate distinctive cooperation or coercion. If such acts are initiated by Brunei, Beijing should not accept distinctive cooperation; and aim to match distinctive coercion – if non-(para)militarised – or allow the matter to go fallow if (para)militarised. Under either scenario, Beijing would aim to restrain further escalation and then de-escalate over time to the normal range of strategies.

The exceptions are, firstly, if China is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently initiate non-(para)militarised distinctive coercion, or if the balance of power is opportune,

even paramilitary or militarised actions – including a land-grab. However, it will seek to de-escalate (aside from a land-grab) if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if its coercion is matched, potentially progressing to militarised strategies and a land-grab if at an opportune balance of power.

In terms of theory-specific behavioural differences; under BOP China *may* (but is far from certain to) over time *initiate and escalate* distinctive paramilitary or militarised coercion, potentially including a land grab to seize the territory, in alignment with the description above. Under PTT, Beijing *should not initiate* distinctive paramilitary or militarised coercion.

#### *Offensive Realism – Balance of Power/ Power Transition Theory*

As a superior offensive power, China should strongly favour coercive strategies, and engage in very limited if any cooperation.

In terms of theory-specific differences; under BOP Beijing should initiate and rapidly escalate distinctive *(para)militarised* strategies, including overt attacks. Under PTT, Beijing should initiate and escalate distinctive *non-(para)militarised* strategies, aiming to avoid crisis initiation or conflict. While it will match any distinctive *(para)militarisation* by Brunei, it should avoid further escalation and ultimately aim to reduce tensions, but it will respond strongly if attacked.

#### Malaysia

#### *Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

China's objectives against Malaysia are offensive, to capture or control Swallow Reef through AA/MEZ operations. As an inferior military power until 2004, China should behave as a weak state, effectively analogous to the DR(GLS) description.



From 2004 until 2009, during rough parity, China should engage in a mixed set of (de)escalating and (de)intensifying normal cooperative and coercive strategies to gain control, and broadly respond to Malaysia's behaviour in kind. It should not generally initiate or escalate distinctive cooperation or coercion.

If such acts are initiated against it, Beijing should not accept distinctive cooperation; and aim to match distinctive coercion – if non-(para)militarised – or allow the matter to go fallow if (para)militarised. Under either scenario, Beijing would aim to restrain further escalation and then de-escalate over time to the normal range of strategies.

The exceptions are, firstly, if China is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently initiate non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – including a land-grab. However, it will seek to de-escalate (aside from a land-grab) if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if its coercion is matched, potentially progressing to militarised strategies and a land-grab if at an opportune balance of power.

In terms of theory-specific behavioural differences; under PTT China *may* (but is far from certain to) over time *initiate and escalate* distinctive paramilitary or militarised coercion, potentially including a land grab to seize the territory. Under BOP, Beijing *should not initiate* distinctive paramilitary or militarised coercion. These trends reverse for the theories from 2010 onwards once China gains military superiority.

#### *Offensive Realism – Balance of Power/ Power Transition Theory*

As an inferior power until 2004, China should behave as a weak state, effectively analogous to the DR(GLS) description.

From 2004 onwards, when it gains parity, China should strongly favour coercive strategies. It should engage in very limited if any cooperation.

In terms of theory-specific behavioural differences; between 2004-2009, during rough parity, under PTT Beijing should initiate and rapidly escalate distinctive *(para)militarised* strategies, including overt attacks. Under BOP, Beijing should initiate and escalate distinctive *non-(para)militarised* strategies, aiming to avoid initiating (para)militarisation or conflict, although matching any (para)militarisation by Kuala Lumpur and responding strongly if attacked. These trends reverse for the theories from 2010 onwards once China gains military superiority.

### The Philippines

#### *Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

China's objectives against the Philippines are both offensive, to capture or control Scarborough Shoal and Thitu Island through EMEZ and AA/MEZ operations, and defensive to protect its possessions claimed by Manila.

#### *Offensive Objectives: Scarborough Shoal*

Offensively, as a superior military power between 1995-2012 at Scarborough Shoal,<sup>356</sup> China should engage in a mixed set of (de)escalating normal cooperative and coercive strategies to gain control, and broadly respond to the Philippine's behaviour in kind. It should not generally initiate or escalate distinctive cooperation or coercion.

If such acts are initiated against it, Beijing should not accept distinctive cooperation; and aim to match distinctive coercion – if non-(para)militarised – or allow the matter to go fallow if (para)militarised. Under either scenario, Beijing would aim to

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<sup>356</sup> Recalling that for counting purposes, China is considered to treat the Shoal as an offensive objective up to and including 2012, and a defensive one from 2013.

restrain further escalation and then de-escalate over time to the normal range of strategies.

The exceptions are, firstly, if China is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently initiate non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – including a land-grab. However, it will seek to de-escalate (aside from a land-grab) if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if its coercion is matched, potentially progressing to militarised strategies and a land-grab if at an opportune balance of power.

In terms of theory-specific behavioural differences; under BOP China *may* (but is far from certain to) over time *initiate and escalate* distinctive paramilitary or militarised coercion, potentially including a land grab to seize the territory. Under PTT, Beijing *should not initiate* distinctive paramilitary or militarised coercion.

#### *Offensive Objectives: Thitu Island*

A different situation exists at Thitu Island where USN intervention is likely. Between 1995-2004, while it is clearly inferior, China should behave as a weak state, analogous to DR(GLS) behaviour. But From 2005 onwards, China enters rough and improving parity. Then, it's behaviour should be as for Scarborough Shoal, listed above.

#### *Defensive Objectives*

Defensively, as a superior military power throughout the period, China should be willing to respond to normal cooperation or coercion in kind, potentially (de)escalating its response as it sees fit. Beijing should also be willing to offer Manila up to practical normal economic, paramilitary or military cooperative

measures regarding the area. It should demur most offers of distinctive cooperation and match forms of distinctive coercion in kind, including the threat or use of (para)military force, though aiming to ultimately decrease level of tension over time.

The exceptions are, firstly, if China is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently respond by initiating non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – although it will seek to de-escalate if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing defensive confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if the aggressor matches its coercion, even progressing to militarised strategies if at an opportune balance of power.

Separately, China should self-initiate (i.e. without reference to the behaviours of other nations) the full range of practical normal exploitation and control-enforcing behaviours, including acts such as making declarations of sovereignty and print maps claiming an area. Beijing may also occasionally initiate distinctly coercive control-enforcing acts, but these should be rare and focussed on non-militarised activities, to minimise costs. And in the defence of its territory against poachers, it should be willing to occasionally use potentially lethal force, such as warning shots, particularly as part of an escalation following less-intense measures. China will of course defend itself strongly if attacked.

In terms of theory-specific behavioural differences, when responding to Manila under PTT, since superiority is not an opportune moment for aggressive behaviour, *China should not initiate or escalate distinctive paramilitary or militarised coercion* – only engaging in such strategies in response to their use first by its adversary. But under BOP, *China may indeed respond by initiating such activities* (but is far from certain to), with a view to heading-off further threats.

## *Offensive Realism – Balance of Power/ Power Transition Theory*

### *Offensive Objectives: Scarborough Shoal*

As a superior military power throughout the period at Scarborough Shoal, China should strongly favour coercive strategies. It should engage in very limited if any cooperation.

In terms of theory-specific behavioural differences; under BOP Beijing should initiate and rapidly escalate distinctive *(para)militarised* strategies, including overt attacks. Under PTT, Beijing should initiate and escalate distinctive *non-(para)militarised* strategies, aiming to avoid crisis initiation or conflict. While it will match any distinctive *(para)militarisation* by Manila, it should avoid further escalation and ultimately aim to reduce tensions, although it will respond strongly if attacked.

### *Offensive Objectives: Thitu Island*

At Thitu Island, between 1995-2004, while it is clearly inferior, China should behave as a weak state. From 2005 onwards, as China enters rough and improving parity. Then, it's behaviour should be as for Scarborough Shoal with Beijing, under BOP, focussing on distinctive *non-(para)militarised* strategies, while under PTT it should favour distinctive *(para)militarised* ones.

### *Defensive Objectives*

As a clearly superior power, when responding to efforts by Manila to resolve the dispute, China should strongly favour escalating confrontational strategies. In particular, it should respond in kind and with escalation to the threat or use of distinctive coercive strategies against it, and it will of course also defend itself strongly if attacked. Beijing should be readily willing to use warning shots or lethal

force in defence of its territory against Filipino poachers. Beijing should offer or accept no more than limited cooperation.

Separately, China should self-initiate (i.e. without reference to the behaviours of other nations) generic practical economic exploitation and control-enforcing behaviours such as building civilian, paramilitary or military infrastructure, or despatching patrols and conducting exercises. These self-initiated behaviours will span the full range of normal and distinctly coercive activities – the Revisionist is comfortable engaging in distinctive militarised coercion prophylactically, to ward-off expected aggression from other states.

In terms of theory-specific behavioural differences; under PTT, when responding to anything short of distinctive (para)militarisation from Manila, Beijing should react with escalating *non-(para)militarised* distinctive coercive strategies while seeking to avoid being the first to begin distinctive militarisation. However, under BOP, China should react with escalating *(para)militarised* strategies, including crisis initiation.

## Taiwan

### *Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

China's objectives against Taiwan are both offensive, to capture its CoG at Pratas and Itu Aba Island through AA/MEZ operations, and defensive to protect its possessions claimed by Taipei. These are Woody Island; Macclesfield Bank; and, from 2012, Scarborough Shoal; and Fiery Cross, Mischief and Subi Reefs.

#### *Offensive Objectives: Itu Aba and Pratas Island*

From an offensive perspective, during the period China is inferior to Taiwan in terms of attacking Itu Aba Island (until 2000) and Pratas Island (until 2004), Beijing should behave as a weak state. Then, China does reach parity but never achieves clear superiority for attacking either island. Once at parity, Beijing should engage in

a mixed set of (de)escalating normal cooperative and coercive strategies to gain control, and broadly respond to Taipei's behaviour in kind.

Beijing should not generally initiate or escalate distinctive cooperation or coercion. If such acts are initiated against it, Beijing should not accept distinctive cooperation; and aim to match distinctive coercion – if non-(para)militarised – or allow the matter to go fallow if (para)militarised. Under either scenario, Beijing would aim to restrain further escalation and then de-escalate over time to the normal range of strategies.

The exceptions are, firstly, if China is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently initiate non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – including a land-grab. However, it will seek to de-escalate (aside from a land-grab) if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if its coercion is matched, potentially progressing to militarised strategies and a land-grab if at an opportune balance of power.

In terms of theory-specific behavioural differences; under PTT China *may* (but is far from certain to) over time *initiate and escalate* distinctive paramilitary or militarised coercion, potentially including a land grab to seize the territory. Under BOP, Beijing *should not initiate* distinctive paramilitary or militarised coercion.

### *Defensive Objectives*

Defensively, China is at some form of parity against Taiwan at all its features (bar Macclesfield Bank and Scarborough Shoal) for almost the entire period. So, it should be willing to respond to normal cooperation or coercion in kind, potentially (de)escalating its response as it sees fit. Beijing should also be willing to offer up to practical normal economic, paramilitary or military cooperative measures regarding

the area. It should demur most offers of distinctive cooperation and match forms of distinctive coercion in kind, including the threat or use of (para)military force, though aiming to ultimately decrease level of tension over time.

The exceptions are, firstly, if China is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently respond by initiating non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – although it will seek to de-escalate if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing defensive confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if the aggressor matches its coercion, even progressing to militarised strategies if at an opportune balance of power.

Separately, China should self-initiate (i.e. without reference to the behaviours of other nations) the full range of practical normal exploitation and control-enforcing behaviours, including acts such as making declarations of sovereignty and print maps claiming an area. Beijing may also occasionally initiate distinctly coercive control-enforcing acts, but these should be rare and focussed on non-militarised activities, to minimise costs. And in the defence of its territory against poachers, it should be willing to occasionally use potentially lethal force, such as warning shots, particularly as part of an escalation following less-intense measures. China will of course defend itself strongly if attacked.

In terms of theory-specific behavioural differences, when responding to Taipei under BOP, since parity is not an opportune moment for aggressive behaviour, *China should not initiate or escalate distinctive paramilitary or militarised coercion* – only engaging in such strategies in response to their use first by its adversary. But under PTT, *China may indeed respond by initiating such activities* (but is far from certain to), with a view to heading-off further threats.



Of note, China briefly has clear superiority at its three Reefs (Subi, Mischief and Fiery Cross) in 2013-2014, at which point the theories' preferences for the potential to initiate and escalate to militarisation reverse, but then revert when China returns to parity in 2015. These same behaviours for superiority also exist against Taiwan at Scarborough Shoal from 2013, the time from when it is considered a defensive objective for China.

Also, at Macclesfield Bank, China is inferior up to 2003, when it should act as a weak state. But thereafter, under parity, China should behave as it does at its other features, with these trends reversing after Beijing's clearly superiority from 2013.

#### *Offensive Realism – Balance of Power/ Power Transition Theory*

##### *Offensive Objectives: Itu Aba and Pratas Island*

From an offensive perspective, during the period China is inferior to Taiwan in terms of attacking Itu Aba Island (until 2000) and Pratas Island (until 2004), Beijing should behave as a weak state. Then, China does reach parity but never achieves clear superiority for attacking either island. Once at parity, China should strongly favour coercive strategies. It should engage in very limited if any cooperation.

In terms of theory-specific behavioural differences; under PTT Beijing should initiate and rapidly escalate distinctive *(para)militarised* strategies, including overt attacks. Under BOP, Beijing should initiate and escalate distinctive *non-(para)militarised* strategies, aiming to avoid crisis initiation or conflict. While it will match any distinctive (para)militarisation by Taipei, it should avoid further escalation and ultimately aim to reduce tensions, although it will respond strongly if attacked.

##### *Defensive Objectives*

Defensively, China is at some form of parity against Taiwan at all its features (bar Macclesfield Bank and Scarborough Shoal) for almost the entire period. So, when

responding to efforts by Taipei to resolve the dispute, China should strongly favour escalating confrontational strategies. In particular, it should respond in kind and with escalation to the threat or use of distinctive coercive strategies against it; and be readily willing to use warning shots or lethal force in defence of its territory against Taiwanese poachers. It will of course also defend itself strongly if attacked. Beijing should offer or accept no more than limited cooperation.

Separately, China should self-initiate (i.e. without reference to the behaviours of other nations) generic practical economic exploitation and control-enforcing behaviours such as building civilian, paramilitary or military infrastructure, or despatching patrols and conducting exercises. These self-initiated behaviours will span the full range of normal and distinctly coercive activities – the Revisionist is comfortable engaging in distinctive militarised coercion prophylactically, to ward-off expected aggression from other states.

In terms of theory-specific behavioural differences; under BOP, when responding to anything short of distinctive (para)militarisation from Taipei, China should react with escalating *non-(para)militarised* distinctive coercive strategies while seeking to avoid being the first to begin distinctive militarisation. However, under PTT, China should react with escalating *(para)militarised* strategies, including crisis initiation. Further, China briefly has clear superiority at its three Reefs (Subi, Mischief and Fiery Cross) in 2013-2014, at which point the theories' preferences for the potential to initiate and escalate militarisation reverse, but then revert when China returns to parity in 2015. These same behaviours for superiority also exist against Taiwan at Scarborough Shoal from 2013.

At Macclesfield Bank, China is inferior up to 2003, when it should act as a weak state. But thereafter, under parity, China should behave as it does at its other features, with these trends reversing after Beijing's clearly superiority from 2013.

## Vietnam

### *Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

China's objectives against Vietnam are both offensive, to capture its CoG at Spratly Island, and defensive to protect its Woody Island CoG, and its holdings at Fiery Cross, Mischief and Subi Reefs.

#### *Offensive Objectives: Spratly Island*

Offensively, as an inferior military power regarding Spratly Island until 2004, China should act as a weak state. After 2004, entering a phase of rough parity, China should engage in a mixed set of (de)escalating normal cooperative and coercive strategies to gain control, and broadly respond to Vietnam's behaviour in kind.

Beijing should not generally initiate or escalate distinctive cooperation or coercion. If such acts are initiated against it, Beijing should not accept distinctive cooperation; and aim to match distinctive coercion – if non-(para)militarised – or allow the matter to go fallow if (para)militarised. Under either scenario, Beijing would aim to restrain further escalation and then de-escalate over time to the normal range of strategies.

The exceptions are, firstly, if China is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently initiate non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – including a land-grab. However, it will seek to de-escalate (aside from a land-grab) if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if its coercion is matched, potentially progressing to militarised strategies and a land-grab if at an opportune balance of power.

In terms of theory-specific behavioural differences; under PTT China may (but is far from certain to) over time *initiate and escalate* distinctive paramilitary or militarised coercion, potentially including a land grab to seize the territory. Under BOP, Beijing *should not initiate* distinctive paramilitary or militarised coercion. However once China becomes militarily superior in 2012, these positions reverse for the theories.

### *Defensive Objectives*

Defensively, as China is consistently superior to Vietnam in all AO, it should be willing to respond to normal cooperation or coercion in kind, potentially (de)escalating and its response as it sees fit. It should also be willing to offer Vietnam up to practical normal economic, paramilitary or military cooperative measures regarding the area. China should demur most offers of distinctive cooperation and match forms of distinctive coercion in kind, including the threat or use of (para)military force, though aiming to ultimately decrease level of tension over time.

The exceptions are, firstly, if China is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently respond by initiating non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – although it will seek to de-escalate if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing defensive confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if the aggressor matches its coercion, even progressing to militarised strategies if at an opportune balance of power.

Separately, China should self-initiate (i.e. without reference to the behaviours of other nations) the full range of practical normal exploitation and control-enforcing behaviours, including acts such as making declarations of sovereignty and print maps claiming an area. Beijing may also occasionally initiate distinctly coercive control-enforcing acts, but these should be rare and focussed on non-militarised

activities, to minimise costs. And in the defence of its territory against poachers, it should be willing to occasionally use potentially lethal force, such as warning shots, particularly as part of an escalation following less-intense measures. China will of course defend itself strongly if attacked.

In terms of theory-specific behavioural differences; when responding to Hanoi under PTT, since superiority is not an opportune moment for aggressive behaviour, *China should not initiate or escalate distinctive paramilitary or militarised coercion* – only engaging in such strategies in response to their use first by its adversary. But under BOP, *China may indeed respond by initiating such activities* (but is far from certain to), with a view to heading-off further threats.

#### *Offensive Realism – Balance of Power / Power Transition Theory*

##### *Offensive Objectives: Spratly Island*

Offensively, as an inferior military power regarding Spratly Island until 2004, China should act as a weak state. After 2004, entering a phase of parity, China should strongly favour coercive strategies and engage in very limited if any cooperation. In terms of theory-specific behavioural differences; under PTT Beijing should initiate and rapidly escalate distinctive *(para)militarised* strategies, including overt attacks. Under BOP, Beijing should initiate and escalate distinctive *non-(para)militarised* strategies, aiming to avoid crisis initiation or conflict. While it will match any distinctive *(para)militarisation* by Hanoi, it should avoid further escalation and aim to reduce tensions, although it will respond strongly if attacked. These trends reverse for the theories from 2012 onwards once China has military superiority.

##### *Defensive Objectives*

Defensively, as China is consistently superior to Vietnam in all AO, when responding to efforts by Hanoi to resolve the dispute, China should strongly favour escalating confrontational strategies. In particular, it should respond in kind and with

escalation to the threat or use of distinctive coercive strategies against it; and be readily willing to use warning shots or lethal force in defence of its territory against Vietnamese poachers. It will of course also defend itself strongly if attacked. Beijing should offer or accept no more than limited cooperation.

Separately, China should self-initiate (i.e. without reference to the behaviours of other nations) generic practical economic exploitation and control-enforcing behaviours such as building civilian, paramilitary or military infrastructure, or despatching patrols and conducting exercises. These self-initiated behaviours will span the full range of normal and distinctly coercive activities – the Revisionist is comfortable engaging in distinctive militarised coercion prophylactically, to ward-off expected aggression from other states.

In terms of theory-specific behavioural differences; under PTT, when responding to anything short of distinctive (para)militarisation from Hanoi, China should react with escalating *non-(para)militarised* distinctive coercive strategies while seeking to avoid being the first to begin distinctive militarisation. However, under BOP, China should react with escalating *(para)militarised* strategies, including crisis initiation.

Table B17 China Summary

	Geographic Feature and Type																			
	Woody Island (CoG)	Pratas Island (CoG)	M'field Bank (Sec B)	Scarborough Shoal (Sec B)*	Subi Reef (Sec B to 2014; Sec A in 2015)			Thitu Island (CoG)*	Itu Aba Island (CoG)	Fiery Cross Reef (Sec B to 2014; Sec A in 2015)			Mischief Reef (Sec B to 2014; Sec A in 2015)**			Spratly Island (CoG)	Swallow Reef (CoG)	Louisa Reef (Sec B)		
Claimed	CHN, TWN, VNM	CHN, TWN	CHN, TWN	CHN, PHL, TWN	CHN, PHL, TWN, VNM			CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM			CHN, PHL, TWN, VNM			CHN, TWN, VNM	CHN, MLY, TWN, VNM	BRN, CHN, MLY, TWN, VNM		
Controlled	CHN	TWN	CHN	CHN	CHN			PHL	TWN	CHN			CHN			VNM	MLY	N/A		
Distance from Bases	310	660	550	900	950			950	1000	1050			1100			1100	1300	1400		
Chinese Operational Need	SD - TWN	SD - VNM	AA/MEZ	SD EMEZ	EMEZ / SD EMEZ - PHL*	SD EMEZ TWN	SD EMEZ / SD - PHL	SD EMEZ / SD - TWN	SD EMEZ / SD - VNM	AA/ MEZ - USN*	AA/ MEZ	SD EMEZ / SD - PHL	SD EMEZ / SD - TWN	SD EMEZ / SD - VNM	SD EMEZ / SD - PHL	SD EMEZ / SD - TWN	SD EMEZ / SD - VNM	AA/ MEZ	AA/ MEZ	EMEZ
1995	DP	S	I	I	S	N/A	S	RP	S	I	I	S	RP	S	S	RP	S	I	I	S
1996	DP	S	I	I	S	N/A	S	RP	S	I	I	S	RP	S	S	RP	S	I	I	S
1997	DP	S	I	I	S	N/A	S	RP	S	I	I	S	RP	S	S	RP	S	I	I	S
1998	DP	S	I	I	S	N/A	S	RP	S	I	I	S	RP	S	S	RP	S	I	I	S
1999	DP	S	I	I	S	N/A	S	RP	S	I	I	S	RP	S	S	RP	S	I	I	S
2000	DP	S	I	DP	S	N/A	S	AP	S	I	RP	S	AP	S	S	AP	S	I	I	S
2001	DP	S	I	DP	S	N/A	S	AP	S	I	RP	S	AP	S	S	AP	S	I	I	S
2002	DP	S	I	DP	S	N/A	S	AP	S	I	RP	S	AP	S	S	AP	S	I	I	S

2003	DP	S	I	DP	S	N/A	S	AP	S	I	RP	S	AP	S	S	AP	S	I	I	S
2004	DP	S	DP	RP	S	N/A	S	AP	S	I	RP	S	AP	S	S	AP	S	DP	RP	S
2005	RP	S	DP	RP	S	N/A	S	AP	S	I	AP	S	AP	S	S	AP	S	DP	RP	S
2006	RP	S	DP	RP	S	N/A	S	RP	S	DP	AP	S	RP	S	S	RP	S	RP	AP	S
2007	RP	S	DP	RP	S	N/A	S	RP	S	DP	AP	S	RP	S	S	RP	S	RP	AP	S
2008	RP	S	DP	AP	S	N/A	S	AP	S	RP	AP	S	AP	S	S	AP	S	RP	AP	S
2009	RP	S	DP	AP	S	N/A	S	AP	S	RP	AP	S	AP	S	S	AP	S	RP	AP	S
2010	RP	S	DP	AP	S	N/A	S	AP	S	RP	AP	S	AP	S	S	AP	S	AP	S	S
2011	RP	S	DP	AP	S	N/A	S	AP	S	RP	AP	S	AP	S	S	AP	S	AP	S	S
2012	RP	S	RP	AP	S	N/A	S	AP	S	RP	AP	S	AP	S	S	AP	S	S	S	S
2013	AP	S	RP	S	S	S	S	S	S	RP	AP	S	S	S	S	S	S	S	S	S
2014	AP	S	RP	S	S	S	S	S	S	RP	AP	S	S	S	S	S	S	S	S	S
2015	AP	S	RP	S	S	S	S	AP	S	RP	AP	S	AP	S	S	AP	S	S	S	S

Notes: AO distances from Lingsui air base. Rating Scale: I: Inferior; DP: Disadvantaged Parity; RP: Rough Parity; AP: Advantaged Parity; S: Superior. Feature Type: CoG: Centre of Gravity; Sec-A: Secondary, Amphibious Assault Possible, Sec-B: Secondary, construction effort or naval patrolling required; N/A: Not Applicable. \*At the uninhabited Scarborough Shoal, ratings are presented comparing Chinese forces to Filipino ones. Once seized by China, the assessment compares Chinese defenders against Filipino attackers. Thitu Island reflects USN involvement. \*\*China is also assessed to have offensive EMEZ superiority when it seized Mischief Reef in late 1994 or early 1995. Total number of assessments: 402.



## Malaysia

### **Operational Assessment and Force Development Overview**

The Malaysian armed force's rated Operational Suitability to meet the nation's offensive and defensive needs between 1995–2015 is assessed as being heavily dependent on the specific adversary being faced and the complexity of the task. This reflects that, for offensive tasks, of Malaysia's potential opponents Brunei lacks any form of airborne or submarine capability, hence the RMAF and RMN are easily able to impose an ASuW-focussed EMEZ. But attacks on Philippine or Vietnamese outposts require either ASW capabilities that Malaysia for long periods simply lacks, powerful AAW capabilities where it is deficient, or both. Hence for such situations for many years Kuala Lumpur's forces are operationally unsuitable from a combat perspective, and further, with the loss of Malaysia's last heavy amphibious assault ship in 2009, the nation effectively loses its operational suitability for conquering Amboyna Cay from a transport perspective. However, for simpler defensive SD tasks, the RMN and RMAF do have an effective ASUW capability, allowing these forces to credibly threaten states seeking to conquer Swallow Reef or other Malaysian possessions.

In more detail, the RMN's ORBAT from 1995–2015 improved steadily from a core of *Handalan* and *Perdana* class FAC to one both numerically larger and based on physically bigger frigates and corvettes of the various *Lekiu*, *Kasturi* and *Laksamana* classes. These were supported from 2009 by *Scorpene* class submarines, forcing the need for an ASW capability on potential adversaries. During this period the RMAF also numerically expanded and added improved capabilities through adding modern F/A-18 and Su-30MKM multi-role aircraft, armed with advanced ASCM, to a force that had been based around simpler light-fighter and light-attack aircraft. Of course, details of all these assets are available in the MPD.

Due to their growth Malaysia's forces generally displayed suitable Resilience in most missions across the investigation period, although remaining for many years

particularly weak in ASW – being unable to achieve acceptable Resilience until 2011.

### **Integrated Net Assessments Overview**

While Malaysia did manage to achieve a range of material improvements to its armed forces during 1995–2015, these improvements were generally of an insufficient scale to affect the balance of power against major nations or were outpaced by their military improvements. Further, the loss of a heavy amphibious capability imposed a key capability gap from 2010. As a result, Malaysia was generally worse-off in the SCS balance of power in 2015 than at 1995. The following summary judgements are made regarding Malaysia’s relative military advantage over each of its competitors in the SCS, with the annual details of these assessments (147 in all) available in [Table B18](#) below.

#### Brunei

As none of Malaysia’s occupied features fall within any of Brunei’s claim, Kuala Lumpur’s key potential territorial objectives, should it be an active Revisionist, are offensive. The specific operational need is assessed to be the establishment of an EMEZ at Brunei’s only claimed feature of Louisa Reef, to either control the area through a naval presence or to allow the building of a suitable outpost. Malaysia is assessed to maintain clear superiority during 1995–2015 due to Brunei having only ASUW forces for its defence, and Malaysia possessing such an advantage in numbers and types of assets and (for most of the period) ranges of weapons as to be able to easily defeat such forces.

#### China

Due to all of Malaysia’s occupied features falling within China’s claim, while none of those controlled by China are claimed by Kuala Lumpur, Malaysia’s key territorial objectives are defensive – specifically SD to protect its centre of gravity at Swallow

Reef. Due to Malaysia being able to defend this asset with both naval and air units, and Beijing being operationally unsuitable to defend against the latter until 2004, until that time Kuala Lumpur's military power is rated as superior. Thereafter, China's improvements outmatch those of Malaysia rapidly, including by introducing long-range air defence missiles and ASCM, with a period of broad parity lasting until 2010. Then, cumulative Chinese improvements in the categories of Training, Asymmetry, Preponderance, and Modernity lead to a position of clear military superiority for Beijing.

### The Philippines

Due to the Filipino-occupied Commodore Reef falling within Malaysia's claim Kuala Lumpur has offensive territorial objectives regarding the Philippines.<sup>357</sup> Specifically, as Commodore Reef is unsuitable for a heavy amphibious attack an EMEZ is required to take control of and protect the build-up of the feature, or its ongoing control through naval forces. In turn SD operations are needed to protect Malaysia's claims. In assessing the military balance of power between Malaysia and the Philippines, the key complicating feature is Manila's alliance with the US; which obligates Washington to defend it from an attack on its troops or territories. However, the US has no position on the ownership of the disputed SCS territories and has only stated its intent that these issue be resolved peacefully. Hence, it is to be expected that Kuala Lumpur would factor in US forces helping to defend against any attack on Commodore Reef while offensive actions would come from Filipino forces alone.

Based on these considerations, Malaysia across the period is both clearly inferior to US power regarding any attack on Commodore Reef while also being clearly superior to any Filipino efforts to conquer its territory. This reflects that US forces have overwhelming superiority in Personnel, Asymmetry, Preponderance, Modernity and Resilience; hence any Malaysian effort at conquest would face

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<sup>357</sup> Recalling that while Manila does claim some of Malaysia's features, leading to defensive objectives also, these areas are not considered for the purposes of this assessment.

disaster. In turn, Manila's forces fundamentally lack any combat-capable aircraft or sea vessels, likewise making any effort to attack the RMAF or RMN destined to fail.

### Taiwan

Due to all of Malaysia's occupied features falling within Taiwan's claim, while none of those controlled by Taiwan are claimed by Kuala Lumpur, Malaysia's key territorial objectives are defensive – specifically SD to protect its centre of gravity at Swallow Reef. Unfortunately for Malaysia, Taipei's forces are clearly superior throughout the 21-year period. This reflects initial and ongoing superiority in training, numbers and modernity of units, and substantial practical preponderance and asymmetry advantages. Taiwanese ships have ASCM that outrange those of Malaysia launched by sea and swarms of advanced SAM-based defences liable to destroy those that are fired. Further, from 2006 even Malaysia's air-launched weapons are out-ranged by Taiwanese defences, rendering attacking aircraft able to be destroyed before they have the chance to fire their weapons. These factors, together with Taiwan's higher resilience numbers and substantial ASW capability against Malaysia's submarines, more than outweigh improvements to Kuala Lumpur's forces.

### Vietnam

due all of Malaysia's occupied features falling within Vietnam's claim, and the Hanoi-controlled Amboyna Cay and Barque Canada Reef being sought by Kuala Lumpur, Malaysia has both offensive and defensive territorial objectives regarding Vietnam. Specifically, as Amoyna Cay is of sufficient size to allow for a heavy amphibious attack there is a need for an AA/MEZ operation while the far more marginal Barque Canada Reef would require an EMEZ to take control of and protect the build-up of the feature, or its ongoing control through naval forces. In turn SD operations are needed to protect Malaysia's key claim of Swallow Reef.

Regarding offensive operations, due to the more taxing force-structure requirements of an EMEZ, at Barque Canada Reef Malaysia is rated as clearly inferior across the study period. While RMN forces could doubtless seize the feature, Vietnamese forces would clearly be able to build up forces promptly to destroy the limited number of Malaysian defenders able to be maintained to consistently guard the area. At Amboyna Cay, Kuala Lumpur is faced at first with a position of disadvantaged parity. This reflects that a competition at the Cay would principally be decided between the Malaysian and Vietnamese air forces, and that in many respects these two are fairly evenly matched. And while either could triumph, Malaysia's low Resilience, being dependent on two and then one heavy amphibious ships to rapidly transport defenders able to hold the Cay, renders it susceptible to mission failure should Vietnam's assets manage a lucky shot. However after 2010, with the loss of its last heavy amphibious ship, Malaysia is assessed as operationally unsuitable to attack the Cay and hence clearly inferior.

Regarding defensive operations, Malaysia is rated as clearly superior to Vietnam from 1995–2015. This reflects that a Vietnamese attack would depend principally on Hanoi's air force, which would need to defeat both RMAF and RMN defenders protecting Swallow Reef. And when concentrated for a defensive SD strike, Malaysian forces are available in larger numbers, with better trained personnel, more modern assets, and with general range asymmetry and numerical preponderance. Hence Malaysia is able to fire first, in quantities easily sufficient to destroy Vietnamese forces, while using better equipment and operating under air cover able to resoundingly overwhelm Vietnam's air component – upon which Hanoi's success rests. Further, Vietnam in 2013 loses its capacity for effective ASW rendering it operationally unsuitable to mount an attack in the face of Malaysia's submarine capability.

### **Predicted Behaviours Overview**

Based on the above military power assessments, the following overview predictions can be made about Malaysia's behaviour towards other competitor nations over

time in terms of initiating and responding to efforts to resolve the status of disputes. These can also be considered on an annual basis by correlating the colour-coding of the yearly Integrated Assessment with the predicted behaviours summary provided with it at [Table B3](#).

#### All Parties/All Locations – Defensive Realism (Gains Less Sensitive)

Offensively, Malaysia should not seek to initiate confrontations at the various locations. It should, with all states and regardless of the balance of power, focus on either allowing the issue to lie fallow or initiate and escalate cooperative dispute resolution strategies, and definitely not initiate distinctive (para)militarisation or attempts at conquest. Defensively, Malaysia should engage in self-initiated (i.e. without reference to the behaviours of other nations) generic normal control-enforcing behaviours (including military ones) such as printing maps and making statements of sovereignty, though avoiding initiating distinctive coercion.

Offensively or defensively, when responding to other states' cooperative or confrontational initiatives, Malaysia should seek to de-escalate confrontations if and when these occur, focus on cooperative dispute resolution strategies, and seek to build distinctive cooperation.

However, defensively, it may infrequently respond to non-(para)militarised coercion with increased coercion, such as escalating to a formal protest in response to some declaratory action, but it should avoid escalating to any form of distinctive coercion, let alone a (para)militarised threat. Also, it will defensively respond to distinctive (para)militarised strategies in kind, though with a decreased level of coercion, seeking to de-escalate the confrontation, but will still defend itself strongly if attacked. Defensively, it should also aim to avoid lethal or potentially lethal force against poachers.

## Brunei

### *Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

As a clearly superior power from an offensive perspective, Malaysia should engage in a mixed set of (de)escalating normal cooperative and coercive strategies to gain control, and broadly respond to Brunei's behaviour in kind.

Malaysia should not generally initiate or escalate distinctive cooperation or coercion. If such acts are initiated against it, Kuala Lumpur should not accept distinctive cooperation; and aim to match distinctive coercion – if non-(para)militarised – or allow the matter to go fallow if (para)militarised. Under either scenario, Malaysia would aim to restrain further escalation and then de-escalate over time to the normal range of strategies.

The exceptions are, firstly, if Malaysia is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently initiate non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – including a land-grab. However, it will seek to de-escalate (aside from a land-grab) if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if its coercion is matched, potentially progressing to militarised strategies and a land-grab if at an opportune balance of power.

In terms of theory-specific behavioural differences; under BOP Malaysia *may* (but is far from certain to) over time *initiate and escalate* distinctive paramilitary or militarised coercion, potentially including a land grab to seize the territory. Under PTT, Kuala Lumpur *should not initiate* distinctive paramilitary or militarised coercion.

### *Offensive Realism – Balance of Power/Power Transition Theory*

As a clearly superior power from an offensive perspective, Malaysia should strongly favour coercive strategies. It should engage in very limited if any cooperation.

In terms of theory-specific behavioural differences; under BOP, Malaysia should initiate and rapidly escalate distinctive *(para)militarised strategies*, including overt attacks. Under PTT, Malaysia should initiate and escalate distinctive *non-(para)militarised strategies*, aiming to avoid crisis initiation or conflict. While it will match any distinctive (para)militarisation by Brunei, it should avoid further escalation and ultimately aim to reduce tensions, although it will respond strongly if attacked.

### China

#### *Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

Malaysia has defensive superiority with Beijing until 2003, rough parity until 2009, and is then a weak state from 2010. Until 2009, Kuala Lumpur should be willing to respond to normal cooperation or coercion in kind, potentially (de)escalating its response as it sees fit. It should also be willing to offer up to practical normal economic, paramilitary or military cooperative measures regarding the area. Malaysia should demur most offers of distinctive cooperation and match forms of distinctive coercion in kind, including the threat or use of (para)military force, though aiming to ultimately decrease level of tension over time.

The exceptions are, firstly, if Malaysia is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently respond by initiating non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – although it will seek to de-escalate if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing defensive confrontation, it may initiate



non-(para)military distinctive coercion and continue escalation even if the aggressor matches its coercion, even progressing to militarised strategies if at an opportune balance of power.

Separately, Malaysia should self-initiate (i.e. without reference to the behaviours of other nations) the full range of practical normal exploitation and control-enforcing behaviours, including acts such as making declarations of sovereignty and print maps claiming an area. Kuala Lumpur may also occasionally initiate distinctly coercive control-enforcing acts, but these should be rare and focussed on non-militarised activities, to minimise costs. And in the defence of its territory against poachers, it should be willing to occasionally use potentially lethal force, such as warning shots, particularly as part of an escalation following less-intense measures. Malaysia will of course defend itself strongly if attacked.

In terms of theory-specific behavioural differences, when responding to China while at power superiority under PTT, since superiority is not an opportune moment for aggressive behaviour, Malaysia should not initiate *should not initiate or escalate distinctive paramilitary or militarised coercion* – only engaging in such strategies in response to their use first by its adversary. But under BOP, Kuala Lumpur *may indeed respond by initiating such activities* (but is far from certain to), with a view to heading-off further threats. These trends reverse for the theories once Malaysia has power parity from 2004-2009. Then, Malaysia should behave as weak state from 2010.

#### *Offensive Realism – Balance of Power/Power Transition Theory*

Malaysia has defensive superiority with Beijing until 2003, rough parity until 2019, and is then a weak state from 2010. Until 2009, when responding to efforts by Beijing to resolve the dispute, Malaysia should strongly favour escalating confrontational strategies. In particular, it should respond in kind and with escalation to the threat or use of distinctive coercive strategies against it; and be readily willing to use warning shots or lethal force in defence of its territory against

Chinese poachers. It will of course also defend itself strongly if attacked. During this period Malaysia should offer or accept no more than limited cooperation.

Separately, Malaysia should self-initiate (i.e. without reference to the behaviours of other nations) generic practical economic exploitation and control-enforcing behaviours such as building civilian, paramilitary or military infrastructure, or despatching patrols and conducting exercises. These self-initiated behaviours will span the full range of normal and distinctly coercive activities – the Revisionist is comfortable engaging in distinctive militarised coercion prophylactically, to ward-off expected aggression from other states.

In terms of theory-specific behavioural differences; while at power superiority, under PTT, when responding to anything short of distinctive (para)militarisation from China, Malaysia should react with escalating *non-(para)militarised* distinctive coercive strategies while seeking to avoid being the first to begin distinctive militarisation. However, under BOP, Kuala Lumpur should react with escalating *(para)militarised strategies*, including crisis initiation. These trends reverse for the theories once Malaysia has power parity from 2004-2009. Then, Malaysia should behave as weak state from 2010.

### The Philippines

*Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

#### *Offensive Objectives*

From an offensive perspective, as a consistently inferior power, Malaysia should behave as a weak state towards gaining control of Commodore Reef.

#### *Defensive Objectives*

No areas with defensive objectives are considered.

*Offensive Realism – Balance of Power/Power Transition Theory*

*Offensive Objectives*

From an offensive perspective, as a consistently inferior power, Malaysia should behave as a weak state towards gaining control of Commodore Reef.

*Defensive Objectives*

No areas with defensive objectives are considered.

Taiwan

*Defensive Realism (Gains Sensitive)/Offensive Realism – Balance of Power/Power Transition Theory*

As a clearly inferior power, Malaysia should behave as a weak state regarding any Taiwanese efforts to gain control of Swallow Reef.

Vietnam

*Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

*Offensive Objectives*

From an offensive perspective, as a consistently inferior power at Barque Canada Reef, Malaysia should behave as weak state towards gaining control.

At Amboyna Cay, Malaysia has Disadvantaged Parity until 2010, when it becomes clearly inferior. Hence, until 2010, Kuala Lumpur should engage in a mixed set of (de)escalating normal cooperative and coercive strategies to gain control, and broadly respond to Hanoi's behaviour in kind.

Malaysia should not generally initiate or escalate distinctive cooperation or coercion. If such acts are initiated against it, Kuala Lumpur should not accept distinctive cooperation; and aim to match distinctive coercion – if non-(para)militarised – or allow the matter to go fallow if (para)militarised. Under either scenario, Malaysia would aim to restrain further escalation and then de-escalate over time to the normal range of strategies.

The exceptions are, firstly, if Malaysia is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently initiate non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – including a land-grab. However, it will seek to de-escalate (aside from a land-grab) if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if its coercion is matched, potentially progressing to militarised strategies and a land-grab if at an opportune balance of power.

In terms of theory-specific behavioural differences; during parity at Amboyna Cay, under PTT Malaysia *may* (but is far from certain to) over time *initiate and escalate* distinctive paramilitary or militarised coercion, potentially including a land grab to seize the territory. Under BOP, Kuala Lumpur *should not initiate* distinctive paramilitary or militarised coercion. Of course, Malaysia should act as weak state from 2010.

#### *Defensive Objectives: Swallow Reef*

In turn, being clearly superior defensively at Swallow Reef, Malaysia should be willing to respond to normal cooperation or coercion in kind, potentially (de)escalating its response as it sees fit. It should also be willing to offer up to practical normal economic, paramilitary, or military cooperative measures regarding the area. Malaysia should demur most offers of distinctive cooperation and match

forms of distinctive coercion in kind, including the threat or use of (para)military force, though aiming to ultimately decrease level of tension over time.

The exceptions are, firstly, if Malaysia is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently respond by initiating non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – although it will seek to de-escalate if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing defensive confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if the aggressor matches its coercion, even progressing to militarised strategies if at an opportune balance of power.

Separately, Malaysia should self-initiate (i.e. without reference to the behaviours of other nations) the full range of practical normal exploitation and control-enforcing behaviours, including acts such as making declarations of sovereignty and print maps claiming an area. Kuala Lumpur may also occasionally initiate distinctly coercive control-enforcing acts, but these should be rare and focussed on non-militarised activities, to minimise costs. And in the defence of its territory against poachers, it should be willing to occasionally use potentially lethal force, such as warning shots, particularly as part of an escalation following less-intense measures. Malaysia will of course defend itself strongly if attacked.

In terms of theory-specific behavioural differences; when responding to Hanoi under PTT, since superiority is not an opportune moment for aggressive behaviour, *Malaysia should not initiate or escalate distinctive paramilitary or militarised coercion* – only engaging in such strategies in response to their use first by its adversary. But under BOP, Kuala Lumpur *may indeed respond by initiating such activities* (but is far from certain to), with a view to heading-off further threats.

*Offensive Realism – Balance of Power/ Power Transition Theory:*

*Offensive Objectives*

From an offensive perspective, as a consistently inferior power at Barque Canada Reef, Malaysia should behave as weak state towards gaining control. At Amboyna Cay, Malaysia has Disadvantaged Parity until 2010, when it becomes clearly inferior. Hence, until 2010, Malaysia should strongly favour coercive strategies. It should engage in very limited if any cooperation.

In terms of theory-specific behavioural differences; during parity at Amboyna Cay, under PTT Kuala Lumpur should initiate and rapidly escalate distinctive *(para)militarised strategies*, including overt attacks. Under BOP, Malaysia should initiate and escalate distinctive *non-(para)militarised strategies*, aiming to avoid crisis initiation or conflict. While it will match any distinctive *(para)militarisation* by Hanoi, it should avoid further escalation and ultimately aim to reduce tensions, although it will respond strongly if attacked. Of course, Malaysia should act as weak state from 2010.

*Defensive Objectives: Swallow Reef*

In turn, being clearly superior defensively at Swallow Reef, when responding to efforts by Hanoi to resolve the dispute, Malaysia should strongly favour escalating confrontational strategies. In particular, it should respond in kind and with escalation to the threat or use of distinctive coercive strategies against it; and be readily willing to use warning shots or lethal force in defence of its territory against Vietnamese poachers. It will of course also defend itself strongly if attacked. Malaysia should offer or accept no more than limited cooperation.

Separately, Malaysia should self-initiate (i.e. without reference to the behaviours of other nations) generic practical economic exploitation and control-enforcing behaviours such as building civilian, paramilitary or military infrastructure, or

despatching patrols and conducting exercises. These self-initiated behaviours will span the full range of normal and distinctly coercive activities – the Revisionist is comfortable engaging in distinctive militarised coercion prophylactically, to ward-off expected aggression from other states.

In terms of theory-specific behavioural differences; under PTT, when responding to anything short of distinctive (para)militarisation from Hanoi, Malaysia should react with escalating *non-(para)militarised* distinctive coercive strategies while seeking to avoid being the first to begin distinctive militarisation. However, under BOP, Kuala Lumpur should react with escalating *(para)militarised* strategies, including crisis initiation.

Table B18: Malaysia Summary

	Geographic Feature and Type						
	Louisa Reef (Sec B)	Swallow Reef (CoG)			Commodore Reef (Sec B)	Barque Canada Reef (Sec B)	Amboyna Cay (Sec A)
Claimed	PRC, ROC, VNM, MLY, BRN	CHN, MLY, TWN, VNM			CHN, MLY, TWN, VNM	CHN, MLY, TWN, VNM	CHN, MLY, PHL, TWN, VNM
Controlled	N/A	MLY			PHL/USN*	VNM	VNM
Distance from Bases	250	280			330	390	390
Malaysian Operational need	EMEZ - BRN	SD - CHN	SD - TWN	SD - VNM	EMEZ	EMEZ	AA/MEZ
1995	S	S	I	S	I	I	DP
1996	S	S	I	S	I	I	DP
1997	S	S	I	S	I	I	DP
1998	S	S	I	S	I	I	DP
1999	S	S	I	S	I	I	DP
2000	S	S	I	S	I	I	DP
2001	S	S	I	S	I	I	DP
2002	S	S	I	S	I	I	DP
2003	S	S	I	S	I	I	DP
2004	S	RP	I	S	I	I	DP
2005	S	RP	I	S	I	I	DP
2006	S	DP	I	S	I	I	DP



2007	S	DP	I	S	I	I	DP
2008	S	DP	I	S	I	I	DP
2009	S	DP	I	S	I	I	DP
2010	S	I	I	S	I	I	I
2011	S	I	I	S	I	I	I
2012	S	I	I	S	I	I	I
2013	S	I	I	S	I	I	I
2014	S	I	I	S	I	I	I
2015	S	I	I	S	I	I	I

Notes: AO distances from Labuan bases. Rating Scale: I: Inferior; DP: Disadvantaged Parity; RP: Rough Parity; AP: Advantaged Parity; S: Superior. Feature Type: CoG: Centre of Gravity; Sec-A: Secondary, Amphibious Assault Possible, Sec-B: Secondary, construction effort or naval patrolling required; N/A: Not Applicable. \*Reflects USN involvement. Total number of assessments: 147.

## The Philippines and the United States

### **Operational Assessment and Force Development Overview**

The PN and PAF are assessed as being operationally unsuitable to meet the nation's offensive and defensive needs during 1995–2015. This reflects that, barring a handful of antiquated AAM-equipped combat aircraft withdrawn from service in 2005, they lack the missile armament needed to meet the counting rules used in this dissertation. Most importantly, PN and PAF forces lack any ASuW missile capability while all adversary nations have such armaments together with anti-aircraft cannon or SAM to defend against airborne threats. Hence any efforts by the PN to conduct SD operations by gunfire would be defeated due to its vessels being destroyed by missiles before they can attack, with any PAF SD bombing efforts being almost certainly defeated by defensive guns or missiles. Similarly, the PN and PAF lack the armaments to impose MEZ or EMEZ for offensive operations.

In turn, the forward deployed forces of the 7th Fleet are operationally suitable across the entire period to conduct defensive SD tasks. This reflects that they comprise missile- and torpedo-armed air, surface, and submarine assets able to effectively strike at, and defend against, the full range of potential enemy forces.

Due to not meeting the counting rules for equipment, PN and PAF assets are not captured in the MPD although of course the interested reader can find details in *The Military Balance*. Regarding US forces, these comprise varying aircraft carriers over time (of the *Forrestal*, *Kitty Hawk* and later *Nimitz* Classes); *Arleigh Burke* I and II and *Spruance* Class destroyers, and cruisers of the *California* and *Ticonderoga* Classes. The air wing of the various aircraft carriers comprises for the most part of different versions of F/A-18 *Hornet* aircraft.

On issues of offensive Resilience the Philippines are counted as being at zero, due to lacking necessary operational capabilities. In turn US forces have an assessed

strong Resilience of well over 30, due to their operational need being to conduct SD strikes and this amply being serviced by carrier-borne aircraft and supporting ships.

### **Integrated Net Assessments Overview**

Neither the Philippines or the USN displayed substantive changes to their level of military capability across the study period. Due to the extent of their relative inferiority and superiority over most adversaries, this lack of change did not affect the position of either in the balance of power against nations regardless of the latter's improvements in their own military capability. The single exception is China, whose dramatic improvements moved Beijing from clear inferiority into closer parity with the US. The following summary judgements are made regarding the Philippines' relative military advantage over each of its competitors in the SCS, with the annual details of these assessments (189 in all) available in [Table B19](#) below.

#### China

Due to all of the Philippines' occupied features falling within China's claim, and various Beijing-controlled territories being sought by Manila, the Philippines has both offensive and defensive territorial objectives regarding China. Regarding defensive SD tasks, two main separate features controlled by the Philippines are claimed by China: Scarborough Shoal (up to and including 2012) and Thitu Island. As Scarborough Shoal is uninhabited, the Philippines is presumed to not be able to rely on US support to defend its claim and due to this is judged clearly inferior to China during 1995–2015. In contrast, Thitu is occupied by Filipino forces and presumed to trigger a USN response to any Chinese armed attack. At this AO, USN forces are assessed as clearly superior until 2005 due to China, until this point, being operationally unsuitable to exercise the full tri-dimensional SC needed to enforce a MEZ against the 7th Fleet. Thereafter, rough parity exists due to Beijing's forces being able to meet these minimum requirements and steadily improving in matters affecting ratings in Asymmetry, Preponderance, Personnel, and Modernity, although never reaching a level approaching superiority to the US. Of the various

KIG sites controlled by China and claimed by Manila, the Philippines are always assessed to be inferior due to their operational unsuitability to enforce a MEZ.

### Malaysia

Due some of the Philippines' occupied features falling within Malaysia's claim and vice versa, the Philippines has both offensive and defensive territorial objectives regarding Kuala Lumpur. Regarding defensive SD tasks, the main feature controlled by the Philippines and claimed by Malaysia is Commodore Reef. As this is occupied by Filipino forces it is presumed to trigger a USN response to any Chinese armed attack. At this AO, USN forces are assessed as clearly superior to Malaysia across the study period due to their rated advantages in Modernity, Resilience, Personnel, Preponderance, and Asymmetry. In turn, of the various KIG features controlled by Malaysia and claimed by Manila, the Philippines are always assessed to be clearly inferior due to their operational unsuitability to enforce a MEZ.

### Taiwan

Due to all of the Philippines' occupied features falling within Taiwan's claim, and various Taipei-controlled territories being sought by Manila, the Philippines has both offensive and defensive territorial objectives regarding Taiwan. However, as the US serves as the security guarantor of both nations an attack by either on the other's territory is considered implausible and not further considered.

### Vietnam

Due to all of the Philippines' occupied KIG features falling within Vietnam's claim, and various Hanoi-controlled territories being sought by Manila, the Philippines has both offensive and defensive territorial objectives regarding Vietnam. Regarding defensive SD tasks, the main feature controlled by the Philippines and claimed by Vietnam is Thitu Island. As this is occupied by Filipino forces it is presumed to trigger a USN response to any Vietnamese armed attack. At this AO, USN forces are

assessed as clearly superior to Vietnam across the study period due to advantages in their ratings for Modernity, Resilience, Personnel, Preponderance, and Asymmetry. In turn, of the various KIG features controlled by Vietnam and claimed by Manila, the Philippines are always assessed to be clearly inferior due to their operational unsuitability to enforce a MEZ.

### **Predicted Behaviours Overview**

Based on the above military power assessments, the following overview predictions can be made about the Philippines behaviour towards other competitor nations over time in terms of initiating and responding to efforts to resolve the status of disputes. These can also be considered on an annual basis by correlating the colour-coding of the yearly Integrated Assessment with the predicted behaviours summary provided with it at [Table B3](#).

#### All Parties/All Locations – Defensive Realism (Gains Less Sensitive)

Offensively, the Philippines should not seek to initiate confrontations at the various locations. It should, with all states and regardless of the balance of power, focus on either allowing the issue to lie fallow or initiate and escalate cooperative dispute resolution strategies, and definitely not initiate distinctive (para)militarisation or attempts at conquest. Defensively, the Philippines should engage in self-initiated (i.e. without reference to the behaviours of other nations) generic normal control-enforcing behaviours (including military ones) such as printing maps and making statements of sovereignty, though avoiding initiating distinctive coercion.

Offensively or defensively, when responding to other states' cooperative or confrontational initiatives, the Philippines should seek to de-escalate confrontations if and when these occur, focus on cooperative dispute resolution strategies, and seek to build distinctive cooperation. However, defensively, it may infrequently respond to non-(para)militarised coercion with increased coercion, such as escalating to a formal protest in response to some declaratory action, but it should

avoid escalating to any form of distinctive coercion, let alone a (para)militarised threat. Also, it will defensively respond to distinctive (para)militarised strategies in kind, though with a decreased level of coercion, seeking to de-escalate the confrontation, but will still defend itself strongly if attacked. Defensively, it should also aim to avoid lethal or potentially lethal force against poachers.

### Offensive Scenarios

*All Parties - Offensive Realism/ Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

Due to the Philippines clear power inferiority it should behave as weak state where it has offensive objectives (including Scarborough Shoal from 2013), effectively analogous to a DR(GLS) nation.<sup>358</sup>

### Defensive Scenarios

#### China

*Offensive Realism – Balance of Power/Power Transition Theory*

At Thitu, as a defensively superior military power (with US help) until 2005, with parity thereafter, during this entire period Manila should be willing to respond to normal cooperation or coercion in kind, potentially (de)escalating its response as it sees fit. It should also be willing to offer up to practical normal economic, paramilitary or military cooperative measures regarding the area. Manila should demur most offers of distinctive cooperation and match forms of distinctive

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<sup>358</sup> Of course an alternative interpretation is that Manila would seek to constantly militarise disputes with the intent of forcing the US to support it should it be attacked by another claimant. But given the noted reluctance from Washington to support Manila at Scarborough Shoal, where the Philippines was defending its holdings and had not acted as a provocateur, it is considered unlikely that the Philippines would pursue such a high-risk strategy.

coercion in kind, including the threat or use of (para)military force, though aiming to ultimately decrease level of tension over time.

The exceptions are, firstly, if Manila is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently respond by initiating non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – although it will seek to de-escalate if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing defensive confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if the aggressor matches its coercion, even progressing to militarised strategies if at an opportune balance of power.

Separately, Manila should self-initiate (i.e. without reference to the behaviours of other nations) the full range of practical normal exploitation and control-enforcing behaviours, including acts such as making declarations of sovereignty and print maps claiming an area. The Philippines may also occasionally initiate distinctly coercive control-enforcing acts, but these should be rare and focussed on non-militarised activities, to minimise costs. And in the defence of its territory against poachers, it should be willing to occasionally use potentially lethal force, such as warning shots, particularly as part of an escalation following less-intense measures. Manila will of course defend itself strongly if attacked.

In terms of theory-specific behavioural differences; when responding to Beijing during superiority, under PTT, since superiority is not an opportune moment for aggressive behaviour, Manila *should not initiate or escalate distinctive paramilitary or militarised coercion* – only engaging in such strategies in response to their use first by its adversary. But under BOP, Manila *may indeed respond by initiating such activities* (but is far from certain to), with a view to heading-off further threats. These preferences under the theories reverse once the Philippines enters rough parity with China in 2005.

At Scarborough Shoal, which is treated as a defensive objective for Manila up to and including 2012, when it is seized by Beijing, the Philippines is clearly inferior across this entire time period. Hence Manila should behave as a weak state.

*Offensive Realism – Balance of Power/Power Transition Theory*

At Thitu, as a defensively superior military power (with US help) until 2005, with parity thereafter, during this entire period Manila, when responding to efforts by Beijing to resolve the dispute, should strongly favour escalating confrontational strategies. In particular, it should respond in kind and with escalation to the threat or use of distinctive coercive strategies against it; and be readily willing to use warning shots or lethal force in defence of its territory against Chinese poachers. It will of course also defend itself strongly if attacked. Manila should offer or accept no more than limited cooperation.

Separately, Manila should self-initiate (i.e. without reference to the behaviours of other nations) generic practical economic exploitation and control-enforcing behaviours such as building civilian, paramilitary or military infrastructure, or despatching patrols and conducting exercises. These self-initiated behaviours will span the full range of normal and distinctly coercive activities – the Revisionist is comfortable engaging in distinctive militarised coercion prophylactically, to ward-off expected aggression from other states.

In terms of theory-specific behavioural differences; while superior, under PTT, when responding to anything short of distinctive (para)militarisation from Beijing, Manila should react with escalating *non-(para)militarised* distinctive coercive strategies while seeking to avoid being the first to begin distinctive (para)militarisation. However, under BOP, Manila should react with escalating distinctive coercive *(para)militarised* strategies, including crisis initiation. These preferences under the theories reverse once the Philippines enters rough parity with China in 2005.



At Scarborough Shoal, the Philippines is clearly inferior across the entire time period until it is seized by China in 2012. Hence during this period Manila should behave as a weak state.

### Malaysia

#### *Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

As a defensively superior military power (with US support) throughout the period, when responding to efforts by Malaysia to claim Commodore Reef, the Philippines should be willing to respond to normal cooperation or coercion in kind, potentially (de)escalating its response as it sees fit. It should also be willing to offer up to practical normal economic, paramilitary or military cooperative measures regarding the area. Manila should demur most offers of distinctive cooperation and match forms of distinctive coercion in kind, including the threat or use of (para)military force, though aiming to ultimately decrease level of tension over time.

The exceptions are, firstly, if Manila is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently respond by initiating non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – although it will seek to de-escalate if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing defensive confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if the aggressor matches its coercion, even progressing to militarised strategies if at an opportune balance of power.

Separately, Manila should self-initiate (i.e. without reference to the behaviours of other nations) the full range of practical normal exploitation and control-enforcing behaviours, including acts such as making declarations of sovereignty and print maps claiming an area. The Philippines may also occasionally initiate distinctly coercive control-enforcing acts, but these should be rare and focussed on non-

militarised activities, to minimise costs. And in the defence of its territory against poachers, it should be willing to occasionally use potentially lethal force, such as warning shots, particularly as part of an escalation following less-intense measures. Manila will of course defend itself strongly if attacked.

In terms of theory-specific behavioural differences; when responding to Kuala Lumpur under PTT, since superiority is not an opportune moment for aggressive behaviour, Manila *should not initiate or escalate distinctive paramilitary or militarised coercion* – only engaging in such strategies in response to their use first by its adversary. But under BOP, Manila *may indeed respond by initiating such activities* (but is far from certain to), with a view to heading-off further threats.

#### *Offensive Realism – Balance of Power/Power Transition Theory*

As a defensively superior military power (with US support) throughout the period, when responding to efforts by Malaysia to claim Commodore Reef, Manila should strongly favour escalating confrontational strategies. In particular, it should respond in kind and with escalation to the threat or use of distinctive coercive strategies against it; and be readily willing to use warning shots or lethal force in defence of its territory against Malaysian poachers. It will of course also defend itself strongly if attacked. Manila should offer or accept no more than limited cooperation.

Separately, Manila should self-initiate (i.e. without reference to the behaviours of other nations) generic practical economic exploitation and control-enforcing behaviours such as building civilian, paramilitary or military infrastructure, or despatching patrols and conducting exercises. These self-initiated behaviours will span the full range of normal and distinctly coercive activities – the Revisionist is comfortable engaging in distinctive militarised coercion prophylactically, to ward-off expected aggression from other states.

In terms of theory-specific behavioural differences; under PTT, when responding to anything short of distinctive (para)militarisation from Malaysia, the Philippines

should react with escalating *non-(para)militarised* distinctive coercive strategies while seeking to avoid being the first to begin distinctive militarisation. However, under BOP, Manila should react with escalating distinctive coercive *(para)militarised* strategies, including crisis initiation.

### Taiwan

*Offensive Realism (Gains Sensitive)/Offensive Realism – Balance of Power/Power Transition Theory*

As the US is the security guarantor of both nations, neither should seek to antagonise the other, instead aiming to resolve the dispute through cooperative strategies.

### Vietnam

*Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

As a defensively superior military power (with US support) throughout the period, when responding to efforts by Vietnam to claim Thitu Island, the Philippines should be willing to respond to normal cooperation or coercion in kind, potentially (de)escalating its response as it sees fit. It should also be willing to offer up to practical normal economic, paramilitary or military cooperative measures regarding the area. Manila should demur most offers of distinctive cooperation and match forms of distinctive coercion in kind, including the threat or use of (para)military force, though aiming to ultimately decrease level of tension over time.

The exceptions are, firstly, if Manila is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently respond by initiating non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – although it will seek to de-escalate if these actions do not deliver the intended results. Secondly, if

pursuing a deliberate strategy of increasing defensive confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if the aggressor matches its coercion, even progressing to militarised strategies if at an opportune balance of power.

Separately, Manila should self-initiate (i.e. without reference to the behaviours of other nations) the full range of practical normal exploitation and control-enforcing behaviours, including acts such as making declarations of sovereignty and print maps claiming an area. The Philippines may also occasionally initiate distinctly coercive control-enforcing acts, but these should be rare and focussed on non-militarised activities, to minimise costs. And in the defence of its territory against poachers, it should be willing to occasionally use potentially lethal force, such as warning shots, particularly as part of an escalation following less-intense measures. Manila will of course defend itself strongly if attacked

In terms of theory-specific behavioural differences; when responding to Hanoi under PTT, since superiority is not an opportune moment for aggressive behaviour, *Manila should not initiate or escalate distinctive paramilitary or militarised coercion* – only engaging in such strategies in response to their use first by its adversary. But under BOP, *Manila may indeed respond by initiating such activities* (but is far from certain to), with a view to heading-off further threats.

#### *Offensive Realism – Balance of Power/Power Transition Theory*

As a superior military power (with US support) throughout the period, when responding to efforts by Vietnam to claim Thitu Island, Manila should strongly favour escalating confrontational strategies. In particular, it should respond in kind and with escalation to the threat or use of distinctive coercive strategies against it; and be readily willing to use warning shots or lethal force in defence of its territory against Vietnamese poachers. It will of course also defend itself strongly if attacked. Manila should offer or accept no more than limited cooperation.

Separately, Manila should self-initiate (i.e. without reference to the behaviours of other nations) generic practical economic exploitation and control-enforcing behaviours such as building civilian, paramilitary or military infrastructure, or despatching patrols and conducting exercises. These self-initiated behaviours will span the full range of normal and distinctly coercive activities – the Revisionist is comfortable engaging in distinctive militarised coercion prophylactically, to ward-off expected aggression from other states.

In terms of theory-specific behavioural differences; under PTT, when responding to anything short of distinctive (para)militarisation from Hanoi, the Philippines should react with escalating *non-(para)militarised* distinctive coercive strategies while seeking to avoid being the first to begin distinctive militarisation. However, under BOP, Manila should react with escalating *(para)militarised* distinctive coercive strategies, including crisis initiation.

Table B19: Philippines Summary

	Geographic Feature and Type						
	Scarborough Shoal (Sec B)	Thitu Island (CoG)			Itu Aba Island (CoG)	Comodore Reef (Sec B)	Assorted Spratly (KIG) Features (Various)**
Claimed	CHN, PHL, TWN,	CHN, PHL, TWN, VNM			CHN, PHL, TWN, VNM	CHN, MLY, PHL, TWN, VNM	CHN, VNM
Controlled	PHL (to 2011) – CHN (2012+)	PHL/USN*			TWN	PHL/USN*	Various
Average Distance Base	340	810			840	910	Various
Philippine Operational Need	SD Pre-2012 / EMEZ	SD - CHN	SD - TWN	SD - VNM	N/A	SD - MLY	Various AA/MEZ & EMEZ
1995	I	S	N/A	S	N/A	S	I
1996	I	S	N/A	S	N/A	S	I
1997	I	S	N/A	S	N/A	S	I
1998	I	S	N/A	S	N/A	S	I
1999	I	S	N/A	S	N/A	S	I
2000	I	S	N/A	S	N/A	S	I
2001	I	S	N/A	S	N/A	S	I
2002	I	S	N/A	S	N/A	S	I
2003	I	S	N/A	S	N/A	S	I
2004	I	S	N/A	S	N/A	S	I

2005	I	S	N/A	S	N/A	S	I
2006	I	AP	N/A	S	N/A	S	I
2007	I	AP	N/A	S	N/A	S	I
2008	I	RP	N/A	S	N/A	S	I
2009	I	RP	N/A	S	N/A	S	I
2010	I	RP	N/A	S	N/A	S	I
2011	I	RP	N/A	S	N/A	S	I
2012	I	RP	N/A	S	N/A	S	I
2013	I	RP	N/A	S	N/A	S	I
2014	I	RP	N/A	S	N/A	S	I
2015	I	RP	N/A	S	N/A	S	I

Notes: AO distances from Cavite naval base. Rating Scale: I: Inferior; DP: Disadvantaged Parity; RP: Rough Parity; AP: Advantaged Parity; S: Superior. Feature Type: CoG: Centre of Gravity; Sec-A: Secondary, Amphibious Assault Possible, Sec-B: Secondary, construction effort or naval patrolling required; N/A: Not Applicable. \*Reflects USN involvement. \*\*Barque Canada Reef and Amboyna Cay (VNM) and Subi, Mischief, and Fiery Cross Reefs (CHN). Total number of assessments: 189.

## Taiwan

### **Operational Assessment and Force Development Overview**

The ROCN and ROCAF are assessed as being operationally suitable to meet the nation's offensive and defensive needs during 1995–2015. This reflects that across the period both services were relatively large, maintained advanced equipment and well-trained forces able to execute the full range of SD and SC functions necessary for defensive and MEZ missions.

In more detail, the ORBAT for both services improved steadily between 1995–2015. The ROCAF's key developments occurred in the first five years; then, a substantial enlargement and modernisation of its force structure occurred through the acquisition of close to 300 F-16, *Mirage 2000-5* and *Ching-Kuo* fighters to replace about 200 older F-5 aircraft. Of the new platforms, both the F-16 and *Ching-Kuo* had ASCM capabilities. The ROCN in turn also replaced across the 21 years its older *Fu Yang*, *Po Yang* and *Kun Yang* Class destroyers with *Chien Yang* and *Kee Lung* vessels, with the latter in particular being equipped with long range (166 km) SM-2 air defence missiles. These granted the asymmetry to potentially shoot down adversary aircraft before they could launch their own weapons at Taiwanese forces. Destroyer improvements were complimented by advances and upgrades in smaller MSC, such as improved Jin *Chinag* Corvettes and *Ching Yang* Frigates, together with improvements to Taiwan's *Hai Lung* class submarines. Further, Taiwan introduced the long-range supersonic HF III ASCM on various ships from 2007, providing one of the most potent regional ASCM to its forces.

Due to their size and further growth, Taiwan's forces generally displayed strong Resilience in most missions across the investigation period, with SD strikes at Pratas Island being able to involve over 100 assets. In turn, in all MEZ and many EMEZ situations, well over three critical assets are available in most years.



## **Integrated Net Assessments Overview**

Taiwan displayed noticeable improvements in its various capabilities across the study period, with these generally outpacing similar efforts by most competitors with the exception of China. Hence during 1995–2015, Taipei’s position in the balance of power improved against most countries with the exclusion of its main and most dangerous competitor. The following summary judgements are made regarding Taiwan’s relative military advantage over each of its competitors in the SCS, with the annual details of these assessments (234 in all) available in [Table B20](#) below.

### Brunei

Taiwan’s key territorial objectives, should it be an active Revisionist, are offensive as geographic features claimed by Brunei are also sought by Taipei, whereas those islands already controlled by Taiwan are not contested by Bandar Seri Begawan. The specific operational need is assessed to be the establishment of an EMEZ at Brunei’s only claimed feature of Louisa Reef, to either control the area through a naval presence or to allow the building of a suitable outpost. Taiwan is assessed to maintain clear superiority from 1995–2015 due to its relative advantages in the factors of Personnel, Preponderance, Modernity, and Asymmetry.

### China

Due to the entirety of Beijing and Taiwan’s claims overlapping, Taipei has both offensive and defensive territorial objectives with respect to China. From a Revisionist perspective, Taiwan’s key targets would be Beijing’s centres of gravity at Woody Island, suited to AA/MEZ operations, together with Mischief, Subi, and Fiery Cross Reefs, with these suited to EMEZ before land reclamation began and AA/MEZ in 2015. Also potentially attractive is control of Macclesfield Bank and, once effectively occupied by China, Scarborough Shoal in 2012, with these requiring EMEZ operations while outposts are built or to enforce an enduring naval presence.

Defensively, Taipei has a core need to protect its facilities at Pratas and Itu Aba islands through SD operations. For such efforts, only Taiwanese forces are considered as while Taipei holds a defensive security agreement with the US, this has never been suggested as applying to territories in the SCS.

Based on these considerations, and regarding defensive actions at Pratas Island, Taiwan is assessed as having superiority against Beijing until 2004 and later various degrees of parity. This reflects that Pratas is the only AO within the reach of the vast bulk of Taiwan's air force hence China must be able to enforce a tri-dimensional MEZ to assault the island and is unable to achieve this from an AAW capacity until 2004 when long-range fighters are introduced. Thereafter, even as numbers of Chinese aircraft and long-range SAM increase, together with advanced ships and submarines, the weight of aircraft-launched ASCM Taiwan can bring to bear (in addition to sea-launched missiles), together with superior training and the innate difficulties of amphibious assault prevent China from achieving superiority. The situation is different at Itu Aba as the island is beyond the reach of almost all Taiwanese combat aircraft, hence the forces able to contest with Beijing are much smaller. This serves as a particular highlight of the impact of range on military power. Despite this, at the island Taipei maintains clear superiority until 2000 due to its submarine forces, as Beijing lacks an ASW SC capability deployable to the area until that date. Thereafter, Chinese improvements matters affecting Modernity, Asymmetry, Personnel, and Preponderance work to slowly wear down Taiwan's advantage although never to the degree of providing clear superiority.

Regarding offensive actions, Taiwan at Woody Island maintains a degrading rough parity in military power with China. This reflects that while the island is within the range of Chinese aircraft and beyond that of Taiwanese fighters, the ROCN deploys sufficient defensive interceptors and long-range ASCM to make the success of any defensive action by Beijing questionable in the early years of the study period. But China's consistent investment in increasing numbers of offensive and defensive missiles, launched by advanced ships, aircraft and submarines, gradually reduces Taiwan's prospects across 21 years. At Macclesfield Bank, Taiwan enjoys several

years of clear superiority, reflecting that certain of its fighter aircraft can reach the area while none of China's can. This means that Beijing's ASCM-equipped bombers are likely to be destroyed by Taipei's fighters before they can launch their weapons, while ROCN ship weapons also outrange those of their PLAN competitors. But from 2000 to 2012, Beijing's introduction of longer-ranged ship-launched weapons, defensive interceptor missiles, fighters and other modern assets brings the two nations to rough parity. By 2013 Taipei's advances are outpaced and China is clearly superior. Finally, Taiwan has EMEZ opportunities at Scarborough Shoal and Mischief, Subi, and Fiery Cross Reefs. At the former, by the time it is treated as defensive objective for China in 2013, the balance of forces has shifted to render Taiwan clearly inferior. For the latter, the ROCN can hold a decreasing degree of parity until 2013, when cumulative Chinese improvements render it clearly inferior. However, in 2015 the land reclamation at the islands opens them to AA/MEZ. This potential for conquest and fortification by rapid assault serves to return Taiwan to a position of rough parity.

### Malaysia

As all of Kuala Lumpur's occupied features fall within Taiwan's claim but not vice versa, Taipei's key potential territorial objectives, should it be an active Revisionist, are offensive. The notable focus of any efforts at conquest would be Swallow Reef, suitable for attack through AA/MEZ. Throughout the study period Taiwan is assessed as clearly superior due to its clear advantages in the criteria of Personnel, Preponderance, Modernity, and Asymmetry.

### The Philippines

Due to Itu Aba falling within Manila's claim, and all of the Filipino controlled and claimed territories in the SCS also being sought by Taipei, Taiwan has both offensive and defensive territorial objectives regarding the Philippines. However, as the US serves as the security guarantor of both nations an attack by either on the other's territory is considered implausible and not further considered.

## Vietnam

due to Hanoi's claims over the Paracels and Spratlys overlapping with Taiwan's, Taipei has both offensive and defensive territorial objectives regarding Vietnam. Should Taiwan prove a Revisionist, its key target would be Vietnam's centre of gravity in the Spratlys, Spratly Island; with this a suitable target for AA/MEZ.

Defensively, Taipei has needs to conduct SD operations to protect Itu Aba Island. In these AO the primary contest is between Taiwanese surface and submarine forces against Vietnamese air assets, as ROCAF air assets cannot reach these areas and Hanoi is assessed to have minimal long-range surface ship capability until 2012, supported by submarines entering service in 2015.

Based on these considerations, Taiwan is assessed as clearly superior to Vietnam at both Itu Aba and Spratly Island between 1995–2015. This essentially reflects that at both locations Taiwan is able to deploy sufficient ship-based SAM as to be able to render the Vietnamese air-threat effectively negligible, particularly as for almost the entire period such missiles have pronounced range asymmetry over Vietnamese ASuW weapons. Even the introduction of Hanoi's submarines is largely offset by the substantial preponderance in ASW assets held by Taipei, in addition to consistently superior training. Similarly, the introduction of modern surface forces by Vietnam is offset by their ship-launched ASCM being dramatically outnumbered by defending missiles and also out-ranged by Taiwanese ASCM. Hence Taipei's forces face minimal risk while maintaining a strong ability to destroy any effort by Vietnam.

### **Predicted Behaviours Overview**

Based on the above military power assessments, the following overview predictions can be made about Taiwan's behaviour towards other competitor nations over time in terms of initiating and responding to efforts to resolve the status of disputes.

These can also be considered on an annual basis by correlating the colour-coding of the yearly Integrated Assessment with the predicted behaviours summary provided with it at Table B3.

### All Parties/All Locations – Defensive Realism (Gains Less Sensitive)

Offensively, Taiwan should not seek to initiate confrontations at the various locations. It should, with all states and regardless of the balance of power, focus on either allowing the issue to lie fallow or initiate and escalate cooperative dispute resolution strategies, and definitely not initiate distinctive (para)militarisation or attempts at conquest. Defensively, Taiwan should engage in self-initiated (i.e. without reference to the behaviours of other nations) generic normal control-enforcing behaviours (including military ones) such as printing maps and making statements of sovereignty, though avoiding initiating distinctive coercion.

Offensively or defensively, when responding to other states' cooperative or confrontational initiatives, Taiwan should seek to de-escalate confrontations if and when these occur, focus on cooperative dispute resolution strategies, and seek to build distinctive cooperation. However, defensively, it may infrequently respond to non-(para)militarised coercion with increased coercion, such as escalating to a formal protest in response to some declaratory action, but it should avoid escalating to any form of distinctive coercion, let alone a (para)militarised threat. Also, it will defensively respond to distinctive (para)militarised strategies in kind, though with a decreased level of coercion, seeking to de-escalate the confrontation, but will still defend itself strongly if attacked. Defensively, it should also aim to avoid lethal or potentially lethal force against poachers.

### Brunei

#### *Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

As a clearly superior power from an offensive perspective, Taiwan should engage in a mixed set of (de)escalating normal cooperative and coercive strategies to gain control, and broadly respond to Brunei's behaviour in kind.

Taiwan should not generally initiate or escalate distinctive cooperation or coercion. If such acts are initiated against it, Taipei should not accept distinctive cooperation; and aim to match distinctive coercion – if non-(para)militarised – or allow the matter to go fallow if (para)militarised. Under either scenario, Taiwan would aim to restrain further escalation and then de-escalate over time to the normal range of strategies.

The exceptions are, firstly, if Taiwan is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently initiate non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – including a land-grab. However, it will seek to de-escalate (aside from a land-grab) if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if its coercion is matched, potentially progressing to militarised strategies and a land-grab if at an opportune balance of power.

In terms of theory-specific behavioural differences; under BOP Taipei *may* (but is far from certain to) over time *initiate and escalate* distinctive paramilitary or militarised coercion, potentially including a land grab to seize the territory. Under PTT, Taiwan *should not initiate* distinctive paramilitary or militarised coercion.

#### *Offensive Realism – Balance of Power/Power Transition Theory*

As a clearly superior power from an offensive perspective, Taiwan should strongly favour coercive strategies. It should engage in very limited if any cooperation.

In terms of theory-specific behavioural differences; under BOP Taiwan should initiate and rapidly escalate distinctive *(para)militarised strategies*, including overt attacks. Under PTT, Taipei should initiate and escalate distinctive *non-(para)militarised strategies*, aiming to avoid crisis initiation or conflict. While it will match any distinctive (para)militarisation by Brunei, it should avoid further

escalation and ultimately aim to reduce tensions, although it will respond strongly if attacked.

## China

### *Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

#### *Offensive Objectives*

At Macclesfield Bank, Taiwan has superiority until 1999, then forms of parity until 2012, and becomes inferior in 2013. During superiority and parity, Taipei should engage in a mixed set of (de)escalating normal cooperative and coercive strategies to gain control, and broadly respond to China's behaviour in kind.

Taiwan should not generally initiate or escalate distinctive cooperation or coercion. If such acts are initiated against it, Taipei should not accept distinctive cooperation; and aim to match distinctive coercion – if non-(para)militarised – or allow the matter to go fallow if (para)militarised. Under either scenario, Taiwan would aim to restrain further escalation and then de-escalate over time to the normal range of strategies.

The exceptions are, firstly, if Taiwan is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently initiate non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – including a land-grab. However, it will seek to de-escalate (aside from a land-grab) if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if its coercion is matched, potentially progressing to militarised strategies and a land-grab if at an opportune balance of power.

In terms of theory-specific behavioural differences; while superior, under BOP Taiwan *may* (but is far from certain to) over time *initiate and escalate* distinctive paramilitary or militarised coercion, potentially including a land grab to seize the territory. Under PTT, Taiwan *should not initiate* distinctive paramilitary or militarised coercion. These trends reverse for the theories from 2000 onwards once China gains military parity. And from 2013, Taiwan should behave as a weak state.

Taiwan's behaviours should align with the above regarding its respective periods of power superiority, parity and inferiority at Woody Island and Subi, Mischief and Fiery Cross Reefs. At Scarborough Shoal, as Taiwan is inferior from 2013 (the year from which Beijing is considered to treat the site as a defensive objective), it should behave as weak state from this year onwards.

### *Defensive Objectives*

Defensively, at Pratas and Itu Aba Islands, Taiwan has superiority at these areas until 2003 and 1999 respectively, and then always maintains at least some form of parity. Hence, in responding to efforts by Beijing to gain control, Taipei should be willing to respond to normal cooperation or coercion in kind, potentially (de)escalating its response as it sees fit. It should also be willing to offer up to practical normal economic, paramilitary or military cooperative measures regarding the area. Taiwan should demur most offers of distinctive cooperation and match forms of distinctive coercion in kind, including the threat or use of (para)military force, though aiming to ultimately decrease level of tension over time.

The exceptions are, firstly, if Taiwan is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently respond by initiating non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – although it will seek to de-escalate if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing defensive confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if the aggressor



matches its coercion, even progressing to militarised strategies if at an opportune balance of power.

Separately, Taiwan should self-initiate (i.e. without reference to the behaviours of other nations) the full range of practical normal exploitation and control-enforcing behaviours, including acts such as making declarations of sovereignty and print maps claiming an area. Taipei may also occasionally initiate distinctly coercive control-enforcing acts, but these should be rare and focussed on non-militarised activities, to minimise costs. And in the defence of its territory against poachers, it should be willing to occasionally use potentially lethal force, such as warning shots, particularly as part of an escalation following less-intense measures. Taiwan will of course defend itself strongly if attacked.

In terms of theory-specific behavioural differences; during superiority when responding to China under PTT, since superiority is not an opportune moment for aggressive behaviour, Taiwan *should not initiate or escalate distinctive paramilitary or militarised coercion* – only engaging in such strategies in response to their use first by its adversary. But under BOP, Taiwan *may indeed respond by initiating such activities* (but is far from certain to), with a view to heading-off further threats. These trends reverse under the theories once China achieves military parity.

#### *Offensive Realism – Balance of Power/Power Transition Theory*

##### *Offensive Objectives*

At Macclesfield Bank, Taiwan has superiority until 1999, then forms of parity until 2012, and becomes inferior in 2013. During superiority and parity, Taiwan should strongly favour coercive strategies. It should engage in very limited if any cooperation.

In terms of theory-specific behavioural differences; while superior, under BOP Taipei should initiate and rapidly escalate distinctive (para)militarised strategies,

including overt attacks. Under PTT, Taiwan should initiate and escalate distinctive non-(para)militarised strategies, aiming to avoid crisis initiation or conflict. While it will match any distinctive (para)militarisation by China, it should avoid further escalation and ultimately aim to reduce tensions, although it will respond strongly if attacked. These trends reverse for the theories once China gains military parity. And from 2013, Taiwan should behave as a weak state.

Taiwan's behaviours should align with the above regarding its respective periods of power superiority, parity and inferiority at Woody Island and Subi, Mischief and Fiery Cross Reefs. But a particular test of OR occurs at these reefs as China becomes clearly superior in 2013, hence Taiwan should act as weak state, but then these become suitable for AA operations in 2015. Such an opportunity for conquest should, ahead of foreseeable cementing of Beijing's control over these islands by building fortifications deploying defensive weapons, should present a tempting target to an incorrigible Revisionist.

At Scarborough Shoal as Taiwan is inferior when Beijing assumes control in 2012, it should behave as weak state from when China seizes the area.

### *Defensive Objectives*

Defensively, at Pratas and Itu Aba Islands, Taiwan has superiority at these areas until 2003 and 1999 respectively, and then always maintains at least some form of parity. Hence, in responding to efforts by Beijing to gain control, Taipei should strongly favour escalating confrontational strategies. In particular, it should respond in kind and with escalation to the threat or use of distinctive coercive strategies against it; and be readily willing to use warning shots or lethal force in defence of its territory against mainland Chinese poachers. It will of course also defend itself strongly if attacked. Taipei should offer or accept no more than limited cooperation.

Separately, Taiwan should self-initiate (i.e. without reference to the behaviours of other nations) generic practical economic exploitation and control-enforcing

behaviours such as building civilian, paramilitary or military infrastructure, or despatching patrols and conducting exercises. These self-initiated behaviours will span the full range of normal and distinctly coercive activities – the Revisionist is comfortable engaging in distinctive militarised coercion prophylactically, to ward-off expected aggression from other states.

In terms of theory-specific behavioural differences; under PTT, while at power superiority and responding to anything short of distinctive (para)militarisation from Beijing, Taipei should react with escalating *non-(para)militarised* distinctive coercive strategies while seeking to avoid being the first to begin distinctive militarisation. However, under BOP, Taipei should react with escalating *(para)militarised* distinctive coercive strategies, including crisis initiation. These trends reverse under the theories when China reaches military parity.

### Malaysia

#### *Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

As a clearly superior power from an offensive perspective, Taiwan should engage in a mixed set of (de)escalating normal cooperative and coercive strategies to gain control, and broadly respond to Malaysia's behaviour in kind.

Taiwan should not generally initiate or escalate distinctive cooperation or coercion. If such acts are initiated against it, Taipei should not accept distinctive cooperation; and aim to match distinctive coercion – if non-(para)militarised – or allow the matter to go fallow if (para)militarised. Under either scenario, Taiwan would aim to restrain further escalation and then de-escalate over time to the normal range of strategies.

The exceptions are, firstly, if Taiwan is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently initiate non-(para)militarised distinctive coercion, or if the balance of power is opportune,

even paramilitary or militarised actions – including a land-grab. However, it will seek to de-escalate (aside from a land-grab) if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if its coercion is matched, potentially progressing to militarised strategies and a land-grab if at an opportune balance of power.

In terms of theory-specific behavioural differences; under BOP Taiwan *may* (but is far from certain to) over time *initiate and escalate* distinctive paramilitary or militarised coercion, potentially including a land grab to seize the territory. Under PTT, Taiwan *should not initiate* distinctive paramilitary or militarised coercion.

#### *Offensive Realism – Balance of Power/Power Transition Theory*

As a clearly superior power from an offensive perspective, Taiwan should strongly favour coercive strategies. It should engage in very limited if any cooperation.

In terms of theory-specific behavioural differences; under BOP Taiwan should initiate and rapidly escalate distinctive *(para)militarised strategies*, including overt attacks. Under PTT, Taiwan should initiate and escalate distinctive *non-(para)militarised strategies*, aiming to avoid crisis initiation or conflict. While it will match distinctive (para)militarisation by Malaysia, it should avoid escalation and ultimately aim to reduce tensions but will respond strongly if attacked.

#### The Philippines

#### *Offensive Realism/Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

As the US is the security guarantor of both nations, neither should seek to antagonise the other, instead aiming to resolve the dispute through cooperative strategies.

## Vietnam

*Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

### *Offensive Objectives: Spratly Island*

As a clearly superior power from an offensive perspective, Taiwan should engage in a mixed set of (de)escalating normal cooperative and coercive strategies to gain control, and broadly respond to Hanoi's behaviour in kind.

Taiwan should not generally initiate or escalate distinctive cooperation or coercion. If such acts are initiated against it, Taipei should not accept distinctive cooperation; and aim to match distinctive coercion – if non-(para)militarised – or allow the matter to go fallow if (para)militarised. Under either scenario, Taiwan would aim to restrain further escalation and then de-escalate over time to the normal range of strategies.

The exceptions are, firstly, if Taiwan is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently initiate non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – including a land-grab. However, it will seek to de-escalate (aside from a land-grab) if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if its coercion is matched, potentially progressing to militarised strategies and a land-grab if at an opportune balance of power.

In terms of theory-specific behavioural differences; under BOP Taiwan *may* (but is far from certain to) over time *initiate and escalate* distinctive paramilitary or militarised coercion, potentially including a land grab to seize the territory. Under PTT, Taiwan *should not initiate* distinctive paramilitary or militarised coercion.

### *Defensive Objectives: Itu Aba*

As a clearly superior power from a defensive perspective, it should be willing to respond to Hanoi's normal cooperation or coercion in kind, potentially (de)escalating its response as it sees fit. It should also be willing to offer up to practical normal economic, paramilitary or military cooperative measures regarding the area. Taiwan should demur most offers of distinctive cooperation and match forms of distinctive coercion in kind, including the threat or use of (para)military force, though aiming to ultimately decrease level of tension over time.

The exceptions are, firstly, if Taiwan is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently respond by initiating non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – although it will seek to de-escalate if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing defensive confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if the aggressor matches its coercion, even progressing to militarised strategies if at an opportune balance of power.

Separately, Taiwan should self-initiate (i.e. without reference to the behaviours of other nations) the full range of practical normal exploitation and control-enforcing behaviours, including acts such as making declarations of sovereignty and print maps claiming an area. Taipei may also occasionally initiate distinctly coercive control-enforcing acts, but these should be rare and focussed on non-militarised activities, to minimise costs. And in the defence of its territory against poachers, it should be willing to occasionally use potentially lethal force, such as warning shots, particularly as part of an escalation following less-intense measures. Taiwan will of course defend itself strongly if attacked.

In terms of theory-specific behavioural differences; during superiority, when responding to Hanoi under PTT, since superiority is not an opportune moment for

aggressive behaviour, Taiwan *should not initiate or escalate distinctive paramilitary or militarised coercion* – only engaging in such strategies in response to their use first by its adversary. But under BOP, Taiwan *may indeed respond by initiating such activities* (but is far from certain to), with a view to heading-off further threats.

#### *Offensive Realism – Balance of Power/Power Transition Theory*

##### *Offensive Objectives: Spratly Island*

As a clearly superior power from an offensive perspective, Taiwan should strongly favour coercive strategies. It should engage in very limited if any cooperation.

In terms of theory-specific behavioural differences; under BOP Taiwan should initiate and rapidly escalate distinctive *(para)militarised strategies*, including overt attacks. Under PTT, Taipei should initiate and escalate distinctive *non-(para)militarised strategies*, aiming to avoid crisis initiation or conflict. While it will match any distinctive (para)militarisation by Hanoi, it should avoid further escalation and ultimately aim to reduce tensions, although it will respond strongly if attacked.

##### *Defensive Objectives: Itu Aba*

As a clearly superior power from a defensive perspective, when responding to efforts by Hanoi to resolve the dispute, Taipei should strongly favour escalating confrontational strategies. In particular, it should respond in kind and with escalation to the threat or use of distinctive coercive strategies against it; and be readily willing to use warning shots or lethal force in defence of its territory against Vietnamese poachers. It will of course also defend itself strongly if attacked. Taipei should offer or accept no more than limited cooperation.

Separately, Taiwan should self-initiate (i.e. without reference to the behaviours of other nations) generic practical economic exploitation and control-enforcing

behaviours such as building civilian, paramilitary or military infrastructure, or despatching patrols and conducting exercises. These self-initiated behaviours will span the full range of normal and distinctly coercive activities – the Revisionist is comfortable engaging in distinctive militarised coercion prophylactically, to ward-off expected aggression from other states.

In terms of theory-specific behavioural differences; under PTT, when responding to anything short of distinctive (para)militarisation from Hanoi, Taipei should react with escalating *non-(para)militarised* distinctive coercive strategies while seeking to avoid being the first to begin distinctive militarisation. However, under BOP, Taiwan should react with escalating *(para)militarised* distinctive coercive strategies, including crisis initiation.



Table B20: Taiwan Summary

	Geographic Feature and Type													
	Pratas Island (CoG)	Scarborough Shoal (Sec B)	Macclesfield Bank (Sec B)	Woody Island (CoG)	Subi Reef (Sec B/A)	Thitu Island (CoG)	Itu Aba Island (CoG)			Mischief Reef (Sec B/A)	Fiery Cross Reef (Sec B/A)	Spratly Island (CoG)	Swallow Reef (CoG)	Louisa Reef (Sec B)
Claimed	CHN, TWN	CHN, PHL, TWN	CHN, TWN	CHN, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM			CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, TWN, VNM	CHN, MLY, TWN, VNM	BRN, CHN, MLY, TWN, VNM
Controlled	TWN	CHN	CHN	CHN	CHN	PHL	TWN			CHN	CHN	VNM	MLY	N/A
Distance from Bases	420	870	950	1050	1430	1450	1500			1500	1650	1800	1830	1960
Taiwanese Operational Need	SD	EMEZ	EMEZ	AA/MEZ	EMEZ - AA/ MEZ	N/A	SD - CHN	SD - PHL	SD - VNM	EMEZ - AA/MEZ	EMEZ - AA/MEZ	AA/MEZ	AA/MEZ	EMEZ - BRN
1995	S	N/A	S	AP	RP	N/A	S	N/A	S	RP	RP	S	S	S
1996	S	N/A	S	AP	RP	N/A	S	N/A	S	RP	RP	S	S	S
1997	S	N/A	S	AP	RP	N/A	S	N/A	S	RP	RP	S	S	S
1998	S	N/A	S	AP	RP	N/A	S	N/A	S	RP	RP	S	S	S
1999	S	N/A	S	AP	RP	N/A	S	N/A	S	RP	RP	S	S	S
2000	S	N/A	AP	AP	DP	N/A	RP	N/A	S	DP	DP	S	S	S

2001	S	N/A	AP	AP	DP	N/A	RP	N/A	S	DP	DP	S	S	S
2002	S	N/A	AP	AP	DP	N/A	RP	N/A	S	DP	DP	S	S	S
2003	S	N/A	AP	AP	DP	N/A	RP	N/A	S	DP	DP	S	S	S
2004	AP	N/A	RP	AP	DP	N/A	RP	N/A	S	DP	DP	S	S	S
2005	AP	N/A	RP	RP	DP	N/A	DP	N/A	S	DP	DP	S	S	S
2006	AP	N/A	RP	RP	RP	N/A	DP	N/A	S	RP	RP	S	S	S
2007	AP	N/A	RP	RP	RP	N/A	DP	N/A	S	RP	RP	S	S	S
2008	AP	N/A	DP	RP	DP	N/A	DP	N/A	S	DP	DP	S	S	S
2009	AP	N/A	DP	RP	DP	N/A	DP	N/A	S	DP	DP	S	S	S
2010	AP	N/A	DP	RP	DP	N/A	DP	N/A	S	DP	DP	S	S	S
2011	AP	N/A	DP	RP	DP	N/A	DP	N/A	S	DP	DP	S	S	S
2012	RP	I	DP	RP	DP	N/A	DP	N/A	S	DP	DP	S	S	S
2013	RP	I	I	DP	I	N/A	DP	N/A	S	I	I	S	S	S
2014	RP	I	I	DP	I	N/A	DP	N/A	S	I	I	S	S	S
2015	RP	I	I	DP	DP	N/A	DP	N/A	S	DP	DP	S	S	S

Notes: AO distances from Zuoying naval and air bases. Rating Scale: I: Inferior; DP: Disadvantaged Parity; RP: Rough Parity; AP: Advantaged Parity; S: Superior. Feature Type: CoG: Centre of Gravity; Sec-A: Secondary, Amphibious Assault Possible, Sec-B: Secondary, construction effort or naval patrolling required; N/A: Not Applicable. Total number of assessments: 234.

## Vietnam

### **Operational Assessment and Force Development Overview**

The VPN and VPAF's rated Operational Suitability to meet the nation's offensive and defensive needs during 1995–2015 is assessed as being heavily dependent on the specific adversary being faced and the complexity of the task. Offensively, in the nearby Paracels, the full suite of Vietnamese forces is able to deploy in strength, allowing it to mount effective MEZ operations against China. But in the more distant Spratlys, for many years only old and poorly armed VPN assets are assessed as being able to reliably deploy to there, forcing any offensive efforts to rely on the VPAF. And until Hanoi's aircraft gain a 24-hour ASuW strike capability any Vietnamese operations remain vulnerable, even when facing Brunei's limited maritime capabilities. More broadly, Vietnam depends on a handful of airborne ASW assets to enforce persistent SC against submarines. With the retirement of these platforms in 2013, the VPAF and VPN become operationally unsuitable to conduct MEZ and EMEZ operations anywhere that opponents that have submarines – which by that point is every nation bar Brunei. However, for simpler defensive SD tasks the VPAF has an effective ASUW capability, with this augmented by VPN ship and submarine procurements in 2012 and 2015, allowing these forces to credibly threaten states seeking to conquer Spratly Island.

In more detail, the ORBAT for both services improved steadily from 1995–2015. The VPAF in particular upgraded its Su-22 strike aircraft from 2004 to provide all-weather capabilities and inducted advanced and long-range Su-30MK2 multi-role aircraft from 2007. These advances provided the core of Vietnam's offensive and defensive capabilities in the Spratlys. The ASW mission was the focus of four antiquated Be-12 aircraft, with these retiring in 2013.<sup>359</sup> In turn the VPN principally focussed on improving its short-ranged SD capabilities across the period, procuring

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<sup>359</sup> As noted in the MPD, while Vietnam also held quantities of ASW helicopters, these both lack the range to reach the Paracels from Vietnamese bases on land, while the VPN lacks facilities to embark these aboard ships.

numbers of *Tarantul*-class heavy FAC to defend Vietnam's ocean borders while also being able to threaten the Paracels. The most substantial improvements occurred in the final five years of the study period, with *Gepard*-class Frigates and *Kilo*-class submarines serving to provide a long-range ASuW capability while also forcing any opponent that wished to threaten Spratly Island with needing to have capable ASW forces.

Due to Vietnam possessing a reasonably substantial Air Force, its units were rated with reasonably strong Resilience for SD missions and also for the AAW and ASuW elements of SC operations. However, the reliance on the Be-12 placed ASW as the Achilles heel of any Vietnamese efforts to conduct offensive missions.

### **Integrated Net Assessments Overview**

While Vietnam displayed noticeable improvements in its various capabilities across the study period, these generally only matched or were outpaced by similar efforts by most of its competitors. And while Vietnam's position did materially improve against the Philippines (supported by the USN) and Brunei, the USN was sufficiently more potent that these differences had no impact on Hanoi's military power rating against it. Instead, only the chances of operational success against Brunei improved. Hence between 1995–2015 Hanoi's position in the balance of power generally stayed the same or became weaker, except against Brunei. The following summary judgements are made regarding Vietnam's relative military advantage over each of its competitors in the SCS, with the annual details of these assessments (294 in all) available in [Table B21](#) below:

#### **Brunei**

Vietnam's key territorial objectives, should it be an active Revisionist, are offensive as geographic features claimed by Brunei are also sought by Hanoi, whereas those islands already controlled by Vietnam are not contested by Bandar Seri Begawan. The specific operational need is assessed to be the establishment of an EMEZ at

Brunei's only claimed feature of Louisa Reef, to either control the area through a naval presence or to allow the building of a suitable outpost. Due to Hanoi being dependent on the VPAF to deliver an EMEZ, there are only different levels of rough parity between the two forces up to 2011, reflecting that patrolling aircraft cannot provide the same level of persistent defence of amphibious assets as can ships. But with the introduction of modern frigates in 2012, supported by advanced aircraft, Vietnam becomes clearly superior.

## China

Due to the entirety of Beijing and Hanoi's Paracel and Spratly claims overlapping, Vietnam has both offensive and defensive territorial objectives with respect to China. From a Revisionist perspective, Hanoi's key targets would be Beijing's centres of gravity at Woody Island, suited to AA/MEZ operations, together with Mischief, Subi and Fiery Cross Reefs, with these suited to EMEZ before land reclamation began and AA/MEZ in 2015. Defensively, Hanoi has a core need to protect through SD operations its facilities at Spratly Island. In the Paracels Vietnam can count on both the VPAF and VPN being available, whereas in the Spratlys most forces will depend on the VPAF.

Considering these issues, Hanoi is judged clearly inferior in its offensive potential against China. In any attack on Woody Island Vietnamese forces would contend with the full force of Chinese air, surface and submarine SD assets. Even in 1995 these have such preponderance in ASCM and torpedoes, many able to be launched at ranges beyond the reach of the VPN, that the destruction of a Vietnamese invasion force becomes effectively certain. The VPAF's potential to frustrate such an outcome is stymied by the presence in almost equal numbers of Chinese defending fighter aircraft. In the succeeding years Vietnam's position only worsens as Chinese modernisations and training improvements outpace Hanoi's. A similar situation exists at the various Reefs, but with this rendered moot by the low likelihood that Vietnam could impose a consistent ASW perimeter with its limited Be-12 numbers. Due to this, at these locations Hanoi's forces are considered to be operationally

unsuitable to meet the capability requirements of a MEZ and hence inherently inferior to China's military even before the two sides are compared.

From a defensive perspective, Vietnam has brief superiority over China at Spratly Island until 2004, due to Beijing being unable to effect AAW SC over the island until that time and hence being judged operationally unsuitable and inferior in military power. But the introduction of long-range fighter aircraft and defensive missiles brings the two sides to rough parity from 2004, with China's advantage steadily increasing as its improvements outpace Vietnam's. Finally, in 2015 China is judged innately superior, due to comprehensive advantages in training, modernity of assets, ASCM missile-ranges, and having sufficient defensive interceptors to be able to blunt any SD strikes by Vietnam.

### Malaysia

Due to Kuala Lumpur claiming features occupied by Hanoi in the Spratlys and vice versa, Vietnam has both offensive and defensive territorial objectives regarding Malaysia. Should Vietnam prove a Revisionist, its key target would be Malaysia's centre of gravity at Swallow Reef; with this a suitable target for AA/MEZ.

Unfortunately for Hanoi, any such competition would pit principally the VPAF against both Malaysia's air and naval forces, which are better trained, have more modern equipment in larger quantities, and generally possess practical preponderance and frequently range asymmetry. Hence Malaysia is generally able to fire first, in quantities sufficient to destroy Vietnamese forces, while using better equipment and operating under air cover able to resoundingly defeat the VPAF. Thus, Vietnam's military power is rated as clearly inferior due to comparative factors until 2013, when Hanoi also loses the potential to conduct ASW effectively against Malaysia's submarines and becomes operationally unsuitable to mount further amphibious attacks.

More positive for Vietnam is its potential to defend the two features claimed by Malaysia, Amboyna Cay and Barque Canada Reef, from any attack. At both

locations, VPAF aircraft can launch ASuW that outrange Malaysian defensive SAM while also holding sufficient advantages in AAM as to be able to sweep aside defending RMAF aircraft. At the Reef, suited to an EMEZ assault by Kuala Lumpur, Vietnam's forces have sufficient preponderance to be considered clearly superior during 1995–2015. At the Cay, suited to an AA/MEZ operation, a more even match between the two forces leads to rough parity until 2010 when Malaysia's lack of heavy amphibious assets renders it operationally unsuitable to conduct such an attack.

### The Philippines

Due to all of the Philippines' occupied features falling within Vietnam's claim, and likewise a range of features occupied by Hanoi being sought by Manila, Vietnam has both offensive and defensive territorial objectives regarding the Philippines. Regarding offensive tasks, the main feature controlled by the Philippines and claimed by Vietnam is Thitu Island. As this is occupied by Filipino forces it is presumed to trigger a USN response to any Vietnamese armed attack. At this AO, USN forces are assessed as clearly superior to Vietnam's across the study period due to advantages in the criteria of Modernity, Resilience, Personnel, Preponderance, and Asymmetry. In turn, of the various Spratly features controlled by Hanoi and claimed by Manila, the Philippines are always assessed to be clearly inferior due to their operational unsuitability to enforce a MEZ.

### Taiwan

Due to the entirety of Taipei and Hanoi's Parcel and Spratly claims overlapping, Vietnam has both offensive and defensive territorial objectives with respect to Taiwan. From a Revisionist perspective, Hanoi's key target would be Taipei's centres of gravity at Itu Aba Island, suited to AA/MEZ operations. Defensively, Vietnam has a core need to protect through SD operations its facilities at Spratly Island. Regarding both sets of objectives, Hanoi is rated as clearly inferior from 1995–2015. This reflects that the Taiwanese naval forces that will face the VPAF (since the AO

are beyond ROCAF aircraft range) have superior training, broadly more modern equipment, and SAM defences that almost always outrange, and always very much outnumber, the ASUW weapons Vietnamese aircraft can launch. Hence Taipei's forces can fire first, with more modern weapons, in sufficient quantities to destroy defending (or attacking) Vietnamese forces while also being able to absorb the strikes any might launch on them. Also, Vietnam loses the capacity to defend against Taiwan's submarines from 2013, rendering it operationally unsuitable to conduct AA/MEZ operations.

### **Predicted Behaviours Overview**

Based on the above military power assessments, the following overview predictions can be made about Vietnam's behaviour towards other competitor nations over time in terms of initiating and responding to efforts to resolve the status of disputes. These can also be considered on an annual basis by correlating the colour-coding of the yearly Integrated Assessment with the predicted behaviours summary provided with it at [Table B3](#).

#### All Parties/All Locations – Defensive Realism (Gains Less Sensitive)

Offensively, Vietnam should not seek to initiate confrontations at the various locations. It should, with all states and regardless of the balance of power, focus on either allowing the issue to lie fallow or initiate and escalate cooperative dispute resolution strategies, and definitely not initiate distinctive (para)militarisation or attempts at conquest. Defensively, Vietnam should engage in self-initiated (i.e. without reference to the behaviours of other nations) generic normal control-enforcing behaviours (including military ones) such as printing maps and making statements of sovereignty, though avoiding initiating distinctive coercion.

Offensively or defensively, when responding to other states' cooperative or confrontational initiatives, Vietnam should seek to de-escalate confrontations if and when these occur, focus on cooperative dispute resolution strategies, and seek to



build distinctive cooperation. However, defensively, it may infrequently respond to non-(para)militarised coercion with increased coercion, such as escalating to a formal protest in response to some declaratory action, but it should avoid escalating to any form of distinctive coercion, let alone a (para)militarised threat. Also, it will defensively respond to distinctive (para)militarised strategies in kind, though with a decreased level of coercion, seeking to de-escalate the confrontation, but will still defend itself strongly if attacked. Defensively, it should also aim to avoid lethal or potentially lethal force against poachers.

### Brunei

#### *Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

As a roughly equal military power between 1995-2011, and superior from 2012, during this period Hanoi should engage in a mixed set of (de)escalating normal cooperative and coercive strategies to gain control, and broadly respond to Brunei's behaviour in kind. Hanoi should not generally initiate or escalate distinctive cooperation or coercion. If such acts are initiated against it, Vietnam should not accept distinctive cooperation; and aim to match distinctive coercion – if non-(para)militarised – or allow the matter to go fallow if (para)militarised. Under either scenario, Hanoi would aim to restrain further escalation and then de-escalate over time to the normal range of strategies.

The exceptions are, firstly, if Vietnam is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently initiate non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – including a land-grab. However, it will seek to de-escalate (aside from a land-grab) if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if its coercion is matched, potentially progressing to militarised strategies and a land-grab if at an opportune balance of power.

In terms of theory-specific behavioural differences; while at parity, under PTT Hanoi *may* (but is far from certain to) over time *initiate and escalate* distinctive paramilitary or militarised coercion, potentially including a land grab to seize the territory. Under BOP, Hanoi *should not initiate* distinctive paramilitary or militarised coercion. These trends reverse for the theories from 2010 onwards once Vietnam gains military superiority.

#### *Offensive Realism – Power Transition Theory*

As a roughly equal military power between 1995-2011, and superior from 2012, Hanoi should strongly favour coercive strategies. It should engage in very limited if any cooperation.

In terms of theory-specific behavioural differences; while at parity, under PTT Vietnam should initiate and rapidly escalate distinctive *(para)militarised strategies*, including overt attacks. Under BOP, Hanoi should initiate and escalate distinctive *non-(para)militarised strategies*, aiming to avoid crisis initiation or conflict. While it will match any distinctive (para)militarisation by Brunei, it should avoid further escalation and ultimately aim to reduce tensions, although it will respond strongly if attacked. These trends reverse for the theories from 2012 onwards once Vietnam gains military superiority.

#### China

#### *Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

##### *Offensive Objectives*

From an offensive perspective, as a consistently inferior military power Vietnam should behave as weak state towards China, analogous to a DR(GLS) nation, on areas such as Woody Island or the various Spratly Reefs.

### *Defensive Objectives*

Regarding defensive situations at Spratly Island, Vietnam held defensive superiority until 2003, rough parity between 2004-2014, and then was inferior in 2015. Hence up to and including 2014, in responding to efforts by Beijing to gain control, Vietnam should respond to normal cooperation or coercion in kind, potentially (de)escalating its response as it sees fit. It should also be willing to offer up to practical normal economic, paramilitary or military cooperative measures regarding the area. Vietnam should demur most offers of distinctive cooperation and match forms of distinctive coercion in kind, including the threat or use of (para)military force, though aiming to ultimately decrease level of tension over time.

The exceptions are, firstly, if Vietnam is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently respond by initiating non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – although it will seek to de-escalate if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing defensive confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if the aggressor matches its coercion, even progressing to militarised strategies if at an opportune balance of power.

Separately, Vietnam should self-initiate (i.e. without reference to the behaviours of other nations) the full range of practical normal exploitation and control-enforcing behaviours, including acts such as making declarations of sovereignty and print maps claiming an area. Hanoi may also occasionally initiate distinctly coercive control-enforcing acts, but these should be rare and focussed on non-militarised activities, to minimise costs. And in the defence of its territory against poachers, it should be willing to occasionally use potentially lethal force, such as warning shots, particularly as part of an escalation following less-intense measures. Vietnam will of course defend itself strongly if attacked.

In terms of theory-specific behavioural differences; during superiority, when responding to China under PTT, since superiority is not an opportune moment for aggressive behaviour, Hanoi *should not initiate or escalate distinctive paramilitary or militarised coercion* – only engaging in such strategies in response to their use first by its adversary. But under BOP, Vietnam *may indeed respond by initiating such activities* (but is far from certain to), with a view to heading-off further threats. Such trends reverse under the theories once China reaches parity in 2004; and Vietnam should behave as a weak state in 2015.

### *Offensive Realism – Balance of Power/Power Transition Theory*

#### *Offensive Objectives*

From an offensive perspective, as a consistently inferior military power Vietnam should behave as weak state towards China, analogous to a DR(GLS) nation, on areas such as Woody Island or the various Spratly Reefs.

#### *Defensive Objectives*

Regarding defensive situations at Spratly Island, Vietnam held defensive superiority until 2003, rough parity between 2004-2014, and then was inferior in 2015. Hence up to and including 2014, in responding to efforts by Beijing to gain control, Hanoi should strongly favour escalating confrontational strategies. In particular, it should respond in kind and with escalation to the threat or use of distinctive coercive strategies against it; and be readily willing to use warning shots or lethal force in defence of its territory against Chinese poachers. It will of course also defend itself strongly if attacked. Hanoi should offer or accept no more than limited cooperation.

Separately, Hanoi should self-initiate (i.e. without reference to the behaviours of other nations) generic practical economic exploitation and control-enforcing behaviours such as building civilian, paramilitary or military infrastructure, or despatching patrols and conducting exercises. These self-initiated behaviours will

span the full range of normal and distinctly coercive activities – the Revisionist is comfortable engaging in distinctive militarised coercion prophylactically, to ward-off expected aggression from other states.

In terms of theory-specific behavioural differences; when at superiority, under PTT, when responding to anything short of distinctive (para)militarisation from China, Vietnam should react with escalating *non-(para)militarised* distinctive coercive strategies while seeking to avoid being the first to begin distinctive militarisation. However, under BOP, Hanoi should react with escalating *(para)militarised* distinctive coercive strategies, including crisis initiation. Such trends reverse under the theories once China reaches parity in 2004; and Vietnam should behave as a weak state in 2015.

### Malaysia

*Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

#### *Offensive Objectives*

From an offensive perspective, as a consistently inferior military power Vietnam should behave as weak state towards China, analogous to a DR(GLS) nation, regarding any efforts to gain control of Swallow Reef.

#### *Defensive Objectives*

From a defensive perspective, Vietnam is a clearly superior power at Barque Canada Reef between 1995-2015. At Amboyna Cay, between 1995-2009 Vietnam holds rough power parity until 2010, when it becomes militarily superior.

During the period Vietnam is at power superiority or parity at both locations, in responding to any efforts by Malaysia to gain control, Hanoi should be willing to respond to normal cooperation or coercion in kind, potentially (de)escalating its

response as it sees fit. It should also be willing to offer up to practical normal economic, paramilitary or military cooperative measures regarding the area. Hanoi should demur most offers of distinctive cooperation and match forms of distinctive coercion in kind, including the threat or use of (para)military force, though aiming to ultimately decrease level of tension over time.

The exceptions are, firstly, if Vietnam is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently respond by initiating non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – although it will seek to de-escalate if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing defensive confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if the aggressor matches its coercion, even progressing to militarised strategies if at an opportune balance of power.

Separately, Vietnam should self-initiate (i.e. without reference to the behaviours of other nations) the full range of practical normal exploitation and control-enforcing behaviours, including acts such as making declarations of sovereignty and print maps claiming an area. Hanoi may also occasionally initiate distinctly coercive control-enforcing acts, but these should be rare and focussed on non-militarised activities, to minimise costs. And in the defence of its territory against poachers, it should be willing to occasionally use potentially lethal force, such as warning shots, particularly as part of an escalation following less-intense measures. Vietnam will of course defend itself strongly if attacked.

In terms of theory-specific behavioural differences; when at superiority and responding to Kuala Lumpur under PTT, since superiority is not an opportune moment for aggressive behaviour, Hanoi *should not initiate or escalate distinctive paramilitary or militarised coercion* – only engaging in such strategies in response to their use first by its adversary. But under BOP, Hanoi *may indeed respond by initiating such activities* (but is far from certain to), with a view to heading-off

further threats. Of course, such trends reverse and the theories for where and when Vietnam is at parity, providing an opportunity to compare and contrast behaviours at Barque Canada Reef and Amboyna Cay.

### *Offensive Realism – Balance of Power/Power Transition Theory*

#### *Offensive Objectives*

From an offensive perspective, as a consistently inferior military power Vietnam should behave as weak state towards China, analogous to a DR(GLS) nation, regarding any efforts to gain control of Swallow Reef.

#### *Defensive Objectives*

From a defensive perspective, Vietnam is a clearly superior power at Barque Canada Reef between 1995-2015. At Amboyna Cay, between 1995-2009 Vietnam holds rough power parity until 2010, when it becomes militarily superior.

During the period Vietnam is at power superiority or parity at both locations, in responding to any efforts by Malaysia to gain control, Hanoi should strongly favour escalating confrontational strategies. In particular, it should respond in kind and with escalation to the threat or use of distinctive coercive strategies against it; and be readily willing to use warning shots or lethal force in defence of its territory against Malaysian poachers. It will of course also defend itself strongly if attacked. Hanoi should offer or accept no more than limited cooperation.

Separately, Vietnam should self-initiate (i.e. without reference to the behaviours of other nations) generic practical economic exploitation and control-enforcing behaviours such as building civilian, paramilitary or military infrastructure, or despatching patrols and conducting exercises. These self-initiated behaviours will span the full range of normal and distinctly coercive activities – the Revisionist is

comfortable engaging in distinctive militarised coercion prophylactically, to ward-off expected aggression from other states.

In terms of theory-specific behavioural differences; when at power superiority, under PTT, when responding to anything short of distinctive (para)militarisation from Kuala Lumpur, Hanoi should react with escalating *non-(para)militarised* distinctive coercive strategies while seeking to avoid being the first to begin distinctive militarisation. However, under BOP, Hanoi should react with escalating *(para)militarised* distinctive coercive strategies, including crisis initiation. Of course, such trends reverse and the theories for where and when Vietnam is at parity, providing an opportunity to compare and contrast behaviours at Barque Canada Reef and Amboyna Cay.

### The Philippines

*Defensive Realism (Gains Sensitive) – Balance of Power/Power Transition Theory*

#### *Offensive Objectives*

From an offensive perspective, as a consistently inferior military power Vietnam should behave as weak state towards Manila, analogous to a DR(GLS) nation, regarding any efforts to gain control of Thitu Island.

#### *Defensive Objectives*

As a consistently superior defensive military power, in responding to efforts by Manila to gain control of any of its possessions, Hanoi it should be willing to respond to normal cooperation or coercion in kind, potentially (de)escalating its response as it sees fit. It should also be willing to offer up to practical normal economic, paramilitary or military cooperative measures regarding the area. Hanoi should demur most offers of distinctive cooperation and match forms of distinctive



coercion in kind, including the threat or use of (para)military force, though aiming to ultimately decrease level of tension over time.

The exceptions are, firstly, if Vietnam is pursuing an opportunistic mixed strategy involving occasional distinctive coercion. In this case it may infrequently respond by initiating non-(para)militarised distinctive coercion, or if the balance of power is opportune, even paramilitary or militarised actions – although it will seek to de-escalate if these actions do not deliver the intended results. Secondly, if pursuing a deliberate strategy of increasing defensive confrontation, it may initiate non-(para)military distinctive coercion and continue escalation even if the aggressor matches its coercion, even progressing to militarised strategies if at an opportune balance of power.

Separately, Vietnam should self-initiate (i.e. without reference to the behaviours of other nations) the full range of practical normal exploitation and control-enforcing behaviours, including acts such as making declarations of sovereignty and print maps claiming an area. Hanoi may also occasionally initiate distinctly coercive control-enforcing acts, but these should be rare and focussed on non-militarised activities, to minimise costs. And in the defence of its territory against poachers, it should be willing to occasionally use potentially lethal force, such as warning shots, particularly as part of an escalation following less-intense measures. Vietnam will of course defend itself strongly if attacked.

In terms of theory-specific behavioural differences; when responding to Manila under PTT, since superiority is not an opportune moment for aggressive behaviour, Hanoi *should not initiate or escalate distinctive paramilitary or militarised coercion* – only engaging in such strategies in response to their use first by its adversary. But under BOP, Vietnam *may indeed respond by initiating such activities* (but is far from certain to), with a view to heading-off further threats.

## *Offensive Realism – Balance of Power/Power Transition Theory*

### *Offensive Objectives*

From an offensive perspective, as a consistently inferior military power Vietnam should behave as weak state towards Manila, analogous to a DR(GLS) nation, regarding any efforts to gain control of Thitu Island.

### *Defensive Objectives*

As a consistently superior defensive military power, in responding to efforts by Manila to gain control of any of its possessions, Hanoi should strongly favour escalating confrontational strategies. In particular, it should respond in kind and with escalation to the threat or use of distinctive coercive strategies against it; and be readily willing to use warning shots or lethal force in defence of its territory against Filipino poachers. It will of course also defend itself strongly if attacked. Hanoi should offer or accept no more than limited cooperation.

Separately, Vietnam should self-initiate (i.e. without reference to the behaviours of other nations) generic practical economic exploitation and control-enforcing behaviours such as building civilian, paramilitary or military infrastructure, or despatching patrols and conducting exercises. These self-initiated behaviours will span the full range of normal and distinctly coercive activities – the Revisionist is comfortable engaging in distinctive militarised coercion prophylactically, to ward-off expected aggression from other states.

In terms of theory-specific behavioural differences; under PTT, when responding to anything short of distinctive (para)militarisation from Manila, Hanoi should react with escalating non-(para)militarised distinctive coercive strategies while seeking to avoid being the first to begin distinctive militarisation. However, under BOP, Vietnam should react with escalating militarised strategies, including crisis initiation.

## Taiwan

*All Locations - Defensive Realism (Gains Sensitive)/Offensive Realism – Balance of Power/Power Transition Theory*

From offensive and defensives perspectives, as a consistently inferior power Vietnam should behave as weak state towards Taiwan, analogous to a DR(GLS) nation, at all SCS locations where the two are in dispute.

Table B21: Vietnam Summary

	Geographic Feature and Type													
	Woody Island (CoG)	Spratly Island (CoG)		Fiery Cross (Sec B/A)	Subi Reef (Sec B/A)	Thitu Island (CoG)	Itu Aba Island (CoG)	Barque Canada Reef (Sec B)		Amboyna Cay (Sec A)		Swallow Reef (CoG)	Mischief Reef (Sec B/A)	Louisa Reef (Sec B)
Claimed	CHN, TWN, VNM	CHN, TWN, VNM		CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, MLY, TWN, VNM		CHN, MLY, TWN, VNM		CHN, MLY, TWN, VNM	CHN, PHL, TWN, VNM	BRN, CHN, PHL, TWN, VNM
Controlled	CHN	VNM		CHN	CHN	PHL/USN*	TWN	VNM		VNM		MLY	CHN	NA
Distance from Bases	450	460		480	540	560	590	600		610		700	730	750
Vietnamese Operational Need	AA/MEZ	SD - CHN	SD - TWN	EMEZ - AA/MEZ	EMEZ - AA/MEZ	AA/MEZ	AA/MEZ	SD - MLY	SD - PHL	SD - MLY	SD - PHL	AA/MEZ	EMEZ - AA/MEZ	Various AA/MEZ & EMEZ
1995	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
1996	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
1997	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
1998	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
1999	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
2000	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
2001	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
2002	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
2003	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
2004	I	AP	I	I	I	I	I	S	S	AP	S	I	I	AP
2005	I	AP	I	I	I	I	I	S	S	AP	S	I	I	AP

2006	I	RP	I	I	I	I	I	S	S	AP	S	I	I	AP
2007	I	RP	I	I	I	I	I	S	S	AP	S	I	I	AP
2008	I	RP	I	I	I	I	I	S	S	AP	S	I	I	AP
2009	I	RP	I	I	I	I	I	S	S	AP	S	I	I	AP
2010	I	DP	I	I	I	I	I	S	S	S	S	I	I	AP
2011	I	DP	I	I	I	I	I	S	S	S	S	I	I	AP
2012	I	DP	I	I	I	I	I	S	S	S	S	I	I	S
2013	I	DP	I	I	I	I	I	S	S	S	S	I	I	S
2014	I	DP	I	I	I	I	I	S	S	S	S	I	I	S
2015	I	I	I	I	I	I	I	S	S	S	S	I	I	S

Notes: Woody Island distances from Da Nang bases, Spratly distances from Cam Ranh Bay bases. Rating Scale: I: Inferior; DP: Disadvantaged Parity; RP: Rough Parity; AP: Advantaged Parity; S: Superior. Feature Type: CoG: Centre of Gravity; Sec-A: Secondary, Amphibious Assault Possible, Sec-B: Secondary, construction effort or naval patrolling required; N/A: Not Applicable. \*Reflects USN involvement. Total number of assessments: 294.

## **Annex C – Theory Analysis Document**

This Annex C partially conducts and also reports in some detail the results of the work undertaken to assess the explanatory power of the various theories under consideration and hence answer the research questions. The overall summary results of this analysis are also reported in Chapter Seven. In total the analytical work was conducted through a Theory Analysis Document (TAD), presented here at Annex C, which defines in more detail key analytical concerns and counting rules, and also an associated Actions and Assessments Database (AAD). The AAD is a series of spreadsheets that apply the TAD rules to a dataset to conduct the actual theory assessment. As research data, the AAD is not included here (although as noted above, this Annex reports the results) however a copy may be requested from Curtin University or the author.

### **Overview**

As discussed in Chapter One, this work aims to answer three key security studies questions of *if*, *how*, and *when*. The means used to answer these questions is to conduct an observational test of five different theoretical models – DR(GS)BOP, DR(GS)PTT, DR(GLS), OR(BOP) and OR(PTT) – which propose different answers to the questions. To conduct such a test requires the development of testable predictions for the models aligned to the questions, and then comparing these to the real world to examine the extent to which they manifest. The more that any theory's forecasts occur more frequently, the greater its explanatory power (i.e., its degree of correctness) in terms of its answers to *if*, *how*, and *when*.

This objective was realised by developing distinctive predictions for the five theories for the types of strategies (including war) that states motivated by each model<sup>360</sup> should prefer, as moderated by the balance of power, as they seek to resolve territorial disputes. These were developed in Chapter Three and summarised there

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<sup>360</sup> In the sense of operating under a worldview that the model describes.

in Table 3.4,<sup>361</sup> which is also provided for reference below as Table C0. Of note, since these forecasts encompass war, state behaviour (in the sense of strategy choices), and balances of power, all the key elements of the research queries are captured. These predictions were further developed in Chapter Six and the MPA into 1,371 annual power assessments and associated strategy forecasts, reflecting the expected behaviours between 1995–2015 for six states involved to varying degrees in territorial disputes at 15 sites in the SCS.

Table C0: Summary State-Type Behaviours in Territorial Disputes

Power Inferiority	Power Parity	Power Superiority
<p><b>Irrational State:</b> Initiate and respond with distinctive coercive actions.</p> <p><b>OR/DR State:</b> Focus on Cooperative resolution.</p> <p><b>OR/DR State:</b> Defend in face of military attack.</p>	<p><b>OR(PTT):</b> Focus on initiating and responding with escalating distinctive coercive <u>(para)militarised</u> strategies, including <b>major conquest</b>.</p> <p><b>OR(BOP):</b> Focus on initiating and responding with escalating distinctive coercive <u>non-(para)militarised</u> strategies.</p>	<p><b>OR(PTT):</b> Focus on initiating and responding with escalating distinctive coercive <u>non-(para)militarised</u> strategies.</p> <p><b>OR(BOP):</b> Focus on initiating and responding with escalating distinctive coercive <u>(para)militarised</u> strategies, including <b>major conquest</b>.</p>
	<p><b>DR(GS)BOP:</b> Focus on initiating, and responding in kind to, normal coercive or cooperative strategies. Will use strongly mixed strategies. Will respond in kind to distinctive coercion in defence; but show restraint in offence.</p>	<p><b>DR(GS)BOP:</b> Same as for DR(GS)BOP at power parity, but may initiate and respond with escalating distinctive coercive strategies, including <b>minor conquest</b>, in offence should normal strategies fail.</p>
	<p><b>DR(GS)PTT:</b> As for DR(GS)PTT at power superiority, but may initiate and respond with escalating distinctive coercive strategies, including <b>minor conquest</b>, in offence should normal strategies fail.</p>	<p><b>DR(GS)PTT:</b> Focus on initiating, and responding in kind to, normal coercive or cooperative strategies. Will use strongly mixed strategies. Will respond in kind to distinctive coercion in defence; but show restraint in offence.</p>
	<p><b>DR(GLS):</b> Focus on initiating and escalating cooperative strategies, including to distinctive levels, and show restraint in response to coercion.</p>	
<p><b>OR/DR State:</b> Focus on general control-enhancing behaviours in occupied territories.</p>		

<sup>361</sup> And of course, essentially identical tables but with more precise representations of balances of power are presented and used in Chapters Five and Six. These representations are interchangeable.

The methodology now used to assess these predictions, and answer the research questions, is a mixed focussed comparison (qualitative) and statistical correlative (quantitative) test that is conducted in two parts. Firstly, the actual strategy choices made by the states in each of the equivalent 1,371 instances must be analysed against historical data to identify which model best explains each individual observed result. This work is essentially a qualitative analysis of nations' behaviour against the frameworks in Chapter Three and results in 1,371 assessments of nations' "state-type", such as that a country one year acted as an OR(BOP) state. Secondly, the individual outcomes are summed together and quantitatively assessed against the key research questions. The theory for which predicted results are observed most frequently, as noted above, has the greatest explanatory for *if, how, and when*.

To conduct this process requires firstly obtaining a comprehensive dataset of actions, then defining the conceptual and analytical process for how these are used to identify motivations, and finally conducting the analysis and reporting results. Importantly, a formal process and associated counting rules (i.e., analytical guidelines) are needed to support the structured, repeatable conduct of the qualitative assessment in particular. As discussed previously, such structures support the best practice conduct of analysis in the social sciences, as they support clarity of method, reduced contestability of results, and increased likelihood of common (i.e., repeatable) outcomes.

These various tasks are now conducted in the TAD and AAD. The TAD is comprised of three sections. The first briefly describes the dataset used, graciously provided by the National Defence University (NDU) in Washington DC, and describes in detail the conceptual process and counting rules used to translate the actions in this dataset into assessments of states' motivations. This includes rules for a range of dataset specific issues that were not usefully included in Chapter Seven, and includes discussions of how various rules are applied in the AAD. The second describes the detailed nature and operation of the AAD, the set of spreadsheets where the conceptual process is practically applied and annual results are recorded.



The third summarises the individual nations' annual assessment results and examines country trends across the 21 years. The aggregated results of this analysis, and a brief summary of the TAD and AAD overall, are reported in Chapter Seven and used to answer the research questions of *if, how, and when*.

Finally, while the below discussion is conducted in terms of applying the analytical processes and counting rules to the NDU dataset and SCS, these have been deliberately designed to be applicable to any territorial dispute dataset that already captures the relevant information. Alternatively, they may guide the development of new resources that aim to apply the methodology.

### **Section I: Conceptual Process and Counting Rules**

To assess nations' motivations via their strategy choices requires both a comprehensive dataset of actions and then a means to compare these to the scope and direction predictions developed in Chapter Three. The principal information source used was an NDU Excel database comprising 2,675 individual actions conducted by various actors involved in the SCS territorial disputes during 1995–2015. The NDU database seeks to encompass all actions by the six claimant states under investigation (Brunei, China, the Philippines, Malaysia, Taiwan and Vietnam), the US, multilateral organisations such as the Association of Southeast Asian Nations (ASEAN) and a range of other states including Singapore and Indonesia. The data also covers close to 60 geographic features, including the 15 that are the focus of this dissertation.

Each entry in the NDU dataset is contained in a row comprised of multiple columns of information. These provide the date of the action, its classification (according to an NDU typology), the title of the article that reported the action, an article summary, the actor/s initiating the behaviour (e.g., China, or China and Malaysia), the location it relates to (such as Mischief Reef, or the entire SCS), the target of the

action (such as Vietnam, or all the involved parties in the SCS), and the source of the report (such as a newspaper article) and links to it where available.

Of note, the NDU database harnesses a variety of sources not publicly available (including to the author). Due to this, and to pay due regard to the professionalism of the database's authors, the details of the various entries (including assessments of their locations, targets and so-on) were not typically checked and were accepted as accurate. In some instances, exceptions or alterations were made where matters such as article titles seemed to indicate a different assessment should be made and/or the article was also available for review.

In using the dataset, most but not all entries were deemed useful. So, the excluded entries were those that related to states not under investigation (such as Singapore), or those that were duplicates or captured multiple instances of the same event (in which case only one entry was used). Also not generally used were entries that related only peripherally to the areas, disputes and countries under consideration (with this judged from details such as the NDU-assigned location or information in the article summary or title). For example, instances of general cooperation between claimants (such as Malaysia and Vietnam) that were not evidently related to the SCS were not included as part of their territorial-dispute strategies towards one another. However, if "peripheral" actions were opportunely identified<sup>362</sup> and could be interpreted as being relevant, then they were included. For example, most Chinese behaviour towards the US was not relevant. But if Beijing urged Washington to stay out of the region *after* an American statement of support towards the Philippines, then this action would be considered as part of China's strategy towards Manila.

As a result of this process, some 1,638 entries proved relevant to the analysis and were also supplemented by a handful of further items from the author's own

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<sup>362</sup> States aside from the six under consideration were generally deliberately excluded from consideration via filters available on the NDU dataset. However, such nations actions still arose at times due to their relationship with one of the six.

research, resulting in some 1,650 actions used in total. Of note, all further discussion refers to these 1,650 entries. The various entries were utilised as described below to identify states' strategies at MPA locations. Finally, as NDU proprietary information, a copy of the original dataset is not provided here. Interested researchers may approach Dr Phillip Saunders, the Director of NDU's Center for the Study of Chinese Military Affairs.

### **Conceptual Process**

The dissertation uses a mixed focussed comparison and statistical-correlative methodology to assess the explanatory power of the various theories. To achieve this, national motivations were first qualitatively assessed in annual terms (to align with the yearly military power assessments) to identify states' strategies towards MPA locations and claimant states. Then, the results were considered quantitatively looking across the 21-year investigation period. Both processes are now discussed below.

Importantly, the decision was taken to include, when assessing states' strategies, both and directly and indirectly relevant actions (i.e., those with explicit and implicit causal links to a strategy). While the costs and benefits of this approach are discussed in more detail later in this section, this approach was preferred as it allow for the more holistic and realist consideration of nations' strategies.

### **Overview: Qualitative Analysis Process**

So, to assess nations' annual state-types required identifying the scope and direction of the strategies that each country used to further its aims *against each other claimant at each relevant MPA feature* during 1995–2015. This process was conducted through five logical steps described below. In practice these were done in the AAD; and this is described in more detail in the TAD Section II.

## Step One: Classification

For every nation under consideration, it was firstly necessary to identify from its annual pool of actions those that were relevant to each MPA location and competing claimant state. This pool needed to include both actions initiated by the country and its responses to behaviours by other nations.

Conceptually, the direct or indirect relevance of any action (or response) to an MPA site and other claimant(s) was identified by considering its geographic and/or contextual nature. While further details are provided below, in short, geographically directly relevant actions were defined as certain physically localised behaviours (principally paramilitary or military activities) that could be identified as occurring in the immediate proximity of MPA site(s). For such activities, this proximity provided the direct causal link to strategy. Indirectly geographically relevant actions were of the same type but could only be placed more generally in an area, such as the Spratlys or even the SCS, and so could notionally affect all features in that area by default.

In turn, directly contextually relevant behaviours were those that were overtly associated with site(s) by name, such as media releases claiming sovereignty. Indirectly relevant actions were those that overtly or implicitly affected a broader area. These included maps that might encompass (and claim) several MPA sites, or discussions between states (such as Vietnam and Malaysia) on their disputed SCS features, which by implication were considered to apply the MPA locations.

In practice, the requirements for conducting such assessments were well-met by the descriptions of locations and target states in the NDU dataset. Further, the process of conducting this analysis led to the classification of actions into three broad groups, leading to the name of this step. General Actions were activities by a state that related to multiple nations and/or MPA sites, without evidently targeting specific countries; for example, China's nine-dash line maps, or a military patrol by Malaysia "in the Spratlys". Nation-and-Location Relevant Actions were behaviours

identified as part of a state's strategy towards a specific nation and relating to one or more MPA locations; for example, SCS coastguard cooperation agreements between Vietnam and the Philippines. Finally, Location Specific actions were defensive control-enforcing behaviours, such as building paramilitary infrastructure, done by a nation at a specific site that affected all other countries in common.

### Step Two: Assignment and Stacking

Once a nation's annual pool of the various types of actions had been generated, it was necessary to combine or "stack" to these to create coherent lists of acts relevant to each MPA site and competing claimant. Once finalised, each stack would be considered to comprise the nation's annual strategy towards that site and the claimants there.

This step was referred to as "assignment" as it involved assigning the various actions to the location(s) and state(s) where they were deemed relevant, with these identified by consideration of the location and target state data noted in Step One. This stacking process was necessary as the different types of actions of course applied in various measure to different MPA sites and states. So, for example, one year's China stack for the Philippine's Thitu Island might be comprised of a number of General Actions by Beijing affecting the SCS, and then a range of Nation Specific actions conducted towards Manila in general or Thitu specifically. That same year's China stack towards Vietnam's Spratly Island would include the same General Actions, but then Nation Specific behaviours conducted towards Hanoi and Spratly.

Of note, groups of actions were listed in date order to support the consideration of patterns of behaviour, notably for escalating or de-escalating levels of coercion or cooperation over time. Further, where a state had offensive objectives, one stack was created that combined all the action types, and these comprised its strategy towards the occupier. Where a state had defensive objectives, multiple stacks were created to reflect its strategy towards each competing claimant. Each defensive

stack contained the General and Location Specific actions, and the individually appropriate Nation-and-Location relevant behaviours.

### Step Three: Categorisation

Once a stack had been developed, each component action was assigned a category rating based on its alignment with the strategy frameworks in Chapter Three (in particular, [Figure 3.8](#)). So, the publishing of a map claiming sovereignty of a feature would be classed as a normal coercive administrative/legal diplomatic behaviour. Each category was also assigned a numerical code (this example would be “5”) to enable creating charts in Excel to support pattern analysis. This process of assigning numerical codes is discussed in the TAD Section II, but simply reflects a counting of the number of coercive and cooperative categories and assigning each a code. Of note in some instances, an action that applied to an area could still be judged to have no category rating as it did not impose a coercive or cooperative effect.

### Step Four: State-Type Assessment

Each stack of categorised actions was then qualitatively assessed in terms of its pattern-matching alignment with the various theories’ scope and direction predictions to identify the nation’s annual state-type. These are of course described in detail in Chapter Three. The assessments (the process for which is discussed in more detail further below) were informed holistically by factors including the actions’ individual ratings and the balance of power at the site between the nation and the target(s) of its strategy.

While this process was qualitative, additional weighting was placed on distinctive actions (since these are more overtly theory-specific), directly relevant actions (since these have a more direct causal link to strategy), and responses by nations to the acts of others, a matter discussed below. Of note in some instances, a lack of action could also indicate state-type. This too is addressed further below.

Also, different counting rules were applied depending on whether the stack related to offensive or defensive objectives. For the former, all actions were considered to provide useful information as all were treated as part of the nation's deliberate strategy to gain control of the feature. But as noted in Chapter Three, in defensive scenarios all state-types are expected to engage in a range of low-level coercive and indirect cooperative actions without regard to the behaviour of other nations. As such, only distinctly coercive behaviours, directly cooperative ones, and those that could otherwise overtly be identified as relating to another claimant (such as by being a response) were considered.

As a general comment, while in this step more precise identification was preferred (e.g., a DR(GS)PTT state), in many instances only a coarser identification was possible (e.g., a DR state) or even no useful assessment could be made at all. The latter result could occur due to a state's weakness, or because its defensive actions were simply common to all state-types. These various possible outcomes are discussed below in the counting rules.

#### Step Five: Sensitisation and Recording

Finally, the overall assessment of the nation's state-type at each MPA location towards each other claimant was captured, including a narrative description of why the particular decision had been reached. As part of this, any necessary sensitisation (modification) of data was conducted and its impact on decisions noted. For example, if a state made factually incorrect statements on some matter, these could be withdrawn from considering its pattern of behaviours. Or, for example, if a nation conducted a land grab (an OR behaviour) under conditions aligned with Tang's guidance for when such behaviour can also be expected from DR(GLS) states, then this would affect the certainty with which an OR assessment could be made. A list of such sensitisation instances is provided further below.

Once the annual assessment had been concluded, the state-type result (such as DR(GLS)) was transferred to a summary table, similar to the military power tables in

Chapter Six. This captured the state-type and also the nation's position in the military power balance towards that particular adversary at that location and year. These tables are shown in Section III.

### Qualitative Process Illustrations

The conceptual process is illustrated below in Figure C0 with respect to a selection of sites and nations relevant to Malaysia. As may be recalled, Malaysia has four offensive objectives in the SCS (Louisa Reef, with Brunei treated as the most likely defender); Commodore Reef (controlled by the Philippines); and Amboyna Cay and Barque Canada Reef (controlled by Vietnam). In turn, Malaysia holds Swallow Reef, with this contested by China, Taiwan and Vietnam.

For reasons of space, the analytical process is not shown with respect to all these seven scenarios, but instead focusses on Louisa Reef, Amboyna Cay, and China and Taiwan for Swallow Reef. Also, steps Three and Four are shown together; and the information in the Figure is illustrative and does not represent the outcomes of any particular year.

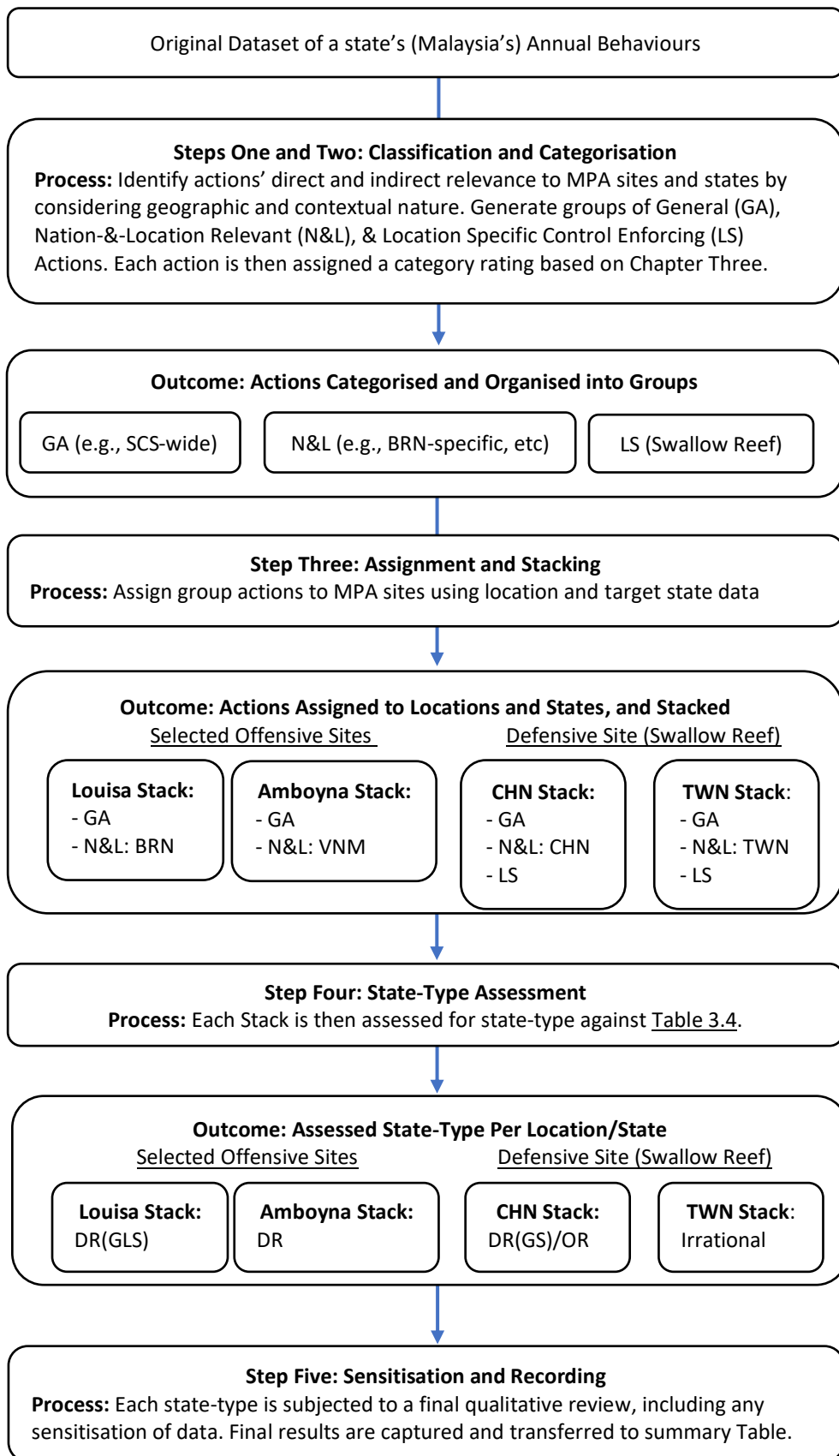
### **Overview: Quantitative Analysis Process**

#### National Totals

Once any nation's total results were available for the 21-year period, these were assessed quantitatively to determine which state-types were most reflected in its outcomes, both in terms of numerical totals and percentages of activity. This was used to both gather data for the overall aggregated assessment, and also to help identify nations' individual predominant state-type, noting this is one of the means used to answer the key research questions as discussed immediately below.



Figure C0: State-Type Annual Qualitative Assessment Process



In support of this, national results were also examined for broader state-type patterns that aligned with those discussed in Chapter Three, such as that OR nations should rapidly favour a shift towards militarised strategies when they assess the balance of power is in their favour. In fact, only Taiwan and China proved to have weakly-relevant patterns, and these supported the assessment (derived from their proportions of state-type activity) that these were DR(GS) nations. All such results and discussion for individual nations is addressed in Section III of the TAD.

### Aggregated Totals Analysis

Finally, all the nation-specific totals were aggregated together, and the results assessed against the six questions (three strong, three weak) noted in Chapter One and Three that are designed to provide mutually reinforcing answers to the key research questions of *if, how, and when*. The six questions are:

- The strong test of *if* asks what proportion of ‘wars’ are initiated by, or conducted in a way consistent with, states behaving in alignment with DR(GLS), DR(GS) or OR. This can now be analysed against [Table 3.4](#), with ‘war’ hereafter defined as either of the practical means of militarised crisis initiation (land grab or major war) reflecting the potential of the former to lead to the latter<sup>363</sup>. This would also be applied if an analyst used [Figure 3.3](#).
- The weaker test of *if* asks what proportion of nations can be positively identified as Peaceful, Opportunistic or Revisionist states. This can now be supported by considering multi-year patterns of state-type results to test for consistency as balances of power shift. Rapid change towards militarisation is predicted by OR, whereas DR predicts more stable and consistent strategy choices, and hence state-type results.

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<sup>363</sup> Noting again Altman’s (2017) observation notes that near half of all land grabs between 1918 and 2006 resulted in either retaliatory land grabs or war.

- The strong test of *how* asks what proportion of states' behaviours align with various theory predictions; or is instead classed as irrational. Irrationality is hereafter defined as initiating or escalating distinctive coercion when at power inferiority.
- The weaker test of *how* asks whether any states can be identified as irrational.
- The strong test of *when* asks what proportion of instances of war occurred in alignment with BOP vice PTT.
- The weaker test of *when* what proportion of aggressive behaviours short of war but risking escalation to it aligned with BOP vice PTT. Such sub-war escalatory behaviours are now considered to include all paramilitary and military coercive diplomacy and crisis initiations actions, excluding the practical militarised means already counted under war, and control-enforcing actions. This reflects coercive diplomatic actions still run the risk of escalation in a very real way. Also included are annual patterns of behaviour composed primarily, or persistently, of distinctive economic and diplomatic coercion. Such actions are typical of an OR state *not* at an opportune balance, hence too indicating a nation's appreciation of BOP vice PTT.

### **Costs and Benefits of the Approach**

Overall, the key benefit of the methodology above is that it enables a holistic consideration of nations' strategies at MPA locations, providing a more informed means to ascertain states' motivations. This is particularly enabled by considering for each site a stack of actions that range from states' declarations affecting the entire SCS to the arrival of warships within its TS. The utility of this approach is that it captures the many ways that nations can pursue their aims. After all, Beijing does not need to sail a fleet to Thitu to make its intentions on the island clear to Manila.

A key cost of the approach is the debatable applicability of some actions as part of deliberate strategies aimed at other nations. For example, China's repeated generic asserts of sovereignty over most of the SCS via the nine-dash line are treated as contextually relevant coercive threats to each nations' feature that lies within this zone. But are such pronouncement truly part of Beijing's individual strategies towards, for example, Taiwan's Itu Aba or Vietnam's Spratly Island? And noting this, might such behaviours not be a weak basis for sweeping judgements of state-type, as sometimes occurs in the AAD when more directly relevant actions are absent? Or when such more specific actions exist, and they contradict the direction of more general behaviours, might not the latter more sensibly be set aside?

Such concerns are addressed by both conceptual and practical means. So, under Realism, states are considered purposeful and rational agents; hence they are deliberately responsible for the actions they take – indeed the notion of deliberate action underpins the definition of strategy. So, when nations take *any* actions relevant to a location they must be considered to be acting consciously, and so all such behaviours should be included when assessing motivation. To reject certain ones (let alone broad swaths) begins to undermine the entire concept of states conducting deliberate strategy, and do so at some arbitrary point. Hence if only General Actions by a nation are available to make an assessment, this must be presumed as a deliberate choice by the target state in question and its motivations assessed in kind. And if more specific behaviours are available, they are provided more qualitative weight, but the general acts are not ignored.

Separately, another cost is that the assessment methodology can generate results that appear, at first glance, intuitively questionable due to one action potentially generating different assessment outcomes at various locations, or for different states at one location, as affected by the balance of power. For example, Manila's call for a demilitarised zone in the entire SCS in 1996 is considered to provide no insight into its motivations towards China at locations such as Subi Reef where it is weak, but to be highly cooperative behaviour at Thitu where it is strong. Similarly, a visit to the Malaysian-controlled Swallow Reef by Malaysia's Prime Minister in 2008

is rated as distinctive coercion towards China and Vietnam, which also claim the site and against which Kuala Lumpur holds defensive parity, but irrational towards Taiwan, which too claims the Reef, but Taipei has clear power superiority.

Yet such results, in fact, reflect the logical reality of the different effects of states' actions where balances of power vary. So, highly cooperative behaviours where a nation is weak and has few, if any, other means to pursue its objectives, logically reveal little of its motivations – yet say much where it is powerful. And Malaysia *does* concurrently assert its strength to China and Vietnam while also behaving foolishly by potentially antagonising Taipei – and in doing so takes a calculated risk. Indeed, such diverse outcomes are hardly a rarity in the international system – North Korea's occasional atomic threats towards South Korea are both a plausible threat to non-nuclear armed Seoul but clearly irrational towards Washington, which would doubtless massively retaliate when American forces in the South were immolated. Yet Pyongyang's threats continue regardless.

Further, the reality of diverse outcomes from single actions is implicitly addressed by states engaging in additional country-specific behaviours to towards others rather than just relying on broad-brush “blunt instruments”. After all, if nations could rely on actions to give consistent results in all cases, it would be more efficient from them to not also conduct any number of further country-specific behaviours – yet they clearly do. Finally, from a counting perspective, the effect on the overall analysis of instances of “irrational” behaviour in particular is reduced by both excluding these from the results (as they cannot be well explained by rational Realism) and not considering them indicate any wider irrationality on the part of a state – allowing the rest of its activities to be considered even-handedly.

Another key limitation is that a range of actions at other SCS areas that could contribute to identifying state-type are not considered. For example, over the investigation period China occasionally behaved distinctively coercively to the Philippines and Vietnam at locations including Reed Bank and Second Thomas Shoal (for Manila) and various sites in Hanoi's mainland EEZ.

Such sites and actions were not considered for reasons including the uncertainty of some locations (due to limited information in the reporting), and the associated difficulties with identifying balances of power, and also the need to put sensible boundaries around the utilised dataset rather than simply selecting all and sundry activities and sites. Most importantly, the study was deliberately conducted within the framework described in Chapter Six: states, rationally, can be expected to pursue territorial objectives at CoG and secondary locations, and so assessing their behaviours at these locations should provide a suitable basis for theory testing.

Finally, a further cost is the complexity of the approach in areas such as the SCS, where many actions and claims overlap. To address this, the dissertation relies on practical counting rules. These are now discussed below, with their application captured in the AAD. Of note, all rules were developed on the principle of attempting to gain the most sensible results from the data and method, balancing the nature of real-world activities against the needs of analytical tractability.

### **Counting Rules: Overall Considerations**

#### **Minimising Data Extrapolation**

Before discussing the counting rules, it is necessary to firstly describe a key principle that was utilised in their development and application: that of minimising data extrapolation. This refers to assessing state's actions in the narrowest appropriate manner (based on the analyst's judgement) in the sense of their geographical remit (i.e., how many MPA locations the action may relate to), the number of nations affected (i.e., minimising consideration of the impact on third parties), and its degree of cooperation or coercion (i.e., normal vice distinctive). To illustrate this with an example, the President of the Philippines might receive, during an otherwise peaceful period, a query during a press conference on what would occur if China attacked Thitu Island. The President could respond that if this occurred then a general conflict might erupt between the two in the SCS. Under the minimal-extrapolation principle, this statement would apply only to those MPA

locations contested by Beijing and Manila; would apply only to China, rather than also being considered an implied threat towards other nations that might also attack Thitu or elsewhere; and would be considered a normal coercive statement of resolve, rather than a distinctive threat of war.

The utility of this approach is that it supports the most defensible and robust analyses of state behaviour at MPA locations, rather than involving actions that are unlikely to be part of relevant strategies, or by seeking to classify as distinctive behaviours what should sensibly be considered as normal actions. While this principle is referred to throughout this section, a more detailed discussion of how it is applied is also conducted at the end of this section, to benefit from the context provided by the discussion of how actions are practically considered.

### **Exercising Judgement in Assessing Categories**

Further, while every effort was taken to minimise data extrapolation and clearly align actions with the category ratings given in Chapter Three, qualitative context was still considered when assigning ratings. For example, a negotiated resolution to a dispute is notionally a highly cooperative behaviour. However, should such an agreement be strongly unfavourable to one party, clearly at odds with its stated or reasonably inferred preferences, and result only after repeated coercion; then a negotiated resolution could be classed as distinctive coercion. In turn, in some instances an action would fall within the rules for relevance but be assessed as having no coercive or cooperative impact and so be judged as a “Not Applicable” (N/A) category rating, since this rating of course captures the level of this impact for an action. Such various instances when they occur are noted in the AAD.

### **Counting Rules: Identifying MPA Strategy-Relevant Actions**

In order to be able to assess states’ motivations, it is necessary to consider their strategy at each MPA site in terms of its scope and direction. In turn, to be able to

do so requires identifying which, of the many actions for each nation captured in the NDU dataset, are relevant to its strategy for each location.

As noted in Chapter Three, relevant actions are identified through proposing logical causal connections between their coercive or cooperative effects and the goal of a state's strategy – in this case MPA sites. Being a geographically defined goal, two main broad causal categories used to identify relevant behaviours. The first was geographic proximity; that is, where actions close to a disputed site and thereby able to affect it – with this providing a causal link to a strategy. The second was contextual applicability, in the form of various logical thematic relationships such as an action being overtly declared by a state to relate to an MPA site.

As part of assessing such relevance, it was found useful to informally class dataset actions as physical or intangible. Physical actions were those that principally did (or would, for announcements of future acts) physically occur in a set area and that were able to exert an impact on a target (in this case, an MPA site) by proximity and/or thematic linkage. Examples include military deployments, which can threaten a target by coming close to it (and so placing it within weapons' range) or by remaining distant but being thematically linked, such as by a state declaring the force is prepared to travel to a target and attack. Intangible actions were those with a coercive or cooperative effect that could be related thematically to a target even if they did not physically occur at or near the site, such as maps claiming sovereignty of an MPA location. Of note, intangible actions by definition could not have geographic relevance.

Once classed as physical or intangible, actions were considered against geographic proximity and thematic criteria to determine if they were directly (i.e., explicitly) or indirectly (in an implied way) relevant to MPA site(s). This was done using the following counting rules:



## **Geographic Proximity (Physical Behaviours Only)**

### Directly Relevant Actions

Such actions are judged to relate only to the specific MPA feature(s) with which they are associated via proximity. The specific feature was identified when an action in the dataset was described as occurring:

- At, on or within 22 km of the MPA site. The 22 km zone reflects the extent of the Territorial Sea (TS) afforded under UNCLOS to all rocks. As discussed below, to capture a minimum defensible application of international law, all the 15 features with the exception of Macclesfield Bank (which is entirely underwater and hence has no TS) are treated as rocks. This radius also provides a convenient logical basis to define how an action is directly relevant to a feature, as when it occurs within this zone it explicitly affects the most legally defensible maritime area solely associated with a specific MPA site. Further, whether actions occur within this zone affects if they are considered offensive or defensive, or in some instances normal or distinctive.
- As “close” to the MPA site, or using similar language. As a general rule, such were considered to occur within the TS if conducted by the controlling state or just outside if otherwise, to minimise extrapolating the occurrence of distinctive acts. Exceptions are otherwise noted in the AAD line item.
- At Macclesfield Bank or the Paracels. While these are larger areas or sets of features, their status as being wholly controlled by China makes it sensible to consider actions occurring there as being wholly directed towards retaining (or obtaining) the entire region, including (for the Paracels) Woody Island.

Practically speaking, the above descriptions apply to all individual MPA locations, and the Paracels and Macclesfield Bank as groups of features. Of course, Scarborough Shoal and Pratas Island are classed as individual sites.

### Indirectly Relevant Actions

Such actions are judged to relate to all the MPA features occurring within either “the SCS” or “the Spratlys” when their location is described this way in the dataset (noting the other possible location permutations fall under directly relevant behaviours). Specifically, indirectly relevant actions are identified in the dataset when:

- Military or paramilitary actions occur in “the SCS” or “the Spratlys”. This is based on the notion such forces can be applied for attack and defence in the whole region, so making them indirectly relevant to all the MPA sites within the area.
  - The relevance of military or paramilitary activities is that it reflects the concerns of the Realist theories under investigation in terms of their focus on militarised (i.e., armed) behaviours as the key threat to state survival. Hence, nations motivated by these theories should be particularly sensitive to the behaviour of armed military and paramilitary units.
- Any action covers an MPA site by default. For example, in 2013 China announced it had expanded 4G telecommunications coverage to the Spratlys. This is considered to affect all MPA locations there.
- Actions are *announcements* of planned non-military or non-paramilitary behaviours that are described as occurring “in the Spratlys”; for example, plans for new tourist routes into the area. This reflects that such generic announcements, while still localised to at least a region, have the potential to be conducted in practice near any states’ features.

### Unrelated Actions

Unrelated actions are considered as not related to a state’s strategy towards any MPA feature. Such actions are identified in the dataset when:

- Planned or actual civil behaviours occur with the location described as “the SCS”. Such actions are considered insufficiently specific to be applicable to any site, and of course lack the armed element to give them broader relevance.
- Practical (i.e., conducted) non-military or non-paramilitary behaviours occur in “the Spratlys”. This reflects that such activities must actually occur at specific locations, and if the potential for this to be done near an MPA site is not realised, then no extrapolated strategy relevance should be made.
- An action is described as occurring at a specific non-MPA site or region. As noted previously, such locations are already excluded from consideration.

### **Contextual Actions (Physical and Intangible Actions)**

#### Directly Relevant Actions

Such actions are judged to relate only to the specific MPA feature(s) with which they are associated via thematic relevance. The specific feature was identified when an action in the dataset:

- Overtly addresses the location, such as a statement referring to it by name or a map or graphic with a specific focus on the site.
  - This includes physical behaviours where the location might be described broadly, or distant to the MPA area, but there is compelling evidence to associate the behaviour with a specific site. For example, in 1995 the Philippines deployed fighter aircraft to the island of Palawan as an explicit reaction to the Chinese seizure of Mischief Reef, noting Palawan is several hundred kilometres from the Reef.
- In the analyst’s judgement were clearly directly related, including by being a response to an action by another state that had affected the site. While

individual justifications are provided in the relevant line items (and overall this approach was rarely used), a key principle harnessed to determine relevance was proximity in time. For example, in 1998 China deploys naval ships to Mischief Reef in contravention of an agreement between Beijing and Manila. Almost immediately afterwards, the Philippines subsequently engages in an escalating series of threats towards the Spratlys. While these don't overtly mention the China or the Reef, due to the timing they are considered to be directly relevant to the Philippines strategy for Mischief Reef.<sup>364</sup>

### **Indirectly Relevant Actions**

Such actions are judged to relate to all the MPA features with which they can logically be associated via an implied connection. Such actions, and the feature(s) they address, are identified in the dataset when:

- An action encompasses a location by default, for example, a media release by Beijing affirming its sovereignty over the SCS, or a map that covers “the Spratlys” or “the SCS” – such as China’s nine-dash line figure in 2008. Such measure indirectly include, and hence are considered to apply to, all contested sites. When determining which sites such an action relates to, the minimum geographic scope is preferred to prevent unfounded extrapolation of actions. So, a Chinese claim to (or map for) the Spratlys only applies to Beijing’s strategy towards those MPA features rather than also, for example, the Paracels.
- The thematic topic of an action is the territorial disputes that exist between nations. In such instances, it is considered to apply to the relevant MPA locations. So, discussions between Beijing and Manila on the issue of territorial disputes in the SCS can be assumed to relate to their strategies for Thitu,

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<sup>364</sup> And by mentioning the Spratlys they are also indirectly relevant to the other features Manila contests with China in this area. The issue of how responses are treated is discussed in detail below.

Scarborough Shoal and Mischief Reef (the locations between the two countries considered in this dissertation) even if these are not specifically named.

- An action was, in the author's judgement, clearly but indirectly thematically related to particular site(s). While individual justifications are provided in the relevant line items (and overall this approach was rarely used), a key principle harnessed to determine relevance was if an act was unusual in nature, coercive and occurring during a crisis. For example China imposes various unusual restrictions on the import of Philippine products during the several-month crisis between the nations over Beijing's occupation of Scarborough Shoal in 2012. These actions, hence, are considered to apply to the Shoal.

### **Unrelated Actions**

Unrelated actions are considered as not related to a state's strategy towards any MPA feature. Such actions are identified in the dataset when they overtly refer to non-MPA locations.

### **Counting Rules: General Considerations for Classifying Offensive, Defensive, Normal and Distinctive Actions**

When conducting annual pattern-matching analyses, various factors affected how actions were considered and motivations assessed in the AAD. Firstly, and as noted in Chapter Three, in territorial disputes nations are presumed to seek to maintain control of their own lands (i.e., they have defensive objectives) and maximise the benefits they can extract from them. They are also presumed to seek to gain control of those territories they claim but do not hold (i.e., they have offensive objectives) while maximising the benefits they garner from such areas short of having control. They are also presumed to view all other nations' actions through such a lens.

Hence, all states' actions captured in the AAD are considered as either defensive, relating to either seeking to defend territory and exploit it; or offensive, seeking to

or gain control of territory and/or a share of its benefits; with the intent of course relating to whether the land is controlled by the nation at the time. This applies to both when states take location specific actions (such as deploying ships to a particular reef) and when nations engage in actions which cover a range of features where they have differing objectives. For example, when China engages in negotiations with Manila “on the Spratlys”; it is presumed through this action to seek to cement its hold over the features it occupies (and/or maximise the benefits it gains from these) while concurrently aiming to gain control over (and/or extract the most benefits from) locations held by the Philippines. Hence, one behaviour can concurrently serve defensive and offensive objectives.

As also discussed in Chapter Three, nations engage in either cooperative or coercive behaviours to progress their strategy, and this is conducted via normal and distinctive actions. In general, most distinctly coercive or cooperative actions are always treated as such based on their inherent nature (e.g., threatening the loss of life) but they may be offensive or defensive depending on the location. So, a nation engaging in lethal enforcement against poachers within the TS of a feature it controls is conducting defensive distinctive paramilitary coercion. And this same act is offensive if conduct in the TS of a feature controlled by another state.

However, certain normal and defensive geographical control-enforcing coercive actions (such as economic development, non-lethal paramilitary enforcement and military exercises) are considered offensive distinctive coercion if they occur where a state has no right to do so under international law. So, if a nation engages in such actions on its own land or within its associated maritime zones, it is acting in alignment with its rights under international law (in this case, UNCLOS) and hence is behaving defensively and normally. But if it conducts such actions on or within other nations’ land or zones, where it has not right to do so, it behaves offensively and distinctively. For example, a nation conducting non-lethal paramilitary enforcement in its own EEZ (including its TS), where it is entirely entitled to do so, is engaging in normal coercion. But if it attempts to do so on in other states’ EEZ or TS,

where it has no rights of enforcement, then it is acting offensively with distinctive coercion.<sup>365</sup>

Also, some normal defensive control-enforcing coercive actions are considered as distinctive defensive coercion if they alter the status quo in a potentially permanent way – thus having increased credibility in terms of the state’s possession of a disputed feature. In particular this applies to if nations build an initial permanent structure where none existed before, or substantially expand a feature by reclamation – likely with a view to later building more infrastructure. Such actions are treated as distinctive defensive coercion even if occurring on features notionally already occupied by a state, or are unoccupied but within its maritime zones.<sup>366</sup>

### **Defining MPA Maritime Zones**

To apply the above approach to classifying behaviours requires firstly determining what maritime zones should be afforded to the various features. This requires some adjudication of feature-type, noting true islands gain 370 km EEZ, rocks have 22 km TS, and low tide elevations have no zone at all.

As a rule, and noted in Chapter Six, all the MPA features are treated as rocks, hence the only maritime zones they are considered to generate is a 22 km TS from their baselines. The sole exception is the Macclesfield Bank, which is entirely underwater and hence generates no maritime zone. In accordance with UNCLOS, all occupied locations are considered independently i.e., groups of occupied features are not considered to generate one larger TS.

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<sup>365</sup> This same principle could be applied to actions in areas such as the High Seas that are not considered in this dissertation.

<sup>366</sup> This addresses the situation that in some instances in the SCS (notably Louisa Reef), features may lie within a state’s EEZ but there is no particular evidence of it having a structure on the feature or conducting regular patrols there. Despite this, and while most MPA features are treated in this work as rocks, in reality their nature is heavily contested. In fact, many may be Low Tide Elevation which by default would fall under the sovereignty of the state within whose EEZ they fall (Houlden & Hong, 2018). Hence actions by the EEZ state (for Louisa Reef, Brunei) to build an initial structure or engage in major land reclamation can sensibly be considered distinctive defensive coercion.

The basis behind this reasoning is that during the period of the investigation, the status (rock or island) of the various features had not been determined; with many of the claims particularly in the Spratlys for “islands” being dubious. Indeed in 2016, the PCA found that no features in the Spratlys were islands (PCA, 2016).

However, one of the most fundamental tenets in UNCLOS is that rocks are afforded a 22 km TS. Hence, it seems reasonable to propose that at minimum, nations have a strong legal basis for arguing such waters are their own. Of note, Beijing claims the entire Paracels as a single group surrounded by a common set of straight baselines. This approach is not used here and is rejected by other claimants and members of the international community (CSIS, 2019).

Further, Subi Reef and Thitu Island are only some 25 km apart, and hence would have overlapping TS. Notionally, this means that to correctly identify which actions, of those described as occurring within 22 km of the sites, are relevant to which feature, would require defining the border between them and then specifically determining the exact location of the action. While a border could be conceptually defined,<sup>367</sup> even so such specific location information is almost never available. So, from a practical counting perspective, the simple rule was used that actions identified as occurring within 22 km of Thitu or Subi were treated in the most conservative way as relevant to those features unless circumstances indicated otherwise.

For example, a Chinese patrol that stops at Subi is treated as conducting a defensive normal coercive action even though it may at some point come closer than 22 km to Thitu. The same approach was used for the other mechanisms that can be used to identify directly relevant geographic actions. So, a PAF plane that is described as flying “close” to Thitu is considered to be relevant only to Thitu, rather than also to Subi, and so on.

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<sup>367</sup> Where TS overlap the common approach under UNCLOS is to delimit them via equidistance (Dundua, 2007). This would result in each site having a section of its TS being 12.5km from its shore.



**Counting Rules: Determining National Control, Offensive and Defensive Situations, and Normal and Distinctive Behaviours, at MPA Features**

While the above principles are straightforward in concept, in practice, to classify behaviours in and around disputed territories such as the various MPA locations requires a number of adjudications and counting rules. This firstly reflects that, by their very nature as *disputed territories*, the rightful sovereign of such areas is contested. So, for example, is a state that attacks and reclaims an area it once held acting defensively; merely reasserting and protecting its territorial integrity against an adversary, or is it acting offensively? And in disputed but occupied terrain, are actions conducted by a nation in de facto control, such as building infrastructure or conducting military patrols or exercises, normal control-enforcing behaviours or are they distinctive coercion towards other claimants?

While no position is taken on the rightful sovereigns of the disputed features, to address these issues, the following counting rules are used. They are focussed on matters associated with MPA locations and do not address all possible permutations of feature-type, location, and sovereignty in the SCS. They are based around principles of recognising the realities of national control in the region, efforts to apply minimum defensible interpretations of international law, and the author's judgement of how to achieve sensible resolutions to practical issues:

**Defining Offensive and Defensive Actions**

- A state is considered to be in control of a feature when it can credibly defend its existing free use of the area and does not face a continuous challenge from other nations. This condition arises in practice when a nation is the only state persistently deploying an armed force at the site – and this force can credibly defend itself from a likely adversary (as defined in Chapter Six, Section II).
- A state is most definitively in possession, when only its own para(military) land-based forces are visible on a feature (indicated by the presence of

structures and/or personnel). Or, at sites lacking any land-based forces from any nation, a state is considered in control when its forces are the only regular (para)military air and/or ship-based patrolling presence at the area, with other nations not generally physically contesting such patrols or the activities of its civilian assets, such as fishing vessels.

- A nation would be judged in control even if other states occasionally patrolled the feature, and these foreign units fired warning shots at its forces. Such actions would be highly coercive but not sufficient to interrupt its control. However, regular foreign patrols (let alone a continuous deployment) that consistently interfered with its forces or its civilian units would indicate control was contested.
- States that attempt to gain control of features that are possessed by other nations in any fashion (land-based forces or patrols) are considered to be engaging in distinctive offensive coercion towards the occupier. An attempt at occupation can take many forms and is left to the analyst to identify. Examples would include a state attempting an amphibious operation of some kind, or continuously positioning its forces at a site and refusing to depart, while demanding the original controlling nation quit the area and/or interfering with its (para)military or civilian units. Also, when a state seeks to occupy an otherwise unoccupied feature that is claimed by another nation and falls within the latter's EEZ in such instances the attempting occupier is considered to be engaging in distinctive offensive coercion towards the other claimant state.<sup>368</sup> Either situation (displacing existing control or possessing a previously unoccupied feature) is considered to prompt an occupation crisis between the two parties at the location i.e., a period of escalated tension with a strong risk of military conflict.

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<sup>368</sup> Again, this reflects that while most MPA features are treated as rocks, in reality their nature is heavily contested and many may well in fact be Low Tide Elevations, which by default would fall under the sovereignty of the state within whose EEZ they fall (Houlden & Hong, 2018). Due to this potential, it is sensible to consider occupation by other nations as aggression towards the EEZ country.

- For the purposes of this dissertation, the situation of a state occupying an otherwise unoccupied feature occurred only at Mischief Reef (which falls within the Philippines EEZ), China is considered to have seized Mischief Reef from Manila in late 1994 or very early 1995, as the specific date of occupation is unclear (Rosen, 2014).
- Actions taken by the aggressor are considered offensive until such time as it takes full control of the feature. This is considered to have occurred, for sites that had land-based forces, when only the new occupier’s land-based forces are present on the feature (i.e., the defender’s land-based forces have been driven away). This is indicated by the absence of the defender’s forces and the presence of structures built by the aggressor (considered an indication of a permanent land-based presence) and/or its personnel at visible at the site. Or, for patrol situations, when the defenders’ maritime forces that were responsible for immediately protecting the feature have been driven away, and only the aggressor’s forces remain and are (at least temporarily) uncontested.<sup>369</sup> Once the new occupier is in possession it is considered to have de facto control, and its actions are thereafter judged defensive (with this applying to China at Mischief Reef in 1995). This applies vice versa for the former occupier i.e., its actions are defensive until it loses control, and thereafter are offensive.
  - A nation with land-based forces in place is considered to be in control of a feature until such time as those forces are displaced, even if another nation is contesting the waters around the feature. This reflects simply that the country with land forces does, literally, have free use of the feature itself unless and until another country seizes it.
  - A new occupier may choose to deploy land forces to a feature which previously had none. This serves to help entrench its control, and make

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<sup>369</sup> However, the previous occupier may later still attempt reconquest or other attacks.

conquest by another party more difficult, but does not influence when the state first takes control, that is, when the defender's forces first leave.

### **Defining Normal and Distinctive Actions**

- If the attempt at occupation is successful, the associated crisis is considered to have ended either when the original controlling state's forces have (based on the analyst's judgement) departed without indication of likely aggressive return<sup>370</sup> and/or some form of agreement is reached between the new and former occupier indicating further conflict is unlikely for the present.<sup>371</sup>
  
- In situations where a new occupation occurs:
  - During the crisis and for 12 months after its end, the new occupier's otherwise normal practical geographic control-enforcing actions (such as economic exploitation, holding exercises, building infrastructure, or despatching patrols) are considered distinctive coercion. This reflects their aspect of more strongly and practically cementing the new power's control, not least against the former occupier. During this period, the new occupier's other actions (cooperative and coercive) retain their usual nature. Lethal enforcement actions are considered crisis initiation until the end of the crisis, thereafter they become distinctive practical coercion, reflecting the reality of the new state's control.
  
  - Once 12 months have passed since the end of the crisis, the new occupier is considered to be in a condition of "long standing de facto control" where it

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<sup>370</sup> So, actions such as passing naval or air patrols by the former occupier are not considered to affect the end of the crisis. This same concept also applies if there were no occupying forces originally.

<sup>371</sup> This agreement does not need to formally resolve the issue of the feature's rightful sovereign between the competing powers. For example, for China's occupation of Mischief Reef, 11 August 1995 is generally considered to mark the end of the crisis with the signing of a Philippine-Chinese Code of Conduct on how to resolve Spratlys disputes peacefully (Zha & Valencia, 2001; Dzurek, 1996). In contrast, the Scarborough Shoal stand-off in 2012 is treated as ending on 30 June, at the end of the month which saw the permanent departure of all the Philippines' government vessels.

is afforded the rights of a de jure sovereign.<sup>372</sup> At this time, all of the state's actions have their normal or distinctive category determined by their nature.

- For the original defender, from the beginning of the crisis onwards, all its previously normal practical control-enforcing actions are treated as distinctive coercion until the crisis ends. This reflects that such actions can be understood as efforts by the state to physically regain control of territory it is losing or has lost, with a consequent higher risk of conflict. The former occupier's other actions (cooperative and coercive) retain their usual nature during this period. The exception is lethal enforcement actions, which are considered as crisis initiation behaviours from when the crisis begins. This change of rating reflects the particular potential for such actions to result in wider violence in a crisis. Once the crisis ends, all the former occupier's actions are again considered on the basis of their inherent nature.
- If the attempt at new occupation fails, this is marked by the withdrawal of the aggressor's land-based forces on the feature and/or the departure from the immediate area of those maritime forces apparently tasked with its occupation. The end of the associated crisis is marked by the withdrawal of the aggressor's forces without indication of likely aggressive return, likely concordant with the failure of the occupation attempt, and/or an agreement indicating further aggression is unlikely for the present. During the crisis, the same rules apply for considering both states' actions as discussed above. Once the crisis is over, both countries' behaviour is again assessed on its innate nature: no 12-month rule is applied as no change in the status of control has occurred.
- The above considerations also apply to all the MPA features' TS, since all are treated as if they were rocks under UNCLOS.

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<sup>372</sup> This is a decision by the author to aid analysis as it is implausible to, for example, consider all actions taken by China on Mischief Reef 10, 15 or 20 years after its occupation to be as distinctive and as its original occupation. To address such factors, counting rules must be made. Of note, the rule is not specifically based on international law and would doubtless be disputed by various parties, not least by the previous occupier.

- Should a former occupier attempt re-conquest later, the same rules as for any aggressor apply to its behaviour.

Based on the rules above, the status of the MPA features on 1 January 1995 is that all are under long standing de facto control bar Louisa Reef and Mischief Reef, with the latter being in crisis. The identity of the MPA locations and controlling states is summarised below in Table C1, reflecting the discussion in Chapter Six. Of note, as raised there and in the MPA, Brunei is considered as the “defender” of Louisa Reef, noting it has the greatest stake in control of the site. Also, Brunei is granted UNCLOS TS rights over Louisa Reef noting it falls within that nation’s EEZ and is unoccupied. Hence Brunei is considered to have the strongest claim towards sovereignty.

Table C1: Summary State Control of Features on 1 January 1995

<b>Nation</b>	<b>Controlled Location</b>
Brunei	Nil
China	Woody Island, Subi Reef, Mischief Reef (in crisis), Fiery Cross Reef, Macclesfield Bank
Malaysia	Swallow Reef
The Philippines	Thitu Island, Scarborough Shoal, Commodore Reef
Taiwan	Pratas Island, Itu Aba Island
Vietnam	Spratly Island, Amboyna Cay, Barque Canada Reef

**Counting Rules: Initiations, Reactions and Responses**

Strategies in this dissertation are principally considered as the coherent patterns of action states engage in to pursue the Realist imperative to gain and maintain power. In territorial disputes, states enact strategies to either maintain their existing control of areas, and maximise the degree of benefit they obtain; or to gain control of lands held by others, and maximise the benefit they gain short of this. In either case, patterns of initiations and responses occurs: states commence either

coercive or cooperative measures (or mixtures of both), assess how the target nation reacts, and then adjust their behaviour accordingly.

As discussed in Chapter Three, different patterns of initiations and reactions are expected from different state-types.<sup>373</sup> To identify these patterns, it is necessary to define which actions are initiations and which are reactions. Conceptually, nations' actions in the AAD could be classed in three ways. Firstly, they could be considered as *initiating* a new behaviour. Secondly, they could be considered as *reacting* in general to the behaviours(s) of other states. For the latter, a nation might decide to engage in increased coastguard patrolling in an area in reaction to a single long-running "action", such as another state's general improvement of facilities at a disputed site, or a set of behaviours such as a pattern of intrusions into its waters by the other country's military. Thirdly, nation's actions could be considered as specific *response(s)* to an individual behaviour by another country that is constrained in time and space (for example, a response to a media release, or a single patrol). The exception to the above three examples is where the initiator is uncertain (such as where two or more nations issue a press release on some matter, or a group such as ASEAN is acting), in which case an action could be considered "unclear".

While these descriptions might lead to an expectation that the AAD would include multiple examples of initiations, general reactions, and specific responses, as a practical matter only initiations and responses are listed (and unclear actions). Indeed, actions are generally classed as an initiation unless there is a clear causal link to justify them being classed as a specific response.

This reflects that, clearly, when a nation takes an action it is initiating a behaviour. But it is difficult to ascertain, without clear evidence, of when such an action is a

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<sup>373</sup> In summary, DR(GLS) states are expected to generally initiate cooperation, and respond to cooperation with matched or escalated cooperation, and generally to coercion with decreased coercion. In turn, DR(GS) nations may initiate mild coercion or cooperation; should respond to normal cooperation or coercion in kind; should respond to distinctive cooperation with decreased levels of cooperation (or even mild coercion); and match distinctive coercion in kind, to show strength, but later should move to reduce tensions. And OR states initiate coercion, and respond to cooperation with coercion, and coercion with escalated coercion.

specific response as opposed to a broader general reaction or the internally driven evolution of a state's strategy. And it is analytically dubious, or overtly incorrect, to consider either of the latter two an indication of a nation's pattern of responses. That is, when a response is clear, then it of course provides insight into state-type. But if it is not clear which action/s caused a general reaction, or if these are clear but they are events (such as a military build-up) that occur over a long period and/or span a range of category ratings, it is impossible to determine whether the reaction is an escalation, matched or de-escalation. And similarly, of course an inherently initiated action provides no insight into responses.

To illustrate the above practically, State A's foreign ministry might make a statement claiming State B's island in January (a coercive normal declaratory diplomatic action). In turn, State B might reassert its control by building a customs house on the feature in March (a coercive normal practical minor economic action, which is still more coercive than A's statement). While this action can logically be considered part of the action-reaction process, it is difficult to be certain whether this is a long-planned action by State B, or a specific response to State A's statement (or any other pattern of behaviour) unless overtly described as such. And if the building of the customs house is declared a response to both the statement claiming the island, and some subsequent distinctly coercive patrols by B's forces in proximity to it, then the action is both more and less coercive concurrently. Thus, simply deciding to treat it *as* a response risks drawing unsupportable or contradictory conclusions. Hence State B's action is classed as an initiation rather than a reaction or a response. This approach of classing most behaviours as initiations also prevents the implausible situation of every action in an ongoing dispute simply being a response or reaction to the preceding action, potentially spanning decades.

In turn responses were identified by clear causal links that met the guidelines for directly relevant actions, based on the analyst's judgement, with these described in each specific instance in the AAD. These links could include State B declaring that its particular action is a response to a specific act by State A; actions being closely



correlated in time and theme (such as statements disputing ownership of a feature happening only a few days apart); or by geography, such as nations' dispatching military assets to a location where another country's armed forces had just been discovered. Such instances could include countries responding to otherwise bilateral events. For example, Vietnam might respond to a Brunei-China agreement over territory it also claims by threatening either party or both.

### **Time Limits on Responses**

An action was considered a response if it met the guidelines listed above and occurred within 12 months of the action it was notionally a response to. This reflected the author's consideration that it was intuitively implausible for an action conducted possibly years later to count as a true response to specific issue, rather than an initiated behaviour. For example, in 2011 Manila "responded" with a protest to Chinese laws regarding the SCS that had been passed in 2009. This behaviour by the Philippines is hence classed as an initiation.

### **Addressing Multiple Responses**

Of note, a state's response to another's specific behaviour could be comprised of a single or multiple actions; these themselves may generate genuine action-reaction patterns, or such patterns can occur over multiple issues within a long-running event at a single location; and nations may respond to multiple different actions, at various locations, over the course of a single year. So, Hanoi may respond to an offer of economic cooperation from Beijing with a simple acceptance or rejection. Alternatively, as occurred after China's occupation of Mischief Reef in 1995, the process of Manila and Beijing's interactions was comprised mainly of individually initiated actions over a period of six months while the crisis was resolved. But within this time, Manila responded to various individual actions relevant to the crisis conducted by Beijing, and vice versa. And in 2012, China's occupation of Scarborough Shoal led to multiple instances of Manila and the Beijing responding to

each other's behaviour on this matter, while also responding on different issues at different locations.

In these various situations, the following counting rules were applied at each MPA location per year to interpret the responses to provide insight into state-type:

- For a single action and response, the sole response was considered.
- For multiple responses to a single action, where the other state did not react in turn, the pattern in the nature of the responses was considered (for example, escalation over time; consistency of approach; or de-escalation).
- For action-reaction cycles, or states' responses to different actions over the course of a year, the various patterns of responses were considered, aiming to identify the best overall fit.

### **Absences of Reaction and Substantive Actions**

States are also under no obligation to react to the actions of others and may ignore them for any number of reasons. This is especially so for actions that offer little benefit or harm, and even more so if these occur as part of diffuse contextually relevant actions. For example, a Chinese media release claiming the entirety of the SCS notionally affects all the listed MPA locations. But as it provides very little coercive impact and addresses none of the disputed features directly; even an OR state might well entirely ignore such an action.

Because of this, when nations do not respond to actions of another state, this is mostly taken as providing no information on their motivations. The exceptions is regarding what are referred to as "substantive" behaviours. These occur when a state engages in direct (either geographic or contextual) *and* distinctive coercion or

cooperation towards disputed feature(s). Such an action is considered to offer (or threaten) a target state with a greater degree of cost or benefit with high credibility.

Of note, targeted states are considered as the controlling nation, where the substantive action is offensive in nature. When it is defensive, the target is either the state with which the defender is immediately engaged (such as during a naval stand-off in the feature's waters) or, when a general control-enforcing action with no obvious target, then it is treated as being directed at all states seeking to control the location.<sup>374</sup> Therefore, if the target nation(s) ignores a substantive threat, it is considered as an indication of DR(GLS) motivation. If they ignore substantive cooperation, this is considered an indication of DR(GS) or OR motivation.

The exception to the above rule is when nations engage in general reactions to an ongoing distinctive event that is not sensibly considered as single action but is captured so in the AAD for recording purposes. For such occasions the general reactions, in accordance with the counting rules, are considered as initiated behaviours rather than as particular response by a state – yet clearly the distinctive act is not being ignored.

To address such instances, the rule was made no information is inferred from the lack of any one specific response to the distinctive action. Instead, the actions by the reacting states are treated in accordance with the general rules for initiated behaviours. However, if nations make no reactions at all to the ongoing distinctive action, this is still classed as ignoring the activity. Also, this does not prevent individual responses to specific actions conducted as part of the wider activity from providing insight.

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<sup>374</sup> Of course, as noted in Chapter Three, defenders may engage in distinctive defensive coercion without reference to other nations. Such actions, however, are still part of the occupying state's strategy to retain control and can be understood as demanding a response from appropriately motivated states.

To illustrate these points, in 2014–2015 China engages over many months in substantial reclamation work and then facility construction on a range of features in the SCS. As discussed below, such behaviour is considered distinctive defensive coercion, yet it cannot sensibly be considered a single action<sup>375</sup> to which other nations can give a specific response. As part of these developments, China also engaged in various specific behaviours such as announcing the completion of airfields, and so on.

Noting these developments, other states such as Vietnam and the Philippines reacted over this time period with various criticisms to both the overarching development of the features and responses to China’s various specific announcements. Regarding the reactions to the overall distinctive coercion, via these initiated behaviours the nations are clearly not ignoring the distinctive coercion, hence no insight into motivation is gained by the “absence” of a single response by Hanoi or Manila. Instead, their state-type assessed by the elements of scope and direction in their overall behaviour, with this including any specific responses to individual announcements by Beijing, which have their own generally non-distinctive category ratings).

In turn however, Taiwan did not respond to the distinctive works in both 2014 and 2015. This is classed as an absence of response to substantive coercion, a DR(GLS) behaviour. Of note, Taiwan did not respond to any of the specific announcements by Beijing, but as these were not distinctive this provides no further information.

### **Inferring the Nature of Responses from Circumstances**

In most instances the nature of a response (i.e., being more, less, or equally coercive or cooperative to an action – or even distinctively so) is clear from the category rating of the behaviour. However, in various circumstances such a straightforward assessment was judged misrepresentative. For example, a nation

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<sup>375</sup> Though it is captured as such in the AAD for recording purposes.

might propose some form of action (such as compulsory arbitration – which is distinctly coercive) that another state would find objectionable. In such situations, while an acceptance of the proposal was clearly cooperative, it is difficult to consider a simple diplomatic rejection as being an escalation of coercion. And in fact, considered purely by category rating such a rejection (by being less coercive than the initial distinctly coercive act) would notionally also be considered cooperative.

To address such situations the broad rule was adopted that when assessing responses, the modes of possible response needed to be considered. So, for the example above, if acceptance was considered cooperative, then simple rejection would be matched coercion, and any further escalated behaviour as increased coercion. The results of such considerations are captured as appropriate in the qualitative summaries of AAD entries, and as judged necessary in line items themselves. A guide to how selected common examples were addressed is provided below.

#### Assessing Responses to Compulsory Adjudication

A particular type of action available to states is to seek adjudication of a territorial dispute under an international court. When entered into by two states willingly (with an overt or presumed commitment to abide by the ruling) this is clearly distinctly cooperative behaviour of the type expected from DR(GLS) states.<sup>376</sup>

While rarely used, there is also the potential for states to seek adjudication without the consent of other nations, in a process referred to as compulsory adjudication. Additional counting rules apply to assessing state behaviours in such situations.

Namely, when a nation threatens to, or commences, compulsory adjudication against another, this is classed as distinctive coercion. If the target of the action

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<sup>376</sup> Specifically, such an action would be categorised as a cooperative distinctive admin/legal diplomatic behaviour, noting the intent to treat the ruling as a legally binding agreement.

responds by simply refusing to participate, and advises this and any associated commentary via only the lowest (diplomatic) categories of coercive behaviours, this is classed as matched coercion; so, DR(GS) behaviour. However, if the target also responds with directly related and further-escalated coercion, such as threats of militarisation or similar, such reactions are considered as escalating coercion (i.e., OR behaviour), even if the categories of such actions are not themselves distinctive coercion.

This logic reflects that accepting adjudication is obviously cooperative (indeed, this is no longer “compulsory adjudication”). The next most coercive step, rejecting involvement, is difficult to sensibly consider as any form of “escalated coercion” in response to the prospect of adjudication. This also applies to any very low-level associated coercion, such as statements generally condemning the proposed adjudication or actions formally capturing it in the minimum official manner (such as Notes Verbales, discussed below). Therefore, these are treated as matched coercion. Hence by a process of elimination, rejection matched with any other type of normal coercion (let alone overtly distinctive types), is reasonably classed as escalating coercion.

Finally, only those instances judged as credible calls adjudication (or of course the actual commencement of legal proceedings) were judged as classifying as distinctive coercion. Calls for “UN action” or resolving a dispute in alignment with UNCLOS were taken as purely communicative behaviours, unless these aligned with expressed preferences by other nations – in which case such calls counted as coercive or cooperative behaviours as appropriate.

#### Responses to Communicative Behaviours

Communicative behaviours provide no information on state-type as they contain neither a cost nor a benefit. In turn, if a state responds to a communicative behaviour with coercion or cooperation, this sensibly indicates OR and DR(GLS) motivations respectively. However, if a nation responds to a communicative

behaviour with the same in turn, this can, by elimination, be considered evidence of DR(GS) motivations.

### Assessing Reactions via Notes Verbales

Frequently in the dataset, nations record their interactions on matters with the UN via Notes Verbales (a form of diplomatic correspondence), with this often relating to a third party. For example, in response to a 2009 submission to the UN by Malaysia and Vietnam related to the SCS seabed, China expressed to the UN its position on this submission (i.e., that Beijing disagreed with it) via a Note Verbale.

As a formal record that may capture a protest, a Note Verbale is typically considered as a Coercive Normal Practical Minor Diplomatic action. In doing so, such a category rating may notionally represent an escalation compared to, for example, a Coercive Normal Admin/Legal Diplomatic behaviour such as the original submission referred to above by Malaysia and Vietnam. However, as such Notes represent the basic form of correspondence between the UN and member states, they are in fact treated as matched coercion when capturing such forms of protest. Similarly, a Note Verbale formally rejecting involvement in UN adjudication is treated as matched coercion in response to the notionally far more coercive action that is the initiation of the Compulsory Adjudication.

### The Particular Value of Responses

While rare, responses have increased value for identifying state-types since, as a test of behaviour, they provide more information, with greater certainty, than do initiations. In doing so, they fulfil these same criteria for a stronger test proposed by Van Evera in Chapter One (1997, pp. 30–31, 75–77).<sup>377</sup> Further, responses allow nation's specific motivations can be determined with greater precision and increased confidence; particularly when considered as part of overall patterns of

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<sup>377</sup> Specifically, Van Evera describes a stronger test as one which provides more information with higher certainty about whether a theory's predictions are correct. Responses fulfil these criteria.

behaviour. Due to the particular value of responses, they are assigned a greater qualitative weighting when assessing behaviour to identify state-types. Also, certain specific counting rules are useful, which are detailed separately further below.

To explain these matters in more detail, on the subject of providing more information, responses contain two “pieces” of data, in comparison to initiations, which carry one. A response contains both the category of the behaviour itself (such as a cooperative normal declaratory diplomatic action) and the nature of the response, in terms of it being more, equal or less coercive or cooperative (or even distinctly more coercive or cooperative) than the initial action. This is in contrast to initiated actions, which carry only the category.

On the issue of certainty, responses have more value as they provide a *deliberate reaction*, which provides specific evidence of a state’s chosen behaviour in a particular instance and hence more insight into its particular strategy. This in comparison to initiated actions that can be conducted for any number of reasons.

Finally, on the issue of precision, since specific predictions have been developed about how state-types should respond to different actions, responses provide clear evidence of such behaviours. And by considering such responses with broader patterns of initiations, this assists to identify specific state-types (as opposed to more coarse characterisations) with more precision and also greater confidence. The latter reflects using more and complementary data (i.e., initiations and responses), and the certainty of responses’ applicability to a specific strategy, as noted above.

These propositions can be usefully illustrated with an example. So, China might initiate multiple instances of declaring its sovereignty over the areas it claims in the SCS. Such actions are typical of all state-types and thus provides little insight into Beijing’s motivations. After all, even Peaceful nations are expected to occasionally declare their interests in territory that they claim. But if Manila were to make such a declaration, and China respond with simply another identical declaration in turn,



Beijing's action provides two "pieces" of information that can with confidence be attributed as part of its deliberate strategy towards the Philippines in particular.

Further, China's reaction shows how responses allow for the more precise identification of motivations. In this instance, Beijing responds to Manila's claim of sovereignty (which China would view as a low-level coercive action; noting the nations' territorial dispute) by responding with matched low-level coercion in turn. This response is typical of DR(GS) states, rather than DR(GLS) nations (which should respond more cooperatively) or OR countries (which should respond with higher coercion). Therefore, China can be identified as behaving as a DR(GS) state.

### **Counting Rules: The Process of Qualitative Assessment**

As noted previously, the process of assessing state-types was essentially a qualitative pattern-matching analysis conducted against the purpose-developed frameworks developed in Chapter Three. As discussed below, this process was informed by certain principles, and additional weighting was placed on distinctive actions, directly relevant actions, and responses.

When assessing state-types, this was determined by matching observed behaviours' best-fit alignment with theories' core predictions. For example, various forms of low-level cooperation are part of the preferred scope for DR(GS) and DR(GLS) states, but also allowed for Revisionists. Should a nation engage in such low-level cooperation, it would be preferentially identified as a DR state, rather than an OR nation that happened to be behaving cooperatively.

Distinctive actions were granted additional weighting since they more clearly aligned with state-type associated areas of scope. So, to use the previous example, a "DR" nation principally engaged in low-level cooperation that then had an instance of distinctive cooperation would be preferentially identified as a DR(GLS) state as such behaviour is most expected from Peaceful nations.

Directly relevant behaviours were most considered in the form of substantive actions, defined previously as actions that were both directly relevant and distinctive. Such actions were considered to provide the clearest indication of cooperative or coercive intent, including by an absence of response to them.

Responses were granted additional weight due to providing the clearest evidence of a nation's intent to increase, match, or reduce levels of coercion or cooperation. To use again the "DR" nation example, this assessment might have been reached due to a state engaging in nine instances of low-level cooperation and one of low-level coercion towards another where it held an offensive objective. This reflects that even Peaceful states are expected to use some coercion on occasion. But if this coercive act was a matched (or even escalated) coercive response to the behaviour of the other nation, then this would cause the state to be identified as DR(GS), since such responses are not expected from Peaceful states.

Finally, as noted in Chapter Three, all nations can and do act in diverse ways. This may include behaving in ways where there are conflicting patterns of scope and direction, or outlier behaviours contradictory to the main patterns observed. As discussed further below, in such instances these behaviours were generally taken to indicate a DR(GS) state.

### **Counting Rules: Defining Persistent Activity and Identifying State-types**

In Chapter Three, DR(GLS) and, most particularly, OR nations are defined as being expected to act persistently to resolve disputes where they have offensive objectives, with the latter doing so via high-level and escalating coercion. But how frequently actions should be observed requires definition.

Where a nation has offensive objectives, as a counting rule, a period without any form of direct distinctive (i.e., substantive) coercion action for 12 months is treated as arguing against OR. Thus, in such instances, a nation by elimination is classified as behaving as a DR state, unless other factors intrude. Further, while a single instance

of distinctive direct coercion is enough to allow a state to be considered as acting as a DR(GS) or OR state, repeated further instances of such action are required to be provide the evidence of persistent escalation that typifies the true Revisionist.

Of note, in offensive scenarios there are no minimum cooperative behaviour requirements for nations to be identified as DR states. This reflects that DR nations have less urgency in gaining territory, and either Status Quo or Peaceful states may simply judge the moment inopportune for action. Thus, a DR motivation is typically indicated by a lack of offensive action, noting OR states should constantly be on the prowl. But a more precise identification of a DR subtype requires the consideration of specific patterns of action by the state – and should such actions be lacking, no further refinement is possible.

Finally, in defensive scenarios, an absence of all types of action does not indicate any state-type (and indeed as discussed further below, many actions in fact provide no insight). This reflects that all state-types are not expected to “pick fights” to have their control recognised by others. Therefore, no action provides no insight. The only exception is if a state does not respond to substantive coercion or cooperation, which provides evidence of DR(GLS) or DR(GS)/OR motivations respectively.

### **Counting Rules: Specific Considerations Affecting Actions**

#### **Enduring effects are not considered**

In the NDU dataset, many actions occur that have an obvious enduring impact. For example, the agreement between China and the Philippines to conduct seismic exploration in the SCS was signed in 2003 and remained in place until 2008. The “fact of” the existence of this agreement (or any other) could be used to justify creating a new AAD entry each year for these states capturing this cooperation (or any other enduring effect). This approach is not used as it does reflect the notion of strategies used in this dissertation: the deliberate paths of action taken by states to achieve their objectives. To appraise such strategies requires the consideration of

active behaviours taken by states, rather than inferring intent based on the “fact of” the existence of arrangements that otherwise may lie fallow. Hence in the AAD, only line items that relate to actual actions are counted. Applied to the previous example, this would include the signing of the agreement and any specific instances of actions (such as exploration campaigns) taken underneath it.

The exception to this rule are some actions that cross calendar years, and occupation crisis situations. These are discussed further below.

### **Negotiated Resolutions**

Chapter Three notes that OR states should accept only overtly favourable (to themselves) major agreements or negotiated resolutions, DR(GS) nations should be open to accepting an “even split”, while DR(GLS) countries may even accept unfavourable agreements. But of course, even a Peaceful state would be irrational to reject a very beneficial agreement if offered. So, when negotiated resolutions occur, if a state offers or accepts a very beneficial agreement, this provides no insight to state-type; if it does so for an “even split”, this rules out OR motivations; and if it does so for unfavourable one, this indicates DR(GLS) motivations.

### **Considering the Grand Strategy Grouping of Actions**

As noted in Chapter Three, actions are associated with a particular grand strategy group (diplomatic, economic or military) based on whether they harness its means of coercive or cooperative effect. So, a diplomatic statement threatening war is part of the military grouping. However, such a statement condemning, say, a military exercise by another nation as illegal or a cause of tension, remains part of the diplomatic grouping as it does not threaten armed harm. Instead, it relies on the diplomatic grouping’s impact on non-material issue such as reputation.

Further, some actions were considered as aligned with the relevant grouping based on the primary responsibilities of the actor(s) involved. For example, a meeting of

ASEAN Defence Ministers stressing the importance of regional peace was taken as belonging to the militarised grand strategies due to the identity of the group. Such instances are made clear as necessary in the AAD.

### **Considering Announcements of Activities**

In the strategy framework, announcements of paramilitary or military exercises or patrols are treated as declaratory actions while the conduct of such exercises are considered as (more intense) practical behaviours. However, in the NDU dataset states frequently make announcements of actions or patrols only after they occur.

To address this with a counting rule, announcements before an event occurred were treated as declaratory, while if done afterwards, the action was considered to have practically been conducted. If the action was simply foreshadowed and there was no subsequent reporting confirming it, only the declaration was counted. But if an announcement before and after (or during) the event occurred, then both the declaratory and practical action were counted.

### **Initiation and Ongoing Actions under Compulsory Adjudication**

Only distinct individual threats to, or the initial commencement of an adjudication case, are classed as distinctly coercive activities. This reflects that associated developments thereafter perpetuate the process rather than commencing it anew.

In turn, due to the distinctly coercive nature of such adjudications overall, associated diplomatic actions are classed as coercive normal practical major activities. For example, in 2014 Manila submitted to the PCA its memorandum of arguments in support of its case against China that had begun in 2013. This submission is classed as a major rather than a minor coercive activity.

### **Activities That Occur over Time**

In many instances a nation will announce an activity (such as that it will build an airstrip) and then conduct the process over several years. In such instances, the original announcement is treated as declaratory, and any subsequent announcements of progress and completion are counted separately and taken as evidence of a practical action. This reflects that states can use such announcements to increase the credibility of their control over a feature.

### **Actions in Contravention of Agreements**

If two states reach an agreement and one acts in contravention of that arrangement, then such behaviour is considered distinctive coercion of the appropriate type – reflecting the more substantive breach of confidence. This practically only occurs once, when China deploys naval ships to Mischief Reef in 1997 and 1998 after having agreed in 1996 to avoid just such measures. Regarding this agreement in particular, this is considered voided after the 1998 incident, as there is no particular indication that Beijing intends to hold to the arrangement, and hence presumably Manila likewise would no longer would feel bound.

### **Directly and Indirectly Relevant Practical Geographic Actions**

When a practical military or paramilitary action, such as a patrol, is directly associated with a site it is assigned its usual category rating (for such a minor patrol, a Coercive Normal Practical Minor Military behaviour). However, when such announced or conducted actions occur “in the SCS” or “the Spratlys”, and are hence only indirectly relevant, then they are classed at the MPA sites as having an appropriate declaratory impact (in this example, a Coercive Normal Declaratory Military behaviour).

This reflects that while such actions have the potential to be applied to the MPA sites, and hence do carry an implied weight, they are not being as clearly applied.

But due to the greater degree of ambiguity they are less direct in their causal impact and so do not merit the higher coercive category rating.

### Maritime Enforcement Actions

Of note, a special case exists for enforcement actions or marine altercations, such as the apprehension of fishing boats “in the SCS” or “the Spratlys” or even “within nation X’s EEZ”. While such actions can notionally be conducted anywhere, it is intuitively implausible to propose that an enforcement action conducted possibly well over a thousand kilometres from an MPA site is part of a nation’s strategy towards it. Further, the coercive nature of such actions (and the implication for MPA sites) would vary dramatically if conducted within a state’s features’ TS (or mainland EEZ), vice on the High Seas – and in many instances the location is unclear, the boundary of the maritime zone is disputed, or both. To avoid inappropriately assigning category ratings, such actions are not considered to have an indirect impact: they are only assessed when directly related to an MPA area.

### **Counting Implied Actions**

Some acts by nations are only captured in an implied manner by the NDU dataset. For example, China’s declaration of straight baselines for the Paracel island group (which does not accord with the provisions of UNCLOS; CSIS, 2019) is noted via Manila’s protest of the action, rather than the action itself. In such instances, if the action that reported the incident also has a separate logical escalation category (other than being a purely communicative behaviour), then as many entries are created as necessary to capture the behaviour appropriately. To use the previous example, two entries are required: one new entry is created for China’s baseline widening (a legal coercive territorial action) in addition to the original protest by Manila (with this too recorded as a declaratory diplomatic coercive action). But if the report merely captures an action; then it serves as the sole record of the event. For example, a Taiwanese report of Chinese exercises in the SCS that was not reported by the Chinese press, is used once as the record of that action.

## **Considering Multiple Categories from Behaviours**

At times one action can be classed as multiple behaviour categories. In such instances the entry is repeated as many times as necessary to capture the categories, as also affected by which nations the action is relevant to. For example, in 1995, talks between the Philippines and China yielded four agreements but a rejection of Manila's position on the SCS. This can be classed as an instance both of cooperative normal practical major diplomatic behaviour (major, as four agreements have been reached) but also coercive normal practical minor diplomatic behaviour (the formal rejection of Manila's position by Beijing). Due to this, the action is captured twice for China (cooperation and coercion) and once for the Philippines (the cooperative action). And if one of the agreements overtly been noted as major breakthrough, then this would have been entered again as a cooperative distinctive practical major outcome.

Of note, additional categories derived from an entry can affect various MPA sites due to having different direct or indirect relevance. For example, in 2012 China installed a scientific SCS surveillance system at Woody Island. This action is clearly directly relevant to Woody Island and is there classed as a coercive normal practical minor economic act, reflecting the new infrastructure. But due to also enabling surveillance of the region, this behaviour also generates a coercive normal declaratory economic affect item against all the MPA features in the SCS.

## **Actions Affecting Third Parties**

As a general rule, multiple categories relate to actions between two nations, such as China and the Philippines. But in some instances, actions between two or more nations could generate a separate category rating towards others (i.e., "third parties"). To minimise the extrapolation of data, such instances were only generated when certain specific requirements were met.



Firstly, an additional category might logically necessary when an action both aligned with and opposed certain states expressed preferences. For example, in 2012 Malaysia noted that a Code of Conduct (CoC – further discussed below) was being developed by ASEAN while excluding China, with the intent of the finalised document being presented to Beijing in due course. China had previously expressed both an interest in working towards the CoC but also a desire to be involved in its drafting. Hence, Malaysia’s action is both cooperative towards the other ASEAN nations and China (since a CoC is being worked towards) but is also separately coercive to China due to excluding it.

Alternatively, a separate category rating could be generated if a location-specific action between two nations was of a type that, if conducted independently and defensively by a state, would clearly affect third parties. For example, in 2010 Malaysia and Brunei announced their intent to cooperate on oil exploration in an area encompassing Louisa Reef. This behaviour is cooperative between the two. But this action, if conducted by Brunei alone, would be classed as a control-enforcing (i.e., a coercive) activity that would affect all other states seeking to control the Reef. Hence it is classed as a coercive behaviour by Brunei towards them. To minimise data extrapolation, as this effect relates to Brunei’s control of the area this coercive aspect is only applied to its strategy towards other countries. It is not treated as coercion by Malaysia towards those same states.

Finally, an action may generate a third-party category rating if it clearly offensively aligns two nations against another (generally the occupying power) at a specific location. For example, two nations that declare their intent to explore for oil in waters that encompass the TS of a feature controlled by a third are acting cooperatively towards each other but coercively towards the third. However, again to minimise extrapolation, this action does not also count as coercion towards any other nations that might also covet the site.

All instances of multiple categories are made clear by their entries in the AAD. The line items are simply repeated and grouped together where they affect only two

nations. Where third-party effects exist, the line item contains a remark that begins with “see also” and directs the reader to those areas where the additional category rating line items exist. For ease of reference in such instances the appropriate “see also” cells are shaded salmon pink to draw attention to them. These cells are further discussed in Section II.

### **Applying Different Behaviour Categories Across Different Locations**

Individual actions are also assigned different behaviour categories when these can logically be understood to have different impacts at various locations based on factors such as control or expressed national positions. In such instances, no separate line item is made. For example, when China declares a fishing ban in the waters of the SCS north of the 12-degree North latitude line, this is applied as a normal coercive behaviour for those MPA locations it controls – it is behaving in accordance with its rights as a *de jure* (for the purposes of this assessment) sovereign. But this same line item is classed as distinctive coercive behaviours for those MPA locations it does not control.

Such considerations are also influenced based on states’ expressed preferences. Where nations act for, or in opposition to, such preferences, this can be understood as exerting diplomatic cooperation or coercion by showing due regard or rejection of the other nation’s reputation, prestige and interests. Of note this implies that when actions gain a separate category because of such reasons, this new category should always be in the diplomatic range of strategies – since these focus on such immaterial interests. However, in fact the category rating can also be affected by how the action is conducted: so, a rejection of some position by senior defence figure can be considered a militarised behaviour, and so on. Of course, if no preference is understood, simply the innate nature of the action is used.

To illustrate the above, China repeatedly opposed multilateral negotiation with ASEAN on SCS disputes (i.e., where ASEAN would operating as a collective block) rather than China negotiating bilaterally with individual ASEAN nations. So, China

from the start of the investigation period is considered opposed to multilateral negotiation. In turn, the position of the individual ASEAN states has to a degree varied over time, but all have been at least open to the notion.

Hence if an ASEAN state calls to work towards developing a common ASEAN position, the action is treated as the appropriate type of behaviour towards the ASEAN nations (based on its semantic content – cooperative, communicative or coercive). In turn, the action is always treated as coercive in some way to China. In turn, when determining the category rating of an action that is for or against a state's expressed preferences, then either a mirrored, equivalent or minimum level coercive or cooperative rating is applied, based on the analyst's judgement.

For example, a positive call for negotiations between ASEAN defence ministers by Malaysia (such as occurred in 2012) is classed as a cooperative normal declaratory military behaviour towards those ASEAN states, but a mirrored coercive normal declaratory military towards China. This reflects its military nature. However, if at the same forum Malaysia had demanded or threatened ASEAN nations with the aim of gaining such cooperation, the action would be classed as coercive normal declaratory military towards ASEAN and China. Finally, a simple call via media release by Malaysia for ASEAN to work together on the SCS would be classed as communicative towards the ASEAN states but coercive normal declaratory diplomatic behaviours towards Beijing.

These same rules are applied to other relevant scenarios through the AAD. In the spreadsheets, occasions where one action was assigned different categories was highlighted by relevant cells being shaded in blue.

### **Considering Multilateral Negotiation, Legal Adjudication and Codes of Conduct**

For the sake of clarity, specific rules were developed for three key matters that repeatedly occur in SCS state activity: seeking adjudication of disputes by the UN; conducting multilateral negotiations; and the ASEAN-China non-binding Declaration

on the Conduct of Parties in the SCS (DoC – signed in 2002) and efforts towards the successor legally-binding CoC (still unresolved). For these, the matter of UN adjudication of features is discussed in Chapter Three and has been sought by nations such as the Philippines. Multilateral negotiation mainly refers to efforts to organise the ASEAN states to negotiate collectively with China to resolve SCS territorial disputes; and occasionally to comments by China that may be inferred to also relate to Taiwan. And the DoC/CoC are documents that commit all states (ASEAN plus China) to a peaceful resolution of SCS disputes.<sup>378</sup> The key matters with these documents (aside from their slow progress) have been whether the CoC should be legally binding and the degree of China's involvement in the development of the CoC, in the sense of whether ASEAN should develop a document internally and then present it to Beijing for negotiation, or whether China should be involved from the beginning (Thayer, 2012).

In terms of these measure's cooperative or coercive nature towards various states, this is detailed as required in the AAD. However, in general, multilateral negotiation and UN adjudication have been opposed by China throughout the period and are treated as coercive towards it.<sup>379</sup> In turn, the ASEAN states are considered to be open to (but not necessarily for) multilateral negotiation, based on sentiments expressed throughout the AAD. Hence, calls for multilateral negotiation from ASEAN states are treated as cooperative, communicative, or coercive towards other ASEAN states, based on the content of the line item, and as always as coercive towards China.

Of note, the simple fact of discussions occurring between China and ASEAN on the SCS were considered consensual, communicative actions between all parties. But if such discussions occurred without China present, are in contradiction to Beijing's

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<sup>378</sup> In fact, the DoC more overtly addresses these issues, with the CoC draft originally doing so but having a reduced focus on peace and controlling militarisation from August 2012 (Thayer, 2012).

<sup>379</sup> Of note the terms DoC/CoC are treated interchangeably in AAD entries until the DoC is signed in 2002. Throughout, Beijing's position on a legally binding document is debateable, having originally rejected the notion but then become involved in endlessly extending debate and negotiations, to the extent of being overtly accused of deliberately delaying the document (Esguerra, 2019).

preferences (for example, China had announced before a meeting that it did not wish the SCS discussed, but this occurred regardless), or resulted in outcomes opposed to China, they were treated as communicative towards ASEAN (or cooperative or coercive, based on content) but always coercive towards Beijing.<sup>380</sup>

Also, when China expresses opposition to multilateral negotiation that may involve Taiwan, this is considered to provide no information on Beijing's motivations as it views Taipei as a renegade province – and multilateral negotiations would arguably enhance its standing as an independent nation. Hence any state-type could be expected to oppose such measures.

In terms of China's involvement in DoC/CoC drafting, based on the timeline by Thayer (2012) and AAD entries, China is treated as being willing to be excluded from DoC drafting until its signature in 2002. China is treated as being willing to be excluded from CoC drafting until January 2012, when it sought involvement, which ASEAN agreed to from late April 2012.<sup>381</sup> Hence the coercive nature of actions to include or exclude China are affected by these dates.

Further, in terms of these actions' geographic remit the following rules were used:

- Proposals for multilateral negotiations are treated in accordance with the rules described previously. That is, for actions by an ASEAN state, if the action is:
  - cooperative, it is treated as cooperative towards the other ASEAN nations where the state has offensive objectives, as a platitude towards those same nations where the state has defensive objectives, and as coercive at all sites towards China;
  - coercive, the coercive rules apply towards all nations and locations; and

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<sup>380</sup> This also encompasses interactions after August 2014, when Beijing announced its interest in a "dual track" strategy of bilateral dispute resolution but also concurrent engagement with ASEAN. If discussions are held without Beijing, they are still considered coercive towards it.

<sup>381</sup> Specifically, a compromise was reached where ASEAN would develop the draft first but still coordinate with China through the ASEAN Chair (Thayer, 2012).

- Communicative, it is treated as communicative at all locations towards ASEAN and coercive at all sites towards China.
- Of note in any instances involving ASEAN, locations held by Taiwan are excluded due to Taipei not being a member of ASEAN.
- Proposals for UN adjudication are presumed to only apply to those locations in the adjudication area where the proposing entity has offensive aims, unless otherwise noted in the scope of the action in the AAD line item.<sup>382</sup>
- Actions relating to the DoC/CoC are considered to apply to all MPA locations (including areas where states have defensive aims) relevant to ASEAN in the SCS with the exception of those held by Taiwan. This reflects that while no draft of the CoC has ever been released, it is almost certainly intended to be a document whose tenets apply to all signatories equally. This both aligns with the existing DoC for the SCS (which does not specify any geographic limits) and that an unequal document would reasonably be dismissed by Beijing (or other signatories) as untenable.

### **Leadership Visits**

Due to their rarity and high profile, and thereby increase in states' credibility for claims of possession, visits by senior leaders to disputed locations were classed as distinctive practical diplomatic coercion. Should such actions also be matched with rhetoric vowing threats of force, or utilise military assets such as warships, such actions were classed as distinctive practical military coercive diplomacy.

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<sup>382</sup> A concept reflected in practice. For example, when the Philippines in 2013 sought UN adjudication of its SCS dispute with China, Manila's case included those features it claimed that were occupied by Beijing, but excluded Thitu, which is occupied by Manila but claimed by Beijing (PCA, 2016).

## Assessing Administrative/Legal Actions

The categorisation of actions as administrative/legal is conducted (as is the assessment of all actions) by logical consideration of behaviours against the criteria listed in Chapter Three. While the rationale behind why an action is rated in this category should be self-evident from the line item in the AAD, the following additional considerations were also used:

- Actions such as the formal signing of the DoC, or written senior level reiterations regarding it (such as ASEAN Ministerial joint statements referring to its importance or implementation) were considered as cooperative normal administrative/legal diplomatic actions. This likewise applied to similar actions regarding other principles.
  - However, simple statements by individual nations, or even informal multilateral references to the utilising the DoC or CoC (such as a note that two leaders agreed to its importance), were viewed as declaratory diplomatic actions. This better captures the difference between the more formal nature (and escalated impact) of the former types of actions.
- Agreements to conduct matters such as establishing hotlines or engaging in air and sea rescue were captured as administrative/legal actions, with the advice that such measures had actually been implemented then counted as the appropriate type of practical action. This includes when the “agreement” is only mentioned in passing, such as in a media release saying two nations had agreed to establish a hotline, rather than report of a formal signing. This is because such measures are suitably specific and infrequent that even notes in passing were judged suitable to be classed as a formal admin/legal action, rather than a declaratory one.

## **Reconciling Conflicting Distinctive and/or Response Actions**

Both distinctive actions, and responses of all types, have particular value to identifying state-types due to their due nature – they represent information that allows motivation to be discerned with increased granularity and confidence. But in some instances, states undertook actions at single sites within a year that were opposed to various degrees and notionally would indicate different state-types. Such actions could include ignoring an instance of substantive coercion from another nation (a DR(GLS) behaviour) while also engaging in distinctive coercion (which would typically indicate a Revisionist). Alternatively, a nation might engage in OR-Style distinctive coercion but also an Opportunistic state typical matched response to some other action.

In such instances these behaviours were generally taken to indicate DR(GS) behaviour. This reflects that while Status Quo nations are not generally presumed to engage in distinctive behaviours, their capacity to do so, and also their broad flexibility in approach, is taken as the best fit for such patterns. Of course, such assessments were also influenced by the broader pattern of actions that nations engaged in. For example, consistent Revisionist aggression matched with a handful of instances of DR(GS) or DR(GLS) behaviour would tend to be judged as OR overall.

## **Harnessing Available Assessments of BOP and PTT**

In some instances, an action might provide evidence of BOP vice PTT under one theory but not for another. In such instances, the evidence was recorded and used as usual. For example, in 2003 Malaysia conducted only a single act towards Brunei: distinctive economic coercion by opening territory to foreign companies for oil exploration, including an area that appeared to encompass Louisa Reef. At this time, Kuala Lumpur held power superiority.



As this singular action comprises the totality of Malaysia's behaviour, it can be explained either as an action by a DR(GS) or OR state.<sup>383</sup> But under the former provides no insight into BOP vice PTT as the action is not militarised; while under the latter it supports PTT, as otherwise Malaysia would have preferred a militarised measure. So, the PTT response is recorded.

### **Counting Multiple Quantities Within Single Reports**

When one or multiple instances of some matter are issues are captured in a single report, then this is captured as a single action, moderated by the analyst's judgement as to its major or minor impact. But these same outcomes would be captured separately if so reported.

For instance, the previous example of four agreement between the Philippines and China is counted as a single instance of major practical cooperation. If these had occurred over different months over the course of the year, announced in various reports, then four minor instances would be recorded.

Similarly, individual military units, or groups despatched together, are counted once. So, five ships being sent to loiter or patrol through to a TS, or three aircraft conducting an overflight, are a single action. Additional deployments (from one to however many units, of various types) are also counted single actions.

### **Accommodating Escalation and De-escalation**

While simple instances of coercion and cooperation are easily addressed in the framework, less easily considered are variations that enhance or decrease the level of confrontation or collaboration. This is particularly so if they involve multiple units of activity, such vessels (for physical units) or numbers of agreements (for conceptual units). For example, the deployment of 10 ships to loiter in another

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<sup>383</sup> See the heading below on *Considering Limited Acts of Self-Initiated Offensive Distinctive Coercion*.

state's feature's TS is clearly a form of distinctive coercive action. But if five of these ships are withdrawn, while this decreases the level of coercion, it is not as clearly an overtly cooperative act as those contained in the cooperative elements of the spectrum. Similarly, in one meeting two nations might sign five diverse cooperative agreements, but later, if relations worsen, choose to withdraw from some.

To address this, de-escalatory actions are treated both as line items and qualitatively. The action itself is captured in an appropriate entry in the AAD and is assigned the category rating as if it were a typical action but with a note that this is a de-escalation, and also assigned an appropriate separate number code.<sup>384</sup> This impact is also described and assessed in the qualitative summary at the end of location section.

For example, if 10 ships were deployed and five withdrew, the withdrawal would be classed as a coercive distinctive practical military minor (de-escalation) action. This would be qualitatively described as being indicative of a DR(GS) state's actions rather than an OR state, which is expected to engage in further escalation. In turn, deploying five additional ships (to make 15) would also be categorised as a coercive distinctive practical military minor action, and assessed as a qualitative escalation. The same rules are applied in turn for the de-escalation of cooperative actions.

Of note, actions involving multiple or individual units are treated as single line items in the AAD as they occur over time. This may result in the equivalent outcome (say, five ships of 10 being withdrawn) being counted more often. The effect of this is that, particularly when examining summary data in graph form (discussed in the AAD description further below, see [Figure C1](#)), there may appear to be more de-escalation occurring than there is escalation. In such instances, a sensitive reading of the line items is required to appropriately appreciate the situation.

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<sup>384</sup> Only actions that are de-escalations have this term specifically noted in the AAD. Otherwise, simply the action and its category are listed, and it is understood as an escalation.

## Classifying Deployments in Occupation Crisis Situations

A deployment of units that initiates an occupation crisis (for example, by conducting a land grab) is categorised as a crisis initiation behaviour. Subsequent reinforcements are classed as coercive diplomatic behaviours unless the units act in a crisis initiation manner, such as engaging in lethal violence. This reflects the rational proposition that the state is seeking to control further escalation, and hence minimise the potential for further costs, unless its units clearly act otherwise.

### Actions During other Crises

Separately to attempts at occupation, a crisis at an MPA is also considered to occur when a state conducts a crisis initiation action, and this is matched by another party with an action indicating a period of heightened tension is occurring. For example, one nation may threaten the prospect of attacking another's forces if they intrude on its maritime zone again and the other state may respond with a declaration of its intent to do so regardless, or simply conduct a deployment. Alternatively, one country may attack the forces of another, and the latter declare its intent to strike back in turn.

Once a crisis begins, practical normal paramilitary and military control-enforcing actions by the defender, and normal practical paramilitary and military coercive actions by the aggressor (such as having its vessels pass through the feature's TS) are considered as coercive diplomacy *with respect to the other party* (they retain their normal characteristics towards other states). All other actions retaining their category as based on their inherent nature.

The crisis is resolved once both nations cease their distinctive coercive actions with no indication they are likely to recommence and/or an agreement is reached that indicates the no further distinctive coercion will occur for the immediate future.<sup>385</sup>

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<sup>385</sup> For example, a nation may agree that another state's forces may in fact loiter in its feature's TS. In such a situation, such actions are no longer distinctly coercive.

After the crisis is resolved, all actions are again categorised based on their inherent nature; as there has been no change of control at the feature, no 12-month period of increased sensitivity to actions is applied. All such instances of crises are described in the AAD.

### **Actions During Coercive Diplomacy**

Aggressor nations may engage in coercive diplomacy actions for extended periods, such as loitering in feature's TS or conducting exercises there. In such situations, the defender's practical normal paramilitary and military control-enforcing actions by are considered as coercive diplomacy *with respect to the other party* (they retain their normal characteristics towards other states). All other actions retaining their category as based on their inherent nature. All such instances of behaviour are noted in the AAD.

### **Infrastructure and Weapons Developments on Already-Controlled Features**

All nations are expected to engage in some level of self-initiated infrastructure development on disputed features that they already control in order to both cement their control over the location and/or enhance their ability to extract value from the area. Such infrastructure can include civilian (such as fishing harbours), paramilitary (such as coastguard facilities) or military installations (such as sites for missile launchers). Similarly, all nations are expected (noting the already militarised nature of the SCS) to potentially position new weapons on the features they occupy. Of note, all such behaviours are not considered to be tied to the balance of power, instead reflecting the general incentives on nations to control and exploit their territories.

When observed, infrastructure actions are considered to be paramilitary activities unless noted otherwise. This reflects the ability of even notionally innocuous structures such fishermen's shelters (erected by China on Mischief Reef as part of its initial occupation) to both serve as paramilitary facilities, and also reflects their

construction under a maritime protection role. In turn, weapons are classed as military unless otherwise noted (for example, based on a description in a line item that weapons are intended for Coastguard use).

If such construction occurs on a feature already occupied by a nation at the start of the investigation period, then it is generally considered a defensive normal coercive action of the appropriate type. Likewise, if deployed weapons are essentially short ranged (suitable only for TS defence, or being missiles with 50km or less range), then this is too classed as defensive normal coercion.

### Distinctively Coercive Actions

There are four key exceptions to such actions being treated as normal defensive coercion, instead being treated as distinctive defensive coercion. These are circumstances where nations:

- Build entirely new structures where none had existed previously, even if this occurs on features that they already control via naval patrols, or where no such control exists but the feature lies within their EEZ. Such new construction represents a greater and more permanent change to the status quo – materially increasing the credibility of the possession of the occupying state. Such changes are treated as distinctive defensive paramilitary or militarised coercion, depending on the nature of the structure.
- Build dramatically larger features (via reclamation) or facilities than those of other states. This is considered a distinctly escalatory economic outcome (since the new land or facilities are treated as suitable for economic use), and can only be identified by comparing the new construction to the status quo ante.
- Build dramatically larger paramilitary or military facilities at features. This is respectively treated as distinctive defensive paramilitary or militarised coercion.

- Emplace long-range (50+ km) weapons at MPA sites. These weapons are a major escalation as they can project power out to a greater number of nearby features (the exception is if such weapons are on the Paracels, which are entirely Chinese controlled and with no other features close by).

Practically, only the second and third criteria were relevant during the investigation period. These applied firstly to China's substantial reclamation activities on Fiery Cross Reef and Woody Island, with major work visible or reported by September and December 2014 respectively. Secondly, they applied to major military facilities construction underway on Woody Island and Fiery Cross, and major reclamation and subsequent military construction on Mischief and Subi Reefs, all visible from approximately April 2015.<sup>386</sup>

### **A Focus on National Government Actions**

As state strategy is being assessed, the principal actions considered were those by national government forces (e.g., coastguards or militaries) or agencies or individuals (foreign ministries, spokespeople etc). Acts by private citizens, organisations (e.g., fishermen) or local or provincial governments were not generally considered representative of state actions unless some thematic evidence in the line item indicated it could be associated with Government direction.

Similarly, the nature (i.e., more, less, or equally cooperative or coercive) of any national government responses to non-national government actions were not treated as provide information on their strategies with regards to other states. This simply reflected that such behaviours were not responses to other countries' official actions.

However, responses to non-national government actions could still inform state-type assessments in two ways. Firstly, if they were distinctly coercive or

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<sup>386</sup> As seen on satellite imagery on the CSIS Island Tracker website (CSIS, 2018c) and Lee (2015a, 2015b).

cooperative (in practice, always the former). So, if a nation's coastguard responded with fatal violence to intruding fishermen, this indicated a DR(GS) or OR state. Or, if such actions occurred during power inferiority, they reflected an irrational nation – as such behaviour clearly risks provoking a response.

Secondly, the response's category rating and intended target were considered as if they were an initiated action (a matter further discussed below). For example, a Chinese spokesperson may respond to a media query, regarding Beijing's view of Manila's claims in the SCS, with an assertion the entire area is indisputably Chinese territory. As the response is to a private sector organisation, no information can be gleaned from its nature of how it relates to behaviour by Manila. Instead, only the category rating, a coercive normal declaratory diplomatic action, is considered, and applied to all the sites China disputes with the Philippines – as if it were an initiated action it would indirectly apply to all these.<sup>387</sup> However, if the media query was prompted by a recent specific announcement from Manila, then China's response would be considered as if responding to the Philippines government.

In instances where a response was to a non-national government action an explanatory note was typically included with the line item. This observed that the action was classed as a response but, being to a non-national government action, for the purposes of analysis only the category rating was used.

### **Counting Rules: Considering State Behaviour Across Calendar Years**

To support the robust sampling of the data, at the beginning of each year, each country's annual behavioural assessment was re-commenced as a "clean slate" without reference to the behaviour it had conducted previously. This prevented the actions of one year affecting all succeeding years and skewing the results of the

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<sup>387</sup> Of note if one of the six nations under consideration was responding to a third party whose behaviour was opportunely included in the dataset, it was considered as directed against all other nations. For example, a Chinese response to Japan that claimed sovereignty over the SCS was considered as directed by Beijing to all other claimant states.

analysis. Such an approach is also logically justified in terms of the testing the power of the theories: if nations truly are strongly driven by either internal and/or structural motivations, this should be evident in their repeated behaviour.

Of note, if particular practical actions were in progress at the end of a calendar year, they were counted as “new” in the succeeding year, to reflect their ongoing incorporation in a state’s strategy. This rule was also applied to the presence of military forces and the “fact of” occupation during the period of crisis situations and (for occupation crises) the succeeding 12 months, reflecting their essentially novel nature during this period. So, if a nation had deployed military forces near a feature on 31 December, their continued presence on 1 January was counted again in order to capture this element. This also allowed any subsequent withdrawal to be captured as de-escalation. Or if a nation had occupied a feature in on 10 November via a land-grab, this was counted again on 1 January to reflect its ongoing control, but not again on the following 1 January.

Regarding such cross-year activities, non-occupation instances were only listed when the activity explicitly crossed into the new year period, in order to follow the principle of minimising data extrapolation. Also, this approach does raise the risk that an existing in-place military presence that is the result of a slow DR(GS)-typical escalation could be counted as rapid and “new” escalation (OR behaviour). This is addressed by appropriate nuancing in the qualitative descriptions of annual events in the AAD and consideration of broader trends in the cumulative analyses.

### **Counting Rules: Assessing Behaviours at Offensive and Defensive Locations**

Nations’ strategies (and hence motivations) are determined by assessing the total quantity of the actions and reactions that they conduct that relate to MPA locations. As noted previously, both direct and indirect actions can apply to such locations, hence these must be added together or “stacked” to develop annual totals that enable identifying overall patterns of behaviour. For example, the Philippines’ strategy at Thitu Island would be identified by both directly relevant



actions (such as ships sent to the location, or specific mentions of it in government pronouncements) and indirect actions that happen to encompass the site, such as broad claims by Manila of sovereignty over the SCS.

Of note, in some instances direct actions can produce indirect responses that apply to a broader area, or vice versa, or combinations thereof. For example, in reaction to a Chinese declaration of sovereignty over the SCS, Manila might respond with a statement reaffirming its ownership of Thitu. In this instance, Manila's behaviour is counted as only relating to its strategy at Thitu. Alternatively, in response to a specific Chinese claim on Thitu, Manila might respond with a statement reaffirming its overall territorial claims in the SCS. This provides an indirect action that is counted as part of the Philippines' strategy towards all its MPA locations that it contests with China.

### **Behaviour at Offensive Locations**

States are understood to always be seeking to gain control of lands they claim but do not possess, or the greatest share of benefits short of that. At these offensive locations, all states' direct and indirect actions and reactions are counted as being part of a nations' deliberate strategy to gain the site. Also included were states' actions, or lack of reaction to, other nations' substantive behaviours (typically those of the controlling country).

The exception to the rule of including all behaviours were those indirect actions judged to be logically inapplicable. For example, if a nation declared it would defend its outposts in the SCS, then this clearly refers to those locations it already occupies.

### **Behaviour at Defensive Locations**

Behaviour at defensive locations is understood as always being conducted with the aim of retaining areas already controlled, or the maximum degree of benefit. Actions conducted at such sites were not considered to be directed towards any

particular state unless overtly declared so by the incumbent, or were able to be identified as such due to being a response.

Also, further complications exist in assessing behaviour at defensive locations precisely because all nations are presumed to always be seeking to maintain control. As a first result, all state-types are expected to self-initiate coercive behaviours to enforce their control without reference to other states. Such actions are referred to as control-enforcing behaviours and include direct activities such as building infrastructure or conducting patrols. These are driven by the rational need for a state to exploit territory for economic benefit, and to be prepared to defend it in an anarchical international environment, regardless of the immediate threat posed by other nations. Further, all nations can also be expected to conduct measures such as printing maps showing their asserted borders, and such indirect control-enforcing measures by default can also encompass the defended site. Due to their nature as actions that can be expected from any rational nation, such control-enforcing behaviours are expected from all state-types. Hence their occurrence, even while being coercive within this dissertation's strategy framework, provides no real insight into motivation; and indeed, counting these as evidence towards, in particular, more DR(GS) or OR motivations would be misrepresentative.

Similarly, all nations are expected to make occasional indirect (i.e., broadly geographically applicable) statements of cooperative or peaceful intent that would by default apply to such defensive locations. But states may make such declarations to express a willingness to cooperate in areas they have offensive objectives but with no real intent to offer the same for sites they control – noting their motivation to give away as little benefit as possible. States may very well not make this distinction clear for various reasons. For example, they may wish to build their international reputations as reasonable actors (which would logically be burnished by appearing to offer to cooperate everywhere), or because they assess that to gain access to lands held by an opponent elsewhere, they at least notionally need to offer their own in turn; although in either scenario they do not actually intend to

cooperate. Or of course they may make such broad offers because they genuinely seek cooperation at any and all locations.

Due to the variety of potential motivations, such indirectly applicable cooperative actions intuitively provide little insight into motivation. And it would likewise be misrepresentative to take such actions as indications of genuine DR(GLS) intent.

To address these issues, the following counting rules were used when identifying patterns of behaviour:

- For cooperative actions (normal or distinctive) that may provide some benefit to another claimant, such as offers of economic or military cooperation, only directly applicable initiations and responses were judged relevant to a state's strategy. Indirectly applicable cooperative actions, in effect "platitudes" were not considered to provide any insight into state-type unless they met a higher burden of proof that would allow them to be assessed with confidence to apply to a location. All relevant applicable cooperative instances (direct and indirect) are described in the qualitative assessments of the AAD and/or line items as and when necessary (a matter addressed in TAD Section II).
  - One specific case of defensively applicable indirect actions are informal, implied or formal agreements between states. These actions can range from simple statements that leaders had met and agreed to resolve matters peacefully, through signed formal statements of joint principles to guide resolution, to actual finalised diplomatic accords. Such actions are considered to apply (unless evidence indicates otherwise), as it is intuitively implausible that the other party to the agreement would accept the reality or implication of a limited remit. Therefore, when two parties agree, there is a clearer reputational cost for one if it were to renege, meeting the higher burden of proof. Of note, this rule does not apply to issues such as

declaratory statements of reciprocal agreement separated in time, which are instead treated as issues of initiation and response.<sup>388</sup>

- Self-initiated low-level (normal) control-enforcing actions were judged applicable but were not considered to provide any information regarding state-type.<sup>389</sup> This applies too for most responses to non-state actions, such as a defending nation conducting fisheries enforcement.<sup>390</sup>
- Normal coercive responses to actions by other governments were counted, but as all nations are expected to seek to maintain control, the “fact of” a response being coercive provides no information useful for distinguishing state-type. However, the relative escalation of the response (i.e., the second piece of information it contains) does provide insight into state-type.
- Distinctive coercive actions, self-initiated or responsive, were counted.
  - The exception to the rule of including of all distinctive coercive behaviours were those indirect actions judged to be logically inapplicable. For example, if a nation threatened war on another in the SCS, then this clearly refers to locations its adversary occupies.
- Defenders’ responses, or lack of thereof, to other nations’ substantive behaviours was included.

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<sup>388</sup> So, one leader declaring an interest in peaceful resolution, with another leader separately agreeing at a later point. This is treated in the manner of responses, described below, but would in essence provide no insight on the first party’s intentions towards its defensive locations. But if the two leaders jointly agreed (such as via a joint statement) on the need for a peaceful resolution, this would apply to all locations.

<sup>389</sup> Of note, in many instances in the NDU dataset, states conducted patrols “in the Spratlys” or similar and these likely may have called-in at these nations’ features. Such actions are not captured under the rules for associating actions with MPA features, but even if they were, under the approach here these would have provided no insight into state-type, being normal control-enforcing behaviours.

<sup>390</sup> The exception is when such actions had distinctive characteristics, such as using lethal force.

Of note, those actions that are considered to provide no insight into state-type (such as “platitudes” and low-level coercion) were still included as line items in the AAD and assigned category ratings. However, their lack of impact on determining motivations was observed, as appropriate, in the AAD qualitative sections.

#### Constraints on Providing Insight into Motivation

A by-product of the approach to assessing actions in defensive scenarios is that very frequently no useful information is obtained in terms of state’s motivations as the majority of actions they engage in are either not applicable or are common to all state-types. And this outcome is indeed often displayed in the results section. Yet while this is undesirable when attempting to generate a large dataset of useable assessments, such outcomes are also a sensible result when considering nations’ behaviours. After all, countries of all motivations *should* act in many common ways to secure their territories; and due to states’ interests in maximising their own benefits, any assertions of cooperation should be viewed with caution. Hence, treating many defensive instances dataset as providing no insight was considered a superior means to conduct a strong test of theory rather than ascribing motivations with doubtful justification to gain a larger useful sample space.

#### The Applicability of Defensive Scenarios

Finally, the notion of assessing state-type via strategy in defensive scenarios sits somewhat uneasily with the definition of strategy given in Chapter Three: a pattern of actions deliberately undertaken by a nation to influence other states to achieve specific ends. Noting that all countries are considered to conduct behaviours at defensive sites that do not relate to other nations, how can such scenarios sensibly be harnessed to assess strategy?

The answer is precisely via the counting rules used above. So, Chapter Three also describes how some coercive distinctive behaviours can be considered as scope-related identifiers for state-types, even if not directed at other nations. Also,

those actions that can specifically be identified as part of state-specific strategy are clearly applicable to identifying scope and direction. And it is just these types of behaviours that are the ones used in defensive situations.

### **Sufficient Actions to Identify Patterns**

In many instances, nations would engage in only a handful of actions at any location over the course of a year. It was judged intuitively implausible that, in particular for normal actions, that only one or two low-level behaviours provided sufficient insight to identify a state-type pattern. Hence minimum action requirements were set to be able, per year, to assess a state's motivations at an MPA site. These minimum requirements involved the observation of:

- three or more normal actions relating to separate events that provided information (i.e., were not line items capturing multiple effects of individual actions;<sup>391</sup> and were not communicative behaviours, or, for defensive sites, gov indirect cooperative actions, or normal control-enforcing behaviours);
- one or more distinctive actions;
- a lack of substantive coercion at a site where a state had a least power parity and offensive objectives – thereby indicating a DR(GS) or DR(GLS) state; or
- one or more responses, or lack of responses to substantive coercion.

### Combining Minimum Requirements and Considering Weak States

Should none of the above requirements be met, there was judged to be insufficient behaviours to adjudicate state-type. The exception was where nations were weak

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<sup>391</sup> In such instances the author's judgement was used on which of the multiple effects was the most appropriate for assessing the pattern of behaviour.

and held offensive objectives. A lack of sufficient actions in such instances was judged representative of weak state behaviour.

Finally, the minimum requirements listed above needed to be met when combining actions to consider the patterns of states behaviour. So, if there was, for example, one distinctive action and two normal actions, then only the distinctive action was counted. However, if there were three or more normal actions that provided information, these would be considered with the distinctive action to assess the nation's motivation. Of note since responses carry two pieces of information, a normal response was counted as contributing to the minimum count of three acts.

### **Considering Limited Acts of Self-Initiated Defensive Distinctive Coercion**

Of note, both DR(GS) and OR states are expected to on occasion initiate non-militarised distinctive coercion at areas they control, with this being independent of the actions of other nations. Due to this, if a single or very few instances of such self-initiated coercion occur, then either theory is considered to explain the actions of such a state.

### **Considering Limited Acts of Self-Initiated Offensive Distinctive Coercion**

At offensive locations, Revisionists are expected to engage in persistent distinctive coercion, while Status Quo states may do so too, either as opportunistic "ad hoc" actions (within a broader span of normal behaviours) or more deliberately after a period of slower escalating through lower levels of coercion. These patterns normally supported the effective identification of state-types. But in some instances nations engaged in singular or very limited acts of distinctive coercion without further actions to provide context. Such behaviours hence could either be explained by either theory: they could be the sole form of action selected by an opportunistic DR(GS) that year, the representation of where a deliberately coercive DR(GS) had reached in its strategy, or simply be the core actions of an OR state. Therefore, such behaviours were considered to support both the DR(GS) and OR theories.

### **Considering Individual Acts of Self-Initiated or Unclear Distinctive Cooperation**

As noted in Chapter Three, DR(GLS) nations are expected to engage in escalating cooperation based on reciprocity. That is, if other nations engage with and reflect the Peaceful state's initial lower-level (normal) collaborative acts, then the country gains confidence in their bona fides and proposes escalation to riskier but more beneficial distinctive collaboration.

However, in various instances in the dataset states proposed (i.e., self-initiated) or agreed (where the initiator is unclear) distinctive collaboration without evidence of extensive lower-level cooperation. This is still taken as evidence of DR(GLS) motivations unless other actions (i.e., broader patterns) give reason to assess otherwise. This reflects OR and DR(GS) nations are considered to be particularly unlikely to initiate such actions. Hence, highly cooperative proposals (such as by the Philippines in 1997 for a broad SCS demilitarised zone) are considered to reflect efforts by Peaceful nations to start the process of collaborative breakthroughs, noting that any practical implementation would still take time and reciprocity.

### **Counting Rules: Integrating Responses into Considering States' Strategies**

While the above provides the core framework for how actions are considered, some additional rules are required for incorporating nations' responses. This reflects that such behaviours contain two differing types of information (the relative nature of the response and its category rating), and that these logically can relate to different locations in different ways. This is affected by whether the initial action and response is direct (location specific) or indirect (geographically broad), and for the latter, responding states' differing offensive and defensive objectives in those areas.

For example, in response to a press release by Manila claiming the Chinese-occupied Mischief Reef (i.e., a low-level coercive action towards China), Beijing may respond with a general assertion of its sovereignty over the SCS (i.e., a low-level coercive response to the Philippines). Logically, China's response shows



DR(GS) behaviour with respect to Mischief Reef, as it has matched low-level coercion in kind. But this assessment only applies to this one location; as nowhere else has Manila provided an action to respond to. Yet China has also made a broad assertion of sovereignty regarding other areas controlled by the Philippines and other nations. How should such actions be treated?

To address such matters, counting rules were developed that treated and applied both elements of response information separately. Specifically:

- When considering the relative nature of a nation’s response, this is taken to apply only at the MPA location(s) targeted by the initial action, as moderated by the nature (direct or indirect) of the response. So:
  - The targeted locations are determined by them either being overtly stated (for directly relevant actions) or, for indirect actions, with this being logically inferred based on where they provide information (as discussed above) based on the initiating states’ offensive and defensive objectives.<sup>392</sup>
    - In certain instances (such as some proposals for notionally “mutual” action), a sensitive analysis is required to identify the targeted locations, although generally such actions are considered to apply to all relevant sites under dispute between the states. Such descriptions are included as necessary in the qualitative sections of the AAD.
  - Once the targeted areas had been determined, the nature of the response was held to apply to those areas it was relevant to, based on its direct or indirect nature. So, for a direct response (say, at one MPA site) to an indirect action that had affected many, the nature of the response would only apply at the one MPA location. However, an indirect response to an indirect action would apply to all the targeted locations, and so on.

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<sup>392</sup> That is, cooperative and coercive proposals apply only where the state has offensive aims, unless the behaviour meets the requirements to also apply at defensive locations.

- On some occasions the action targeted a specific area that was not an MPA site, hence the relative nature of any response would of course not apply to any of these features. However, such responses' indirect category ratings still applied, as discussed below.
- The category rating of a nation's response is considered to apply at the same locations where the nature of the response applies, together with any wider MPA locations nation-relevant to the response<sup>393</sup> (if it is indirect). In conducting this process:
  - When analysing the effect of the category rating, it is treated in accordance with the rules used for initiated actions. So:
    - For those areas where the responding state has offensive objectives, the category rating applies and provides information in all instances.
    - Where the nation has defensive objectives, the cooperative categories apply (but provide no information unless the location is overtly referred to) and low-level coercive actions apply but provide no information.
  - The category rating of the response is treated as a response at those sites where the nature of the action also applies, but it is treated as an initiated action at any broader locations.
    - For example, in 1998 Manila responds with threats of war (a distinctly coercive act) in the Spratlys in response to China's deployment of naval ships to Mischief Reef. This is clearly an indirect response applicable beyond the Reef. So, at Mischief Reef, Manila's behaviour is treated as a

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<sup>393</sup> So, to use the previous example, China's response of claiming sovereignty over the SCS would only apply to those MPA locations it disputed with the Philippines.

response to China's actions. But at wider Chinese locations in the Spratlys it is treated as self-initiated aggression by the Philippines.

When considering responses, the following general notes also apply:

- For the avoidance of doubt, in general only one line item, classed in the AAD as a "response" is used to address the various permutations described above. That is, there are no separate line items created for where the action is treated as an initiation, nor is the response "reclassified" as an initiation at those locations.
- To assist in the practical manual task of reviewing responses and their impact in the AAD, where a response has a broader indirect impact, then notes for the analyst are typically included such as "treat response as initiated behaviour aside from location X".
- For the avoidance of doubt, where nations did not react to substantive cooperation or coercion, this absence of response only provides insight into their motivations at the location(s) targeted by the substantive action.
- In some instances, a response might prove to contain various elements of information that could be assigned different category ratings. In such instances, the author's judgement was used to determine the primary category rating that was to be classed as the response, with additional line items created for the other elements of information. The latter were treated classed as, and treated in accordance with, the rules for initiated actions.
- Any patterns of series of responses were considered in alignment with the rules discussed above to provide insight into the state's behaviour at the targeted location (i.e., to search for a best fit). The category ratings likewise were considered at the wider MPA sites they applied to.

While somewhat complex, these rules provide a logical and consistent pathway to support consideration of nations' responses in a manner aligned with the existing rules for counting actions. These in turn are designed to be cognisant of states' presumed motivations in terms of gaining and maintaining control of areas.

### **Counting Rules: Annual Assessments – Codes and Action Combination Rules**

Using the approaches discussed here supports the identification of state-types on an annual basis at each location. However, in many instances the various actions provided insufficient evidence to clearly identify a proposed state-type for that year, or only enabled a coarser appreciation such as DR(GS)/(GLS) by ruling out a Revisionist. Such outcomes highlight the importance of the cumulative assessment conducted looking across the 21-year period. In terms of annual assessments, in the AAD the following codes and illustrative associated bases of assessment<sup>394</sup> were used when considering how to combine various actions:

- *DR(GS)BOP, DR(GS)PTT, DR(GLS), OR(BOP) or OR(PTT)*. Where countries acted sufficiently clearly in accordance with the expected behaviours from these state-types in terms of scope and direction.
  
- *DR(GS)*. Where nations:
  - behaved as expected by Status Quo nations (i.e., engaging in the normal range of coercive and cooperative behaviours) but did not engage in the type of distinctive escalation that would provide evidence of BOP or PTT inclinations; or

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<sup>394</sup> The examples listed here do not form a complete list. The logic behind assessments is provided on a case-by-case basis in the qualitative assessments in the AAD.

- engaged in diverse cooperative and coercive actions, such as mixtures of distinctive coercion and cooperation, or unusual mixtures of escalating and de-escalating responses, or combinations thereof.
- DR or OR; or combinations thereof (DR(GS)/OR): where nations engaged in behaviours that were insufficiently distinctive to identify them beyond these broad categories. Such outcomes could occur in various ways, for example:
  - *DR*. States engaging in:
    - normal cooperative behaviours at locations where they had offensive or defensive aims; or
    - no distinctive coercion for 12 months where they had offensive aims;
  - *DR(GS)/OR*. States engaging in:
    - behaviours at defensive locations (such as limited instances of non-militarised distinctive coercion) that ruled out DR(GLS) motivations but provided no further state-type insight; or
    - behaviours at offensive locations that did not well align with either but still ruled out DR(GLS) motivations. For example, engaging in singular or very limited acts of distinctive coercion without further actions to provide context – thus lacking the persistent escalation expected of Revisionists or the slower escalation of Status Quo states.
- *OR*: States repeatedly engaging in the deliberate use of lethal force in defence of their features' TS against poachers, or doing so as one of the most immediate reactions (rather than escalating over time) noting this is amongst the most escalatory forms of defensive distinctive coercion.

- *Insufficiently distinctive (INS)*. Where nations behaved in ways insufficiently distinctive to propose a state-type. This rating was assigned principally in defensive instances. It typically occurred when a country's actions for a year did not meet the minimum requirements listed previously to assess state-type.
- *Irrational State (IRL)*. Weak nations that acted contrary to the dictates of behaviour as described by the theories by threatening and or escalating to distinctive coercion against more powerful nations. This rating provides no information on state-type.
- *Weak States (WK)*. Nations that, in positions of power inferiority, acted and reacted in accordance with the expectations of weak behaviour (i.e., the behaved as DR(GLS) states. This rating provides no information on state-type.

#### **Counting Rules: Presumptions of Rationality in State Behaviour**

States are presumed to act rationally. That is, they seek to maximise benefits (control existing territories and gain new lands) while minimising cost and risk (avoiding loss of their existing holdings or risking aggressive offensive action where they are distinctly militarily inferior).

This has implications when considering indirect (broad area) behaviours at MPA locations. In some instances where states engage in such actions, such as threats of war, then the behaviour may be rational at those locations where they hold power parity or superiority, but irrational where they do not. In such instances, the nation's behaviour is indeed assessed as irrational at those latter locations so as to maintain consistency in the application of process. However, this is treated as an artefact of the assessment method, and no further presumptions of broader irrationality are presumed to apply to the nation.

## **Counting Rules: Notes on Minimising the Extrapolated Application of Data**

As noted initially, to support the most defensible and robust analysis of state behaviour, dataset actions were assessed in the narrowest appropriate manner to minimise the degree of unsupported extrapolation. This is for the geographical remit of an action, the extent of nations it effects, and its presumed degree of coercion or cooperation. Having discussed the ways that behaviours are interpreted, it is now possible to address how the extrapolation-minimisation principle is applied within this framework. In practice, this is mainly done via three key means.

Firstly, by erring on the side of caution when considering the reasonable level of cost or benefit offered by an action. For example, unless some evidence indicated otherwise,<sup>395</sup> a statement by a leader that war may occur in the SCS is interpreted as a communicative statement of concern, rather than as a threat of attack towards some other nation(s). In turn, when paramilitary actions are conducted by military units, these are given paramilitary category ratings rather than more coercive military ones. Also, unless otherwise described in the NDU dataset entry, the nature of any behaviour is considered to be in line with normal lawful conduct. For example, a Chinese military exercise may be noted as occurring near to the Malaysian-occupied Swallow Reef. In such a situation, Chinese forces are considered to have only engaged in lawful innocent passage through the feature's TS (permitted under UNCLOS even when there is a recognised de jure sovereign) unless evidence indicates otherwise. Of note, any occupying state would have reason to highlight illegal (or doubtfully legal) behaviour by foreign powers; hence the absence of such reporting increases confidence that untoward behaviour in fact did not occur.

Secondly, the impact of any action is only applied to the nation(s) and area(s) to which the behaviour can be most directly, conservatively and logically associated;

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<sup>395</sup> Any such evidence and associated analysis would be captured in the AAD entry.

so, effects on any “third party” are generally not considered. For example, in 1996 China and the Philippines declared a general consensus on cooperation regarding the SCS, which is considered under the counting rules to apply to all those states’ disputed MPA features (though this is not overtly stated in the original reporting in the line item). This action is considered distinctive cooperation between the two and thus notionally could be construed as being coercive towards, for example, Vietnamese intentions to claim these same features – as a Manila-Beijing accord should present more of a united front against Hanoi. However, as the cooperative action is not clearly aimed at Vietnam, and its geographic remit inferred rather than specifically stated, this coercive effect (or comparable ones in other situations) is not considered. Similarly, in 2013 Manila commenced a case against China, seeking UN adjudication of certain features it disputed with Beijing. This is treated as coercion only towards China, despite the fact that any UN ruling would also reflect on Vietnam’s claims for those same features.

The exceptions to the third-party rule are those where certain behaviours logically generate multiple category ratings that affect specific third parties. These include instances where single actions produce category ratings that are concurrently cooperative and coercive towards specific states (due to both aligning and being opposed to their expressed preferences), and where nations’ cooperation at a site (defensively or offensively) logically generates a coercive affect on others. These matters are discussed under the relevant headings above.

Thirdly, sensitisation was conducted to consider any exceptional or situation-specific circumstances that could affect how actions were rated in terms of their cooperative or coercive impact. This included alternative explanations for why states behaved in certain ways, or clear evidence that some actions were overtly deceitful. When such instances occurred the sensitised result was the one used when determining state-type, with the associated justifications recorded in the AAD to allow for future review and revision. In summary sensitisation occurred four times, affecting 11 assessments, with the following impacts:



- In 1995, Manila rejected Beijing's proposal for joint projects in the Spratly's during the middle of the Mischief Reef crisis, where China had occupied territory claimed by the Philippines. Under the counting rules, China's proposal cooperative proposal is considered to apply to Thitu, and Manila's rejection would be classed as escalating coercion – an OR behaviour. However, this rejection mid-crisis is considered to be typical for any state-type, as it would in effect be rewarding China for its aggression. Hence no information is considered to be provided by this action.
  - This decision, if not taken, would have added one DR(GS) assessment to the Philippine's tally. Instead, Manila's behaviour is coded as DR(GLS).
  
- In 2001 Beijing rejected Taiwan's involvement with the China-ASEAN CoC. This can be interpreted as coercive towards Taiwan, to prevent involvement in conflict moderation mechanism, with this being part of Beijing's deliberate SCS strategy to gain control of Taipei's MPA possessions. However, it can also just as reasonably be interpreted as an effort by China to prevent any formalisation of Taipei's involvement in the CoC as a separate nation (noting Beijing considers Taiwan a renegade province). Due to this alternate explanation, the action is not treated as part of a coercive SCS strategy towards Taipei; instead it is a communicative action reflecting an existing Chinese policy.
  - This decision, if not taken, would have added five more sets of OR behaviour to China's tally. Instead, Beijing's behaviour is coded as INS.
  
- In 2011 Taiwan rejected the potential for cross-state cooperation mooted by Beijing, which can be explained by a desire for any state-type to not engage with a nation that formally denies its existence and has posed a persistent threat. Hence this response provides no information.
  - This decision, if not taken, would have added two more instances of OR behaviour to Taiwan's tally. Instead, Taipei's behaviour is coded as INS.

- In 2015, China repeatedly denied that the major facilities being constructed at Woody Island, and Fiery Cross, Mischief, and Subi Reefs would be militarised. This notionally should be classed as a cooperative behaviour towards those locations. However, not only did other statements from Beijing indicate the facilities would support military activities, but their nature themselves rendered them most likely to support military activity, as they included hardened bunkers for aircraft and airstrips of a range suitable for supporting bomber aircraft. Hence, Chinese claims the facilities would not be militarised are treated as deceitful and having only a communicative impact.
  - This decision, if not taken, would have reduced three sets of OR behaviour to China’s tally, and instead classed them as DR(GS).

Further to the above, the effects of the decisions are considered to minor. Both in terms of their impact on nations’ individual state-type assessments and overall. So, as discussed in TAD Section III in more detail, 498 useful analyses were generated (i.e., ratings that were not WK, INS, or IRL). The 11 assessments for barely 2% of this total. And they form the greatest percentage of China’s useful assessments (eight of 200) with this representing only 4% of this total – without even considering that the 2001 sensitisation would have added five more results to this total.

### **Counting Rules: Artefacts of Process**

Finally, in some instances, the consistent application of the above rules produces outcomes (“artefacts of the process”) that may appear dubious, or that could be more cogently explained or made more reasonable by applying different reasoning or “bending the rules”. For example, China’s behaviour during 1998–2003 at the Taiwan-controlled Pratas Island is judged irrational as during this period Beijing declares fishing bans over a very wide area that happen to also encompass the island. And as China is militarily weak at Pratas until 2004, if Beijing had sought to affect there such a ban before reaching power parity it would face likely decisive defeat – hence the assessment of the behaviour as irrational.

Of course, an alternative explanation is simply that Beijing had no intention of seeking to implement the ban around Pratas, and instead would only enforce it at those locations where it held power parity or superiority. This rationale can be implemented in the AAD by excising consideration of the ban at Pratas, allowing the Beijing's remaining behaviours at the island still be considered in terms of scope and direction. The same approach could also be applied for other dates, locations, and states.

However, this approach is not used in the AAD. This is based on the author's consideration that the process developed is robust enough that it can, and should, be applied consistently. Hence, beyond the various considerations such as sensitisation already listed, there is no attempt to create (debateable) exceptions based on the analysts' judgement – an outcome that would undermine the very intent of developing a consistently applicable framework. Further, instances of states' behaviour being judged as irrational merely serve to subtract that occasion (in terms of a specific location and year) from consideration, hence not weighing the scales in terms of one theory or another.

## **Section II: The Actions and Assessments Database**

The conceptual process described above is applied, and the results recorded, in the AAD. This is comprised of six Excel workbooks (one for each claimant state), each centred around 22 spreadsheet tabs. These are comprised of one summary sheet (which records totals and captures basic analysis) and 21 annual assessment sheets to cover every year under investigation (1995–2015). These latter sheets containing all the information on the nations' relevant MPA locations, and annual actions and reactions regarding competing claimants and respective balances of power. In total the AAD comprises some 293,500 cells of information across the workbooks.

For each year and location, the five-step process described in Section I was conducted, principally in the annual assessment sheets and with the result recorded in the summary. So, in Classification and Assignment (Steps One and Two) all the

state's applicable actions from the NDU database were copied across in chronological order and assigned ("stacked") to the geographic feature to form a holistic list. Then, in Categorisation (Step Three) behaviours were assigned a category from the strategy framework in Chapter Three. Then in state-Type Assessment (Step Four) a qualitative pattern-matching assessment was done to identify a proposed state-type. This was based on considering relevant stacks against the scope and direction frameworks in Chapter Three, as affected by the nation's position in the balance of power and the various factors described in Section I of the TAD. Finally, in Sensitisation and Recording (Step Five) the outcome was recorded (e.g., OR(BOP)) along with a description and justification for the rating, with this forming the formal assessment that was later used to also inform quantitative analysis. This result was copied over to the summary sheet also. The operation of this process in the AAD is now described in more detail below, together with each workbook's overall structure.

### **Description and Use of the Database**

#### **Summary Sheet**

In more detail, each state's AAD workbook is comprised firstly of an integrated assessments summary sheet. This summarised the state-type results contained in the annual summary sheets and conducted basic analysis at the national level.

The summary itself contained four main tables that represented the data in various ways, with a focus on differentiating when state-types were identified from offensive vice defensive scenarios and capturing both total tallies of the various state-types and their percentages in terms of a nation's assessments. Regarding the offensive vice defensive split, this representation was selected by the author largely as a matter of interest noting these are the two key scenarios for assessing behaviours. In turn, tallies and percentages of state-type results were necessary to answer the key questions in the aggregated assessments.

In any summary sheet, from top to bottom, the four tables were the:

- *Military Power Summary Table*. This was copied for reference from the MPA, and showed the state's position in the balance of power at each relevant location during 1995–2015.
- *Military Power and State-Type Assessment Summary Table*. This captured the state-type ratings assigned to the nation for each location, balance of power, and competing claimant for each year across 21 years (these particular tables are also provided in TAD Section III). This table follows the format of the Power Summary table but adds 21 more rows, and interleaves annual power assessments in one row, with equivalent state-type assessments in the following row. This table was supported by a simple checksum tally that captured the total number of each assessed state-type; for example, 20 DR(GS), 15 DR, and so on, to ensure later calculations did not introduce errors.
- *Offensive and Defensive Locations Country Summary Table*. This captured the number of useful offensive and defensive assessments achieved for the state at each MPA site towards each other claimant. These were derived from the table above using formulas embedded in the cells; and
- *Overall Summary Table*. This captured the totals of all the types of actions, whether these had occurred at offensive or defensive sites, and the percentages of each state-type as a part of the tally of all or useful actions. These were derived from the table above using formulas embedded in the cells. This particular table is also provided for each nation in the TAD Section III. For such tables, in some instances totals did not add correctly due to rounding.

#### Categories Table

This sheet also had, for reference, a categories table (set to the right of the main four) that captured the numerical codes assigned to each strategy framework category. Also embedded within the cells of this table were the Excel formulas to

allow the summing of the various categories. When this table was applied in the annual sheets, the category summing it enabled was used to generate Excel charts to support pattern assessment to assist in identifying state-types.

Regarding the numbering scheme this provided a total of 144 category ratings. In short, communicative strategies were assigned a rating of zero, escalating and intensifying coercive strategies a rating from 1 to 40 (reflecting the 40 categories available) and cooperative -1 to -32 (reflecting the 32 available). Hence, in total, there were 72 initial category ratings. These were doubled to capture coercive de-escalations (41 to 80) and cooperative de-escalations (-33 to -64).

### Use in Assessments

The various results in the tables, particularly in the Overall Summary Table were used to inform the state-type assessments made in TAD Section III. Further, the various data was aggregated across the various nations to generate the overall assessment totals provided in Chapter Seven.

### **Yearly Assessment Sheets – Classification Groupings and Overall Use**

The majority of the state's workbook was comprised of 21 annual spreadsheet tabs. These contained all the location-relevant actions for the particular year as drawn from the NDU database. Each sheet was organised and used in the following manner (with a condensed example from the Philippines further below in [Table C2](#)).

### General Actions

At the top of each sheet, the identified General Actions taken by the state were listed in descending date order. These are behaviours that implicitly or explicitly affected multiple states and/or MPA locations due to contextual or geographic relevance, without evidently targeting specific nations(s). Contextual examples include Chinese maps using the nine-dash line or general declarations by Beijing of

its desire for peaceful resolutions in the SCS. Geographic examples might include paramilitary transits conducted in multiple nations' features' TS by a single patrol. General actions were identified by a combination of considering the listed target and location in the NDU database, together with the author's judgement based on the article description (i.e., information in the article title and/or summary).

To minimise data extrapolation, the narrower target or location groupings were generally preferred, cross referenced as appropriate. For example, an action by China with a target of "ASEAN" and a location of "the Spratlys" would be taken to apply those locations contested with the ASEAN nations in the Spratlys, rather than, say, also the Paracels. Alternatively, if the article description clearly indicated that the action occurred only at a specific site, then the behaviour would be assigned to that location alone.

For completeness, the general actions section also includes geographic actions with a broad scope such as "in the SCS" where no further localisation was possible. These actions were treated as described previously, with non-mobile behaviours such as oil drilling considered to not relate to state's strategies towards MPA features (hence being rated as a category "0", as with communicative actions) and with mobile behaviours such as exercises being rated as broad declaratory actions.

#### Nation-and-Location Relevant Actions

Beneath this section, the overtly Nation-and-Location relevant actions taken by the state were listed in descending date order. These were all the behaviours that could be identified as part of the state's strategy towards a particular nation for various specific locations; and so were grouped to reflect this context (e.g., all China-Philippines actions, or all China-Vietnam actions). Such behaviours were identified by their contextual or geographic relevance, and so included actions that might apply to many or individual features. The former could include discussions between Vietnam and Malaysia on their territorial disputes. This would apply to all the relevant locations identified in the MPA (Barque Canada Reef, Amboyna Cay

and Swallow Reef). The latter might include a Vietnamese patrol in the Malaysian-controlled Swallow Reef's TS.

The specific MPA sites affected by the action were determined by a combination of preferring the narrower of the target identified in the NDU database (such as "Malaysia") with consideration of any more detailed information available in the location or article description. To use the previous example, a Vietnamese patrol listed in the NDU with Malaysia as the target but Swallow Reef as the location would apply only to the latter. But negotiations between the two nations on their disputed features in "the Spratlys" would apply to all three features.

Of note, where a states' actions overtly and specifically applied to multiple countries, these entries were repeated as needed. So, Beijing's negotiations with Manila and Hanoi would be copied to as nation-relevant entries to the lists for both countries.

#### MPA Location Actions

The majority of each sheet was then comprised of sections for each MPA location. Each firstly captured the state's objective at the particular area such as SD or AA/MEZ, drawing on the MPA. Then, multiple sub-sections were generated as necessary capturing the state's position in the balance of power against the opponent(s) it faced there. So, where the state held offensive objectives, a single sub-section was used, showing its power against the incumbent defender. Where a state had defensive objectives, multiple sub-sections showed the country's defensive power against various claimants. This mirrors the approach used in the MPA.

Then, each sub-section combined and refined the above General and Nation-and-Location relevant actions to generate a cohesive list or stack of applicable behaviours. This was done by copying *all* the relevant General and Nation-and-Location specific entries to the sub-section and then, initially,



categorising certain actions as N/A based on geography and context. For example, in one year's China assessment, Beijing might conduct enforcement actions against Vietnamese fishing boats in the Paracels, with these being captured under Nation-and-Location specific actions towards Vietnam. These would be copied over to every location where Beijing had objectives against Hanoi, but rated as N/A where irrelevant, such as an entry capturing China's strategy to gain the Vietnamese-occupied Spratly Island.

### *Control Enforcing Actions*

Finally, at each location, specific "Control Enforcing Actions" taken by the state at a location it controlled were listed in descending date order. These were actions, such as building infrastructure, that had a common effect on all other nations.

### State-Type Qualitative Assessment in Spreadsheet

Once a total stack of applicable General, Nation-and-Location relevant and Control Enforcing actions had been developed, they were assigned a category rating in preparation for pattern assessment. Then, the total categorised stack was analysed for state-type indicative scope and direction information against the guidance in Chapter Three. Once an assessment had been made, underneath each location-specific stack, a qualitative description of the assessed state-type was provided (with the state-type also copied over to the summary sheet) together with an associated justification. As a guide for the reader, these qualitative descriptions generally encompass three parts in the following series:

1. An introductory sentence describing the overall assessed specific state-type, such as DR(GLS), or an appropriate coarser rating, such as DR or even INS.
2. A second series of sentences describing the basis of the state-type assessment. This captures firstly the states position in the balance of power with respect to the particular nation, and then the actions it took to pursue its objective

(maintaining or gaining control) and how these relate to the expected patterns discussed in Chapter three.

These descriptions include the nation's behaviours in terms of initiations and responses; any notable reactions (or lack thereof) to substantive actions by other states; and any notable lack of action, such as an absence of persistent escalation at a location where the state has offensive objectives. Of note for ratings of INS, this typically reflects defensive situations where states engaged only in the general control-enforcing and indirect cooperative actions common to all state-types. Such occurrences are typically described as a nation engaging in no or insufficient quantities of state-type distinctive actions.

3. A final set of sentences describes, if necessary, any broader actions or considerations that affect the identification of the state-type. For example, where there were no substantive actions for the state to respond to, this is overtly noted for the avoidance of doubt. Also discussed are matters of the analyst's judgement, such as how the targets of certain responses were identified, any sensitisation conducted, or when distinctive actions were not substantive and hence provided no insight into state-type.

### Further Considerations

Of note the above approach, in particular the copying of General and National and Location Relevant actions to MPA sites, and then assessing some as N/A, was undertaken for practical reasons. It provided a straightforward means to capturing diverse actions at each MPA location and towards each claimant state: actions could simply be copied and pasted. While useful, this approach did also generate in some instances very long annual sheets; with for example China's in 2015 containing some 2,600 line items.

Regarding the above, in general the assessments of targets and locations provided by the NDU authors were used to determine which MPA sites and countries an entry applied to. However, in some instances the entries were modified or were applied differently (including being judged inapplicable in general) – generally with the aim of making an action more narrowly relevant. Such outcomes were based on matters including the author’s assessment of an article description, a further investigation of the original article, or some other relevant logical consideration.

Such issues were overtly addressed as considered necessary in the notes or further information section of the relevant line item and in the AAD qualitative description (discussed below). Alternatively, the logic should be apparent from consideration of the line item holistically (for example, reviewing site information in the article description vice the location listed in the NDU dataset).

#### Year Assessment Sheets: Actions’ Representation in Columns

For the various general, location-relevant and control-enforcing entries, each single action is comprised of a row with the following columns (left to right):

- A copy of selected data columns from the NDU database (Date, Title of Article, Article Summary, Actor, Location, Source of Report).
- Category rating: the numerical category (-64 to 80) assigned to the action.
- Justification: describing briefly why the category rating has been assigned.
- Initiation, response or unclear: an assessment of the nature of the action in terms of these categories, based on the NDU database description.

- Further Information column: capturing whether the action had, for example, been classed as initiating a crisis. This also captures assessments of escalation or de-escalation in response to other nations.
  - The Further Information column also is used to identify actions as applying to a particular location and incident, based on the analyst’s judgement, even if their inherent contents would not make such a connection overt. For example, Chinese actions to restrict imports of Philippine produce during the Scarborough Shoal stand-off are identified the Beijing’s strategy towards the feature despite denials by Beijing.
- Notes: any further commentary on the action.
  - In this section the comment “Considered to apply to all areas” indicated the action was assessed to apply to a state’s defensive locations in addition to its offensive MPA sites. Of course, the extent of these sites was affected by the nature of the action. So, such a rating on a Vietnam-Malaysia action indicated those two nations’ sites in common were affected, as opposed to the entirety of all the sites contested by these nations with all others.
  - The notes column would also contain references to “see also” when the action also generated category ratings for third parties. So, a General Action that also affected China separately would note “see also China entry”.
- Graphical data representation: to assist in the state-type assessment, a final section captured the number of actions taken by a state in each category and showed these in chart form. This was only done where large numbers of actions provided value in representing behaviour via a graph. An example of this is shown in [Figure C1](#), below for China in 2015.

### **Variations and Errors**

Finally, while the above provides a generally reliable guide to the treatment of line items (i.e., individual actions) and qualitative analyses, there are variations that exist. For example, for certain countries and MPA sites it was necessary or useful to describe locations and associated actions in more and less detail. Any idiosyncrasies are noted in the reporting in Section III (such as for the Philippines).

Also, more broadly, while every effort was made to ensure consistency and accuracy, various forms of expression (and doubtless certain errors of coding) arose in the development of the workbooks, noting the analysis and application of thousands of line items of data was a process that consumed many months. Further, in some instances additional descriptive terms are used regarding behaviours and events. Despite such issues, the content, application and logical basis of each line item and assessment should be clear to the reader. Any opacity due to the form of expression, or errors or omissions overall, remain the sole responsibility of the author.

**Table C2: Exemplar Abbreviated Annual Sheet for Philippines (1998)**

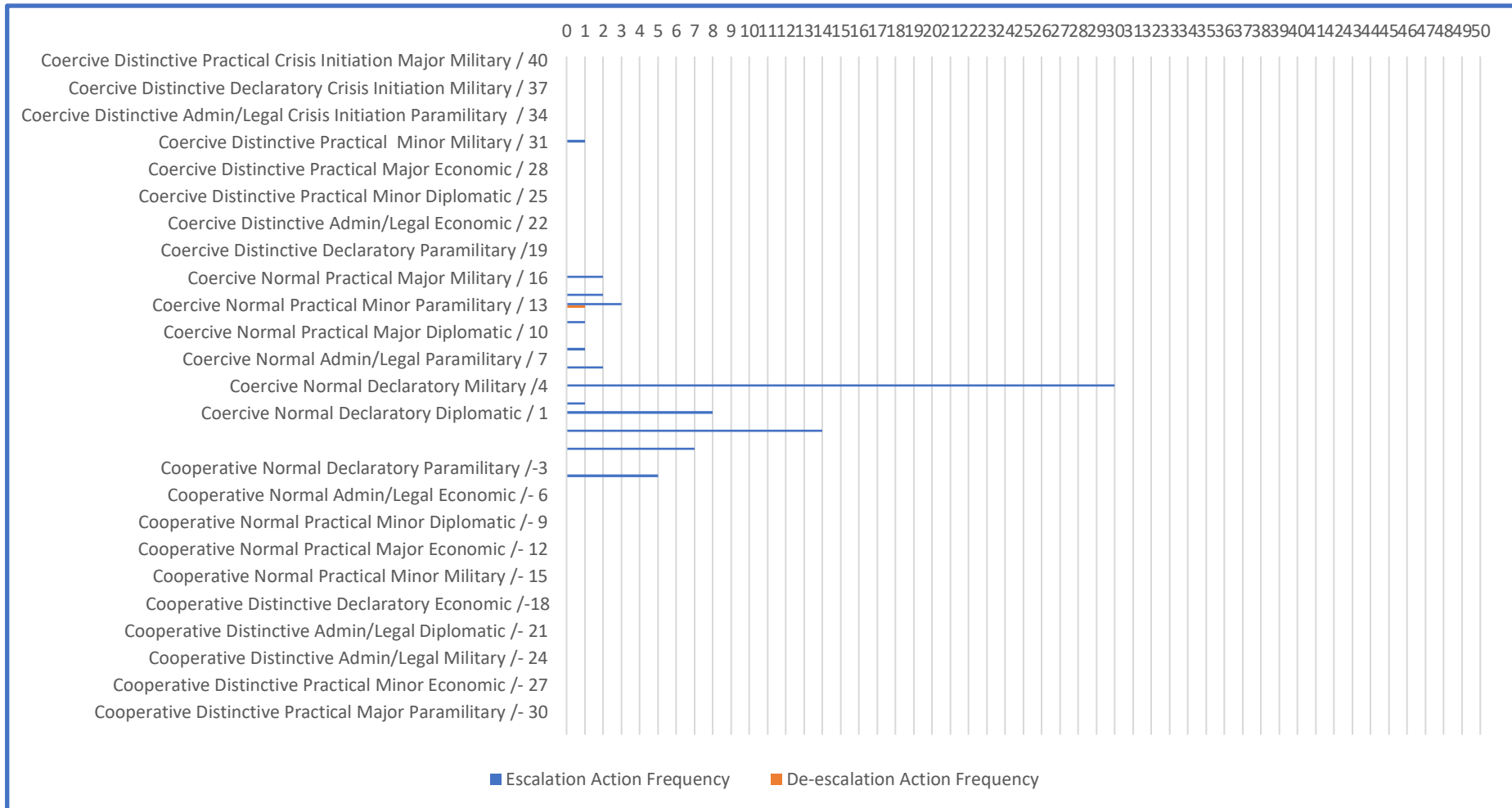
	<u>Date</u>	<u>Title of Article</u>	<u>Summary of Article/ Incident</u>	<u>Actor</u>	<u>Location</u>	<u>Target</u>	<u>Source of Report</u>	<u>Category Code Number</u>	<u>Justification</u>	<u>Initiation Response Unclear</u>	<u>Further Info</u>	<u>Notes</u>
<b>General</b>												
<b>General Actions</b>	23/12/98	PHL MIL TO PUT UP MARKERS	Law to be passed allowing PHL...	PH	Spratly	all	MANILA THE PHILIP' E STAR	5	Coercive normal admin/legal dipl: dom legis	Initiation		
	16/12/98	Hu Jintao Calls for Solution	China has always worked for	CH	South China Sea	ASEAN	Xinhua	0	Communicative: ASEAN meeting	Unclear		
<b>Nation-and-Location Relevant</b>												
<b>Brunei</b>												
<b>China</b>	7/8/98	Spokesman on US-Philippine Exercise in	Commenting on the military exercise	CH	Scarb Shoal	US-PH	Xinhua	16	Coercive normal practical major military: exercises	Initiation		
	7/11/98	PHL Wants US Military Presence	Philippine Defense Secretary	PH	Spratly	US	HK AFP	4	Coercive normal decl military: call for	Response	Likely response to CH delpoy	
<b>Malaysia</b>	16/11/98	Estrada Talks With Mahathir	Estrada Talks With Mahathir	PH-MY	South China Sea	all	GMA-7 Radio-Television	0	Communicative: talks	Unclear		
<b>Taiwan</b>												
<b>Vietnam</b>												

MPA Locations												
Scarborough Shoal - SD vs China; later EMEZ vs China												
Inferior												
General Actions	23/12/98	PHL MIL TO PUT UP MARKERS	Law to be passed allowing PHL...	PH	Spratly	all	MANILA THE PHILIP'E STAR	5	Coercive normal admin/legal dipl: dom legis	Initiation		
	16/12/98	Hu Jintao Calls For Solution	China has always worked for	CH	South China Sea	ASEAN	Xinhua	0	Communicative: ASEAN meeting	Unclear		
China	7/8/98	Spokesman on US-Philippine Exercise in	Commenting on the military exercise	CH	Scarb Shoal	US-PH	Xinhua	16	Coercive normal practical major military: exercises	Initiation		
	7/11/98	PHL Wants US Military Presence	Philippine Defense Secretary	PH	Spratly	US	HK AFP	4	Coercive normal decl military: call for	Response	Likely response to CH deploy	

Assessment: there is insufficient evidence to discern state-type. Noting Manila's military inferiority and defensive objectives, the Philippines engages in low-level general control-enforcing and indirect cooperative actions to maintain control, behaviours open to all state-types. Of note while the Philippines does not respond to Beijing's declaration of a fishing ban that encompasses the waters around the area, this action is only considered indirectly relevant to the Shoal and hence not be an act of substantive coercion – thus Manila's lack of response provides no information. In turn, Beijing provides no substantive actions to respond to.

Note: the above represents an extract of the 1998 data; in fact, while two General Actions occurred, there were 11 China-related Nation-and-Location relevant actions.

**Figure C1: Example Graphical Data Representation for China (2015)**





### **Section III: Reporting of National Results**

This final section of the TAD now reports on state-type assessment outcomes for the six nations under consideration and uses this to propose a predominant state-type for each. This is based, principally, on which theory (such as OR(BOP)) is most represented in their AAD outcomes, with this also informed by conducting a pattern analysis in terms of whether the observed trends in state-types across the 21-years match the broader forecasts predicted in Chapter Three. Also discussed is the confidence in each predominant assessment based on the amount of useful data obtained, noting in many annual instances no useful information was available due to matters such as states' weakness or behaving in insufficiently distinctive ways. Of note the information below is aggregated and reported on in Chapter Seven to answer the research questions.

#### **Key Results**

Across 1,371 assessment opportunities, 498 provided useful information. Based on their totals of assessed state-types, all nations were overwhelmingly identified as some form of DR state, with 90% or more of all states' useful assessments falling within the DR category.

In summary, China is clearly a Status Quo state (70% DR(GS)) and Taiwan is likely one also (57% DR, 32% DR(GS)). These outcomes have high confidence due to the large number of useful results, reducing the impact of outliers. Only the Philippines is likely Peaceful (49% DR(GLS)) with Vietnam and Malaysia only identifiable as broadly DR (85%+ DR). Also, confidence in these latter outcomes is reduced due to the lower number of useful results. But offsetting this is each state's high DR percentage – so even multiple outliers would have minimal affect. No information useful assessment could be made for Brunei due to the nations' weakness. Also, in terms of pattern analyses, all patterns matched the forecasts for DR behaviour.

## Data Presentation

Selected information is provided for each nation under consideration, presented in four parts using the following headings in each entry:

- *Quantitative Summary and Selected Qualitative Description.* An overview of the totals and percentages of each nations' useful assessments that aligned with the various theories' predictions. This includes a discussion of how many assessments supported a more precise identification of a DR(GLS), DR(GS)BOP, DR(GS)PTT, OR(BOP) or OR(PTT) state, or some coarser appreciation.

This quantitative analysis defines, of course, an initial view of each nation's predominant state-type, and to what degree. For each country this is supported by a brief discussion of the situations and types of qualitative behaviours that generated the results, together with selected events judged by the author to be of interest. This review is separated into offensive and defensive locations, as these form the two main scenarios for assessment.

- *Comparison to Trends.* A discussion of if trends in assessed state-types across years aligned with theory predictions, principally considering the consistency of state-type results against balances of power. This reflects Revisionists are expected to display differing behaviours depending on their position in this balance, in particular favouring militarisation when at an opportune moment for victory, vice DR states that are expected to display consistency.
- *Overall Assessment.* An overall state-type assessment based on data from the first two parts, including a discussion of any considerations affecting the confidence in the result.
- *Tabulated Data.* An excerpt of selected tabulated data copied from the AAD. The tables in this part are also referred to, and used to inform the discussion in, the first three parts of the relevant nation's summary.

## Brunei

### **Quantitative Summary and Selected Qualitative Description**

Unfortunately, no quantitative assessment can be made of Brunei's motivations as, out of 105 annual assessments conducted regarding its sole MPA-site at Louisa Reef, none provided insight into state-type. This reflects 68 assessments (65% of the total) that provided no useful information due to being insufficiently distinctive and 31 (30%) occurring at places and times where Brunei was weak in the balance of power. Finally, the remaining six assessments (6%) occurred where there was no longer a dispute with Malaysia over Louisa Reef. Hence any actions by Brunei towards Malaysia are doubtfully relevant to any strategy to secure the area, and so provide no basis to assess state-type.

All data referred to above is also available in [Table C3](#). Further to this high-level summary, the following descriptions provide an overview of the situations and behaviours that generated the various totals of state-type assessments.

### Offensive Objective

Brunei had only a single offensive objective in the MPA: Louisa Reef. Over 21 years, this provides 21 opportunities for assessment. Of note the Reef was uncontrolled by any party but a move by Brunei to capture the site would potentially be contested by the other claimants: China, Malaysia, Taiwan and Vietnam.

Of the 21 assessments, none provided any information as Brunei was offensively weak in each instance. Hence Bandar Sari Begawan's behaviour, which reflected the cooperative actions (or total abstinence of action) expected of a DR(GLS) nation, or a weak one, provided no insight into state-type.

## Defensive Objective

Brunei also had only a single defensive objective in the MPA: Louisa Reef, which it needs to protect from China, Malaysia, Taiwan and Vietnam. Over 21 years, this provides 84 opportunities for assessment.

Of these, no information was available from 10 due to Brunei displaying cooperative behaviours in response to other nations when it was weak. Another 68 were insufficiently distinctive due to a lack of notable self-initiated activities by Brunei, or responses to other states, or other nations engaging in no substantive actions towards these sites. Finally, in 2009, Brunei and Malaysia effectively resolved their dispute over Louisa Reef in Brunei's favour. Hence the next six years of Brunei's behaviour towards Malaysia provide no insight into its strategy to secure the area against Kuala Lumpur, and so provide no evidence of state-type.

## **Comparison to Trends**

Brunei's behaviour well aligns with the prediction in Chapter Three for DR(GLS) states: that their behaviour should be little influenced by the military balance of power, and that they should consistently seek to build cooperation and constrain the escalation of coercion.

Of course, since Brunei is a weak state in 88 out of 105 assessed instances, little weight can be placed on such peaceable behaviours as an indicator of motivation. And in the remaining 17 situations, as noted above Bandar Sari Begawan never responded to Vietnam nor was it faced with substantive behaviour from Hanoi that might otherwise provide insight into state-type.

## **Overall Assessment**

Based on the above, no conclusions can be drawn on Brunei's state-type.

## Tabulated Data

Below, Table C3 summarises the assessment outcomes, and is a copy of the Overall Summary Table from the summary sheet in the Brunei AAD. It shows the total number of assessments; the number of each kind of result, such as DR(GS) or OR; the percentage of each result in terms of the overall number of assessments, and the number of each result that occurs at Brunei's offensive or defensive objectives.

In turn Table C4 shows all the state-type assessment outcomes across the 21 years and where they occurred, and is a copy of the Military Power and state-Type Assessment Summary Table from the summary sheet in the Brunei AAD. This table follows the format of the Power Assessment Table from Chapter Six, and interleaves annual power assessments in one row, with equivalent state-type assessments in the following row. To highlight where different assessment results occurred, this table is colour-coded with both power-rating colour and state-type tones.

Of note, for both tables only those state-types that actually arose in the analysis are shown. So, if no OR results came about, no space is reserved for such outcomes.

Table C3: Brunei Overall Summary Table

Aggregated Data				
Assessment Code	Tally of Assessed Outcomes	% type	Results at Offensive and Defensive Sites	
	N = 105	N = 105	OFF	DEF
WK	31	30	21	10
INS	68	65	0	68
N/A-WK	6	6	0	6
<b>Total</b>	<b>105</b>	<b>101</b>	<b>21</b>	<b>84</b>

*Notes: Weak: WK, Insufficient Information: INS, Not Applicable: N/A. state-type codes are colour coded for consistency and ease of review in subsequent tables. Some totals may not add correctly due to rounding. Offensive and Defensive Sites reflect Bruneian objectives regarding locations.*

Table C4: Brunei Military Power and State-Type Summary Table

	Geographic Feature and Type				
	Louisa Reef (Sec-B)				
Claimed	BRN, MLY, CHN, TWN, VNM				
Controlled	N/A				
Distance from Bases	250 km				
Brunei Operational Need	EMEZ	SD EMEZ - MLY	SD EMEZ - CHN	SD EMEZ - TWN	SD EMEZ - VNM
1995					RP
1995	WK	INS	INS	INS	INS
1996					RP
1996	WK	INS	INS	INS	INS
1997					RP
1997	WK	INS	INS	INS	INS
1998					RP
1998	WK	INS	INS	INS	INS
1999					RP
1999	WK	INS	INS	INS	INS
2000					RP

2000	WK	INS	INS	INS	INS
2001	I	I	I	I	RP
2001	WK	INS	INS	INS	INS
2002	I	I	I	I	RP
2002	WK	INS	INS	INS	INS
2003	I	I	I	I	RP
2003	WK	WK	INS	INS	INS
2004	I	I	I	I	DP
2004	WK	INS	INS	INS	INS
2005	I	I	I	I	DP
2005	WK	INS	INS	INS	INS
2006	I	I	I	I	DP
2006	WK	INS	INS	INS	INS
2007	I	I	I	I	DP
2007	WK	INS	INS	INS	INS
2008	I	I	I	I	DP
2008	WK	INS	INS	INS	INS
2009	I	I	I	I	DP
2009	WK	WK	INS	INS	INS
2010	I	I	I	I	DP
2010	WK	N/A-WK	INS	INS	INS
2011	I	I	I	I	DP



2011	WK	N/A-WK	INS	INS	INS
2012					
2012	WK	N/A-WK	WK	INS	WK
2013					
2013	WK	N/A-WK	WK	INS	WK
2014					
2014	WK	N/A-WK	WK	INS	WK
2015					
2015	WK	N/A-WK	WK	INS	WK

*Notes: Each pair of annual row shows Bruneian power ratings at MPA sites for that year followed by a state-type assessment at each location. Unless otherwise noted all data and terms are as per Power Assessment Tables in Chapter Six. State-type assessment coding: Offensive Realism: OR, Defensive Realism: DR, Power Transition Theory: PTT, Balance of Power Theory: BOP, Gains Sensitive: GS, Gains Less-Sensitive: GLS, Irrational: IRL, Weak: WK, Insufficient Information: INS. Relevant state-type colour codes:*

WK	INS	N/A-WK
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## China

### **Quantitative Summary and Selected Qualitative Description**

The quantitative data on China's behaviour is clear: Beijing overwhelmingly behaves as a DR state. Further, it is almost certainly a DR(GS) nation in particular – with up to 89% of its annual assessments aligning with behaviours predicted by this theory.

In more detail, out of 402 annual state-type assessments conducted, 202 were assessed to provide no useful information for reasons discussed below. Of the remaining 200 useful assessments, two (1%) were judged to indicate DR(GS)BOP behaviour and 137 (69%) as DR(GS) behaviour more broadly. This provides an initial total of 70% of the annual assessments showing solidly DR(GS) activity – a clear majority in terms of Beijing's behaviour.

In addition, China's overall DR(GS) nature is further supported by 32 assessments (16%) showing general DR-type activity (so, supporting either DR(GS) or DR(GLS)); and six (3%) supported DR(GS)/OR in some form – again supporting either. This provides the total of up to 89% aligned with Status Quo expectations. In contrast other behaviours are relatively trivial, with 19 (10%) reflecting DR(GLS) and four (2%) reflecting OR.

All data referred to above is also available in [Table C5](#). Further to this high-level summary, the following descriptions provide an overview of the situations and behaviours that generated the various totals of state-type assessments.

### Offensive Objectives

China has offensive objectives at seven locations<sup>396</sup> – Pratas Island, Scarborough Shoal, Thitu, Itu Aba and Spratly Islands, and Swallow and Louisa Reefs. Over 21

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<sup>396</sup> Six, after seizing Scarborough Shoal in 2012. For counting purposes, China's objective at the Shoal is considered offensive up to an including 2012.

years, this provides 144 opportunities for assessment. Of these, no information was gained from 36 assessments of cooperative (i.e., DR(GLS)) behaviour due to them occurring where and when China was weak. A further seven provide no information due to them involving aggressive (i.e., irrational) behaviour where China was weak.

Of the remaining 101, China displayed a range of behaviours that, overwhelmingly, supported Status Quo assessments. So, 90 of the 101, essentially 90% of all offensive appraisals, showed DR(GS) motivations. These mainly reflect Beijing engaging in either low-level coercive, or low level coercive and cooperative measures, seeking to gain control, with some exceptions where Beijing initiates distinctive coercion but balances this by a larger span of normal behaviours, making a DR(GS) analysis most compelling.

In turn the remaining 11 analyses have a marginal impact. But worthy of discussion due to its distinctiveness is the single offensive DR(GS)BOP assessment: China's seizure of Scarborough Shoal in 2012. There, Beijing engaged in a land-grab but also a range of de-escalatory behaviours, including reducing its forces and offering gestures of cooperation. This pattern supports a DR(GS) assessment, in contrast to the persistent escalation expected from an OR state. Also, conducting the conquest at a time of power superiority indicates a BOP appreciation of the impact of military power.

### Defensive Objectives

China has defensive objectives at five<sup>397</sup> locations – Woody Island, Macclesfield Bank, and Subi, Fiery Cross, and Mischief Reefs, with these each contested by one or more states in the form of Malaysia, the Philippines, Taiwan, and Vietnam. Over 21 years, this provides 259 opportunities for assessment. Of these, 159 provide no information due to China's behaviour being insufficiently distinctive due to a lack of

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<sup>397</sup> Six, after seizing Scarborough Shoal in 2012. For counting purposes, China's objective at the Shoal is considered defensive from 2013.

notable self-initiated activities, or responses to other states, or other nations engaging in no substantive actions towards these sites.

The of the remaining 100 assessments, 47 are DR(GS) outcomes, with these reflecting mixtures of the behaviours that can generate such results. These include Beijing concurrently engaging in distinctive coercion and cooperation (such as towards Manila at Mischief Reef in 1996), or responding with both more and less cooperative actions to Vietnam at Woody Island in 2014. And in some assessments mixtures of all these patterns and more were visible.<sup>398</sup>

In turn, the 17 DR(GLS) assessments reflect behaviours such as agreements for major economic cooperation with Manila, or Beijing responding with reduced coercion to Hanoi's plans for tourist trips to the Spratlys. Also, 25 show DR behaviour based on Beijing engaging in repeated instances of low-level cooperation considered to apply to Woody Island and the three Reefs.

The remaining 11 assessments have a marginal impact but are discussed because of their unusual nature. The five DR(GS)/OR and four OR results reflect where China engaged in distinctive coercion but did not, towards some states, conduct cooperative gestures that might offset such actions. For example, China's island building at the three Reefs in 2014–2015 was not matched by any credible cooperation towards Taipei. So, for Taiwan, these actions are rated as OR, whereas for nations that did receive reassurance from Beijing they are assessed as DR(GS).

Finally, the sole DR(GS)BOP result reflects China's behaviour towards Manila at Mischief Reef in 1995, which China seized late in 1994 or early 1995. There, Beijing clearly engaged in distinctive coercion to capture the site but then moderated this with de-escalatory and conciliatory acts that are DR(GS) typical. And conducting the land-grab during power superiority again indicates a BOP view of military power.

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<sup>398</sup> For both offensive and defensive sites.

## **Comparison to Trends**

Beijing's behaviour well aligns with the prediction in Chapter Three: that a DR(GS) state's behaviour should be little influenced by the military balance of power, with Status Quo nations acting as they see fit based on what they believe will succeed at a time and place. And indeed, China's behaviour was little affected by changes in the balance. Beijing consistently used a strong concurrent mix of coercive and cooperative behaviours regardless of where it stood militarily compared to other states. Further, 66% of China's defensive DR(GS) assessments, driven by more combative responses to behaviours by other nations, and engaging in self-initiated distinctive coercion by island-building, occurred from 2012 onwards. During these instances Beijing was at power superiority to all other claimants. This behaviour aligns with that expected of a DR(GS) state that has determined, for non-balance of power reasons, to shift its more cooperative approach to a more coercive one. And likewise, on the odd non-self-initiated occasions when China did act differently, such as engaging in DR(GLS) activities towards Vietnam and the Philippines, or seizing Mischief Reef or Scarborough Shoal, these actions were not coincident to any change in the balance of power.

## **Overall Assessment**

In overview, China clearly behaves as a DR(GS) state using a concurrent strongly mixed strategy. In more detail, Beijing does not engage in scope-distinctive activities (such as a major war of conquest, or joint demilitarisation) that would indicate it was either an OR or DR(GLS) state. And in terms of its direction, China repeatedly engages in mixtures of mainly low-level coercive and cooperative behaviours, while tending to respond to other nations with matched coercion or cooperation, or a mixed pattern of fluctuating normal responses. All these are highly typical DR(GS) behaviours and are conducted at both offensive and defensive sites. And even in the two instances where China conducts a land-grab, Beijing's behaviour during and afterwards includes cooperative actions that do not reflect the persistent coercion expected of an OR state.

Further, China engaged in far more frequent DR(GS) defensive behaviour from 2012 onwards, including by island building and more coercive responses to other nations. Such behaviours are not only DR(GS) indicative, but also align with what would be expected of an overall Opportunistic state investigating a more coercive approach.

Regarding land-grabs, as perhaps the most alarming of Beijing's actions, it is worthwhile to recall that such behaviour hardly rules out China as a DR(GS) state. Indeed, Beijing's mode of conquest fits in well with the prediction provided in Chapter Three: that a Status Quo nation may on rare occasions attempt conquests small in geographic extent. This is precisely the activity shown by Beijing at Mischief Reef and Scarborough Shoal. And when faced with the opportunity for more substantive conquest, such as against Vietnam at Spratly Island, no attempt at capture occurred – even though China held power parity there from 2004 and superiority from 2011, and Hanoi had no alliances to call on for its aid.

Overall then, China is assessed as being an “opportunistically expanding” Status Quo state, and this is assessed with high confidence noting the large amount of useful assessments generated. Of note, while this does mean Beijing still poses a threat to its neighbours, it does not support some of the more dramatic analyses of China's behaviours that describe it as being a committed Revisionist. Finally, China does appear to act as BOP power. However, with only three instances to draw on from 200 assessments this can only be assessed with very low confidence.

### **Tabulated Data**

Below, [Table C5](#) summarises the assessment outcomes, and is a copy of the Overall Summary Table from the summary sheet in the China AAD. It shows the total number of assessments; the number of each kind of result, such as DR(GS) or OR; the percentage of each result in terms of the overall number of assessments, and the number of each result that occurs at offensive or defensive objectives.

In turn Table C6 shows all the state-type assessment outcomes across the 21 years and where they occurred, and is a copy of the Military Power and state-Type Assessment Summary Table from the summary sheet in the China AAD. This table follows the format of the Power Assessment Table from Chapter Six, and interleaves annual power assessments in one row, with equivalent state-type assessments in the following row. To highlight where different assessment results occurred, this table is colour-coded with both power-rating colour and state-type tones.

Of note, for both tables only those state-types that actually arose in the analysis are shown. So, if no OR results came about, no space is reserved for such outcomes.

Table C5: China Overall Summary Table

Aggregated Data				
Assessment Code	Tally of Assessed Outcomes	Results as % of Total*	Results at Offensive and Defensive Sites	
	N = 403	N = 202–200	OFF	DEF
IRL	7	3	7	0
WK	36	18	36	0
INS	159	79	0	159
<b>Subtotal</b>	<b>202</b>	<b>100</b>	<b>43</b>	<b>159</b>
DR(GLS)	19	10	2	17
DR	32	16	7	25
DR(GS)	137	69	90	47
DR(GS)BOP	2	1	1	1
DR(GS)/OR	5	3	0	5
(DR(GS)/OR) BOP	1	1	1	0
OR	4	2	0	4
<b>Subtotal</b>	<b>200</b>	<b>102</b>	<b>101</b>	<b>99</b>
<b>Total</b>	<b>402</b>	<b>N/A</b>	<b>144</b>	<b>258</b>

Notes: Offensive Realism: OR, Defensive Realism: DR, Power Transition Theory: PTT, Balance of Power Theory: BOP, Gains Sensitive: GS, Gains Less-Sensitive: GLS, Irrational: IRL, Weak: WK, Insufficient Information: INS. State-type codes are colour coded for consistency and ease of review in subsequent tables. Some totals may not add correctly due to rounding. Offensive and Defensive Sites reflect Chinese objectives regarding locations. \*Codes that provided no information (IRL, WK, INS) are expressed as a percentage of the total assessments that provided no information (N = 202), and vice versa (N = 200).



**Table C6: China Military Power and State-Type Summary Table**

	Geographic Feature and Type																			
	Woody Island (CoG)	Pratas Island (CoG)	M'field Bank (Sec B)	Scarborough Shoal (Sec B)	Subi Reef (Sec B to 2014; Sec A in 2015)			Thitu Island (CoG)	Itu Aba Island (CoG)	Fiery Cross Reef (Sec B to 2014; Sec A in 2015)			Mischief Reef (Sec B to 2014; Sec A in 2015)			Spratly Island (CoG)	Swallow Reef (CoG)	Louisa Reef (Sec B)		
Claimed	CHN, TWN, VNM	CHN, TWN	CHN, TWN	CHN, PHL, TWN	CHN, PHL, TWN, VNM			CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM			CHN, PHL, TWN, VNM			CHN, TWN, VNM	CHN, MLY, TWN, VNM	BRN, CHN, MLY, TWN, VNM		
Controlled	CHN	TWN	CHN	CHN	CHN			PHL	TWN	CHN			CHN			VNM	MLY	N/A		
Distance from Bases	310	660	550	900	950			950	1000	1050			1100			1100	1300	1400		
Chinese Operational Need	SD - TWN	SD - VNM	AA/ MEZ	SD EMEZ	EMEZ / SD EMEZ - PHL	SD EMEZ TWN	SD EMEZ / SD - PHL	SD EMEZ / SD - TWN	SD EMEZ / SD - VNM	AA/ MEZ - USN	AA/ MEZ	SD EMEZ / SD - PHL	SD EMEZ / SD - TWN	SD EMEZ / SD - VNM	SD EMEZ / SD - PHL	SD EMEZ / SD - TWN	SD EMEZ / SD - VNM	AA/ MEZ	AA/ MEZ	EMEZ
1995	DP	S	I	I	S	N/A	S	RP	S	I	I	S	RP	S	S	RP	S	I	I	S
1995	INS	INS	WK	INS	DR	N/A	INS	INS	INS	IRL	WK	INS	INS	INS	DR (GS) BOP	INS	INS	WK	WK	DR
1996	DP	S	I	I	S	N/A	S	RP	S	I	I	S	RP	S	S	RP	S	I	I	S
1996	INS	INS	WK	INS	DR (GLS)	N/A	DR (GLS)	INS	INS	WK	WK	DR (GLS)	INS	INS	DR (GS)	DR(GS) /OR	DR(GS) /OR	WK	WK	DR
1997	DP	S	I	I	S	N/A	S	RP	S	I	I	S	RP	S	S	RP	S	I	I	S

1997	INS	INS	WK	INS	DR (GLS)	N/A	INS	INS	INS	WK	WK	INS	INS	INS	DR (GS)	INS	INS	WK	WK	DR
1998	DP	S	I	I	S	N/A	S	RP	S	I	I	S	RP	S	S	RP	S	I	I	S
1998	INS	INS	IRL	INS	DR (GS)	N/A	DR (GS)	INS	INS	WK	WK	DR (GS)	INS	INS	DR (GS)	INS	INS	WK	WK	DR
1999	DP	S	I	I	S	N/A	S	RP	S	I	I	S	RP	S	S	RP	S	I	I	S
1999	INS	DR (GS)	IRL	INS	DR (GS)	N/A	DR (GS)	INS	DR (GS)	WK	WK	DR (GS)	INS	DR (GS)	DR (GS)	INS	DR (GS)	WK	WK	DR (GS)
2000	DP	S	I	DP	S	N/A	S	AP	S	I	RP	S	AP	S	S	AP	S	I	I	S
2000	INS	DR	IRL	INS	DR (GS)	N/A	DR	INS	DR	WK	DR (GS)	DR	INS	DR	DR	INS	DR	WK	WK	DR (GS)
2001	DP	S	I	DP	S	N/A	S	AP	S	I	RP	S	AP	S	S	AP	S	I	I	S
2001	INS	INS	IRL	INS	DR(GS) /OR (BOP)	N/A	INS	INS	DR (GLS)	WK	DR (GS)	INS	INS	DR (GLS)	INS	INS	DR (GLS)	WK	WK	DR
2002	DP	S	I	DP	S	N/A	S	AP	S	I	RP	S	AP	S	S	AP	S	I	I	S
2002	INS	INS	IRL	INS	DR (GS)	N/A	INS	INS	INS	WK	DR	INS	INS	INS	INS	INS	INS	WK	WK	DR (GS)
2003	DP	S	I	DP	S	N/A	S	AP	S	I	RP	S	AP	S	S	AP	S	I	I	S
2003	INS	INS	IRL	INS	DR (GS)	N/A	DR (GLS)	INS	INS	WK	DR (GS)	INS	INS	INS	DR (GLS)	INS	INS	WK	WK	DR (GS)
2004	DP	S	DP	RP	S	N/A	S	AP	S	I	RP	S	AP	S	S	AP	S	DP	RP	S
2004	INS	INS	DR (GS)	INS	DR (GS)	N/A	INS	INS	DR (GLS)	WK	DR (GS)	INS	INS	DR (GLS)	INS	INS	DR (GLS)	DR (GS)	DR (GS)	DR (GS)
2005	RP	S	DP	RP	S	N/A	S	AP	S	I	AP	S	AP	S	S	AP	S	DP	RP	S
2005	INS	INS	DR (GS)	INS	DR (GS)	N/A	DR (GLS)	INS	DR (GLS)	WK	DR (GS)	INS	INS	INS	DR (GLS)	INS	DR (GLS)	DR (GS)	DR (GS)	DR (GS)

2006	RP	S	DP	RP	S	N/A	S	RP	S	DP	AP	S	RP	S	S	RP	S	RP	AP	S
2006	INS	INS	DR (GS)	INS	DR (GS)	N/A	DR	INS	INS	DR (GS)	DR (GS)	DR	INS	INS	DR	INS	INS	DR (GS)	DR (GS)	DR (GS)
2007	RP	S	DP	RP	S	N/A	S	RP	S	DP	AP	S	RP	S	S	RP	S	RP	AP	S
2007	INS	INS	DR (GS)	INS	DR (GS)	N/A	INS	INS	INS	DR (GS)	DR (GS)	INS	INS	INS	INS	INS	INS	DR (GS)	DR (GS)	DR (GS)
2008	RP	S	DP	AP	S	N/A	S	AP	S	RP	AP	S	AP	S	S	AP	S	RP	AP	S
2008	INS	DR	DR (GS)	INS	DR (GS)	N/A	INS	INS	DR	DR (GS)	DR (GS)	INS	INS	DR	INS	INS	DR	DR (GS)	DR (GS)	DR (GS)
2009	RP	S	DP	AP	S	N/A	S	AP	S	RP	AP	S	AP	S	S	AP	S	RP	AP	S
2009	INS	DR (GS)	DR (GS)	INS	DR (GS)	N/A	DR (GS)	INS	INS	DR (GS)	DR (GS)	DR (GS)	INS	INS	DR (GS)	INS	INS	DR (GS)	DR (GS)	DR (GS)
2010	RP	S	DP	AP	S	N/A	S	AP	S	RP	AP	S	AP	S	S	AP	S	AP	S	S
2010	INS	DR	DR (GS)	INS	DR (GS)	N/A	DR	INS	DR	DR (GS)	DR (GS)	DR	INS	DR	DR	INS	DR	DR (GS)	DR (GS)	DR (GS)
2011	RP	S	DP	AP	S	N/A	S	AP	S	RP	AP	S	AP	S	S	AP	S	AP	S	S
2011	INS	DR	DR (GS)	INS	DR (GS)	N/A	DR (GS)	INS	DR	DR (GS)	DR (GS)	DR (GS)	INS	DR	DR (GS)	INS	DR	DR (GS)	DR (GS)	DR (GS)
2012	RP	S	RP	AP	S	N/A	S	AP	S	RP	AP	S	AP	S	S	AP	S	S	S	S
2012	INS	DR (GS)	DR (GS)	INS	DR (GS) BOP	N/A	DR (GS)	INS	DR (GS)	DR (GS)	DR (GS)	DR (GS)	INS	DR (GS)	DR (GS)	INS	DR (GS)	DR (GS)	DR (GS)	DR (GS)
2013	AP	S	RP	S	S	S	S	S	S	RP	AP	S	S	S	S	S	S	S	S	S
2013	INS	DR (GS)	DR (GS)	INS	DR (GS)	DR (GS) /OR	DR (GS)	INS	DR (GLS)	DR (GS)	DR (GS)	DR (GS)	INS	DR (GLS)	DR (GS)	INS	DR (GLS)	DR (GS)	DR (GS)	DR (GS)

2014	AP	S	RP	S	S	S	S	S	S	RP	AP	S	S	S	S	S	S	S	S	S
2014	DR (GS) /OR	DR (GS)	DR (GS)	INS	DR (GS)	INS	DR (GS)	INS	DR (GS)	DR (GS)	DR (GS)	DR (GS)	DR (GS)	DR (GS)	DR (GS)	INS	DR (GS)	DR (GS)	DR (GS)	DR (GS)
2015	AP	S	RP	S	S	S	S	AP	S	RP	AP	S	AP	S	S	AP	S	S	S	S
2015	OR	DR (GS)	DR (GS)	INS	DR (GS)	INS	DR (GS)	OR	DR (GS)	DR (GS)	DR (GS)	DR (GS)	OR	DR (GS)	DR (GS)	OR	DR (GS)	DR (GS)	DR (GS)	DR (GS)

Notes: Each pair of annual row shows Chinese power ratings at MPA sites for that year followed by a state-type assessment at each location. Unless otherwise noted all data and terms are as per Power Assessment Tables in Chapter Six. State-type assessment coding: Offensive Realism: OR, Defensive Realism: DR, Power Transition Theory: PTT, Balance of Power Theory: BOP, Gains Sensitive: GS, Gains Less-Sensitive: GLS, Irrational: IRL, Weak: WK, Insufficient Information: INS. Relevant state-type colour codes:

IRL	WK	INS	DR(GLS)	DR	DR(GS)	DR(GS)BOP	DR(GS)/OR	(DR(GS)/OR)BOP	OR
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## **Malaysia**

### **Quantitative Summary and Selected Qualitative Description**

The quantitative data on Malaysia's behaviour is, while broadly clear, ambiguous regarding Kuala Lumpur's specific motivations. While up to 96% of Malaysia's annual assessments aligning with behaviours predicted by DR, the specific details of whether the nation is a Status Quo or Peaceful state are debateable.

In more detail, out of 147 annual state-type assessments conducted, 108 were assessed to provide no useful information for reasons discussed below. Of the remaining 39 useful assessments, 33 (85%) were judged to indicate DR behaviour in general (i.e., a DR(GS) or DR(GLS) state), but without sufficient specificity to allow a more precise identification. This core of behaviours hence firmly cements Malaysia as a DR nation, however it also provides no clarity to judge which theory Kuala Lumpur most aligns with.

Beyond this, the six other assessments reinforce Malaysia's DR-nature but are of course too small a proportion of its results to give strong indications on which motivations guide the state. They are comprised of one instance each of a DR(GLS), DR(GS) or DR(GS)/OR(PTT) assessment (each representing 2% of the total) and two assessments (5%) of DR(GS)/OR behaviour. These various results do not perfectly align with, but neither do they exclude, some form of DR motivation, and combined with the general DR assessments, they represent 96% of Malaysia's useful behaviours. The remaining single OR assessment, a clear outlier, reflects only 2% of the total set of behaviours.

All data referred to above is also available in [Table C7](#). Further to this high-level summary, the following descriptions provide an overview of the situations and behaviours that generated the various totals of state-type assessments.

### Offensive Objectives

Malaysia has offensive objectives at four locations – Louisa, Commodore and Barque Canada Reefs, and Amboyna Cay. Over 21 years, this provides 84 opportunities for assessment. Of these, no information was gained from 54, with 48 assessments of cooperative (i.e., DR(GLS)) behaviour providing no insight due to occurring where Malaysia was weak at Commodore and Barque Canada Reef, and Amboyna Cay. A further six years reflected assessments at Louisa Reef after Kuala Lumpur had given up its claim on the area, hence these behaviours provide no insight into its strategy to gain the Reef – or Malaysia’s state-type.

Regarding the remaining 30, in 27 instances (90%) Malaysia acted as a DR state. This reflected Kuala Lumpur engaging in either no actions to gain control of a site or only low-level cooperatives activities. The other 10% of assessments had a marginal impact on results and displayed no significant trends. Instead, there were one-off instances of DR(GS), OR and DR(GLS) behaviour – with the latter being the resolution of the dispute over Louisa Reef on terms favourable to Brunei.

### Defensive Objectives

Malaysia has only one defensive objective: to protect its outpost on Swallow Reef, with this contested by China, Taiwan and Vietnam. Over 21 years, this provides 63 opportunities for assessment. Of these, 54 provided no information; with 47 being insufficiently distinctive due to a lack of notable self-initiated activities by Malaysia, or responses to other states, or other nations engaging in no substantive actions towards these sites. In six other instances Kuala Lumpur engaged in low-level cooperative behaviours considered to apply to the Reef, but did so from a position of weakness, and once acted irrationally.

Of the remaining nine assessments, six (66%) represented DR behaviour in the form Kuala Lumpur engaging in low-level cooperative behaviours considered to apply to the Reef, and doing so from a position of power parity (towards China) or

superiority (towards Vietnam). The other three assessments capture two instances of DR(GS)/OR behaviour, stemming from the impact on China and Vietnam of a sovereignty affirming visit to the Reef by Malaysia's Prime Minister in 2008. This same incident also generates one result of irrational behaviour towards Taiwan, as Malaysia has power inferiority towards Taipei. These latter three assessments have a marginal impact on results.

### **Comparison to Trends**

Malaysia's behaviour aligns with the prediction in Chapter Three: that a DR state's behaviour (DR(GS) or (DR(GLS))) should be little affected by the military balance of power. Instead, such nations should act broadly consistently – either behaving as they see they see fit based on what they believe will succeed at a time and place (for Status Quo nations) or consistently cooperatively (for Peaceful states).

Further to this, Malaysia's behaviour was indeed consistent in its lack of an aggressive approach at the two sites where it was not weak and held offensive objectives, Louisa Reef and Amboyna Cay. This was despite concurrently having power superiority at the Reef against Brunei and only parity against Vietnam at the Cay. Further, of its usefully identifiable defensive activities at Swallow Reef, fully 66% were DR behaviours that, again, occurred regardless of whether Kuala Lumpur held power parity or superiority. And for the non-self-initiated instances when Malaysia did act differently, such as engaging in DR(GLS) activities towards Brunei, these actions were not coincident to any change in the balance of power.

### **Overall Assessment**

In overview, Malaysia most clearly behaves as some form of DR state, however the specifics remain elusive. In more detail, Kuala Lumpur does not engage in scope-distinctive activities (such as a major war of conquest, or joint demilitarisation) that would indicate it was either an OR or DR(GLS) state. And in terms of direction, Malaysia consistently engages in either low-level cooperative

behaviours towards its objectives or at least no aggressive actions. These are behaviours that would be expected from a Peaceful state or a Status Quo nation either conducting a deliberate strategy of low-level cooperation, or being content to not ceaselessly push to resolve a long-standing dispute.

Since such DR activities form the vast bulk (85%) of its usefully assessable behaviours in offensive and defensive situations, the remaining diverse and assorted assessments provide little guidance on Kuala Lumpur's precise motivations. As part of this, Malaysia's sole instance of PTT behaviour, provides little basis for confidence in understanding Kuala Lumpur's views on military power. Finally, the confidence in these results is constrained by the large proportion (73%) of Malaysia's assessments that generated no useful information. However, the consistency of the DR behaviour that exists provides greater certainty of state-type.

### **Tabulated Data**

Below, [Table C7](#) summarises the assessment outcomes, and is a copy of the Overall Summary Table from the summary sheet in the Malaysia AAD. It shows the total number of assessments; the number of each kind of result, such as DR(GS) or OR; the percentage of each result in terms of the overall number of assessments, and the number of each result that occurs at offensive or defensive objectives.

In turn [Table C8](#) shows all the state-type assessment outcomes across the 21 years and where they occurred, and is a copy of the Military Power and state-Type Assessment Summary Table from the summary sheet in the Malaysia AAD. This follows the format of the Power Assessment Table from Chapter Six, and interleaves annual power assessments in one row, with equivalent state-type assessments in the following row. To highlight where different assessment results occurred, this table is colour-coded with both power-rating colour and state-type tones.

Of note, for both tables only those state-types that actually arose in the analysis are shown. So, if no OR results came about, no space is reserved for such outcomes



Table C7: Malaysia Overall Summary Table

Aggregated Data				
Assessment Code	Tally of Assessed Outcomes	Results as % of Total*	Results at Offensive and Defensive Sites	
	N = 147	N = 108–39	OFF	DEF
IRL	1	1	0	1
WK	54	50	48	6
INS	47	44	0	47
DR/N/A	6	6	6	0
<b>Subtotal</b>	<b>108</b>	<b>100</b>	<b>54</b>	<b>54</b>
DR(GLS)	1	2	1	0
DR	33	85	27	6
DR(GS)	1	2	1	0
DR(GS)/OR	2	5	0	2
DR(GS)/OR(PTT)	1	2	1	0
OR	1	2	0	1
<b>Subtotal</b>	<b>39</b>	<b>98</b>	<b>30</b>	<b>9</b>
<b>Total</b>	<b>147</b>	<b>N/A</b>	<b>84</b>	<b>63</b>

Notes: Offensive Realism: OR, Defensive Realism: DR, Power Transition Theory: PTT, Balance of Power Theory: BOP, Gains Sensitive: GS, Gains Less-Sensitive: GLS, Irrational: IRL, Weak: WK, Not Applicable: N/A, Insufficient Information: INS. State-type codes are colour coded for consistency and ease of review in subsequent tables. Some totals may not add correctly due to rounding. Offensive and Defensive Sites reflect Malaysian objectives regarding locations. \*Codes that provided no information (IRL, WK, INS, N/A) are expressed as a percentage of the total assessments that provided no information (N = 108), and vice versa (N = 39).

**Table C8: Malaysia Military Power and State-Type Summary Table**

	Geographic Feature and Type						
	Louisa Reef (Sec B)	Swallow Reef (CoG)			Commodore Reef (Sec B)	Barque Canada Reef (Sec B)	Amboyna Cay (Sec A)
Claimed	PRC, ROC, VNM, MLY, BRN	CHN, MLY, TWN, VNM			CHN, MLY, TWN, VNM	CHN, MLY, TWN, VNM	CHN, MLY, PHL, TWN, VNM
Controlled	N/A	MLY			PHL/USN*	VNM	VNM
Distance from Bases	250	280			330	390	390
Malaysian Operational need	EMEZ - BRN	SD - CHN	SD - TWN	SD - VNM	EMEZ	EMEZ	AA/MEZ
1995	S	S	I	S	I	I	DP
1995	DR	INS	INS	INS	WK	WK	DR
1996	S	S	I	S	I	I	DP
1996	DR	INS	INS	INS	WK	WK	DR
1997	S	S	I	S	I	I	DP
1997	DR	INS	INS	INS	WK	WK	DR
1998	S	S	I	S	I	I	DP
1998	DR	INS	INS	INS	WK	WK	DR
1999	S	S	I	S	I	I	DP
1999	DR	INS	INS	OR	WK	WK	DR(GS)
2000	S	S	I	S	I	I	DP
2000	DR	INS	INS	INS	WK	WK	DR

2001	S	S	I	S	I	I	DP
2001	DR	INS	INS	INS	WK	WK	DR
2002	S	S	I	S	I	I	DP
2002	DR	INS	INS	INS	WK	WK	DR
2003	S	S	I	S	I	I	DP
2003	DR(GS)/OR(PTT)	INS	INS	INS	WK	WK	DR
2004	S	RP	I	S	I	I	DP
2004	DR	INS	INS	INS	WK	WK	DR
2005	S	RP	I	S	I	I	DP
2005	DR	DR	INS	INS	WK	WK	DR
2006	S	DP	I	S	I	I	DP
2006	DR	INS	INS	INS	WK	WK	DR
2007	S	DP	I	S	I	I	DP
2007	DR	INS	INS	INS	WK	WK	DR
2008	S	DP	I	S	I	I	DP
2008	DR	INS	INS	INS	WK	WK	DR
2009	S	DP	I	S	I	I	DP
2009	DR(GLS)	DR(GS)/OR	IRL	DR(GS)/OR	WK	WK	DR
2010	S	I	I	S	I	I	I
2010	DR/N/A	WK	INS	INS	WK	WK	WK
2011	S	I	I	S	I	I	I
2011	DR/N/A	WK	INS	DR	WK	WK	WK

2012	S	I	I	S	I	I	I
2012	DR/N/A	WK	INS	DR	WK	WK	WK
2013	S	I	I	S	I	I	I
2013	DR/N/A	WK	INS	DR	WK	WK	WK
2014	S	I	I	S	I	I	I
2014	DR/N/A	WK	INS	DR	WK	WK	WK
2015	S	I	I	S	I	I	I
2015	DR/N/A	WK	INS	DR	WK	WK	WK

Notes: Each pair of annual row shows Malaysia power ratings at MPA sites for that year followed by a state-type assessment at each location. Unless otherwise noted all data and terms are as per Power Assessment Tables in Chapter Six. State-type assessment coding: Offensive Realism: OR, Defensive Realism: DR, Power Transition Theory: PTT, Balance of Power Theory: BOP, Gains Sensitive: GS, Gains Less-Sensitive: GLS, Irrational: IRL, Weak: WK, Insufficient Information: INS. Relevant state-type colour codes:

IRL	WK	INS	DR(GLS)	DR	DR(GS)	DR(GS)/OR	DR(GS)/OR(PTT)	OR
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## The Philippines

### **Quantitative Summary and Selected Qualitative Description**

The quantitative data on the Philippines behaviour strongly indicates a DR state, with a very strong likelihood of Manila in fact being a Peaceful nation. Indeed, while up to 98% of Manila's assessments align with behaviours predicted by DR in general, some 49% alone reflect a DR(GLS) motivation, making a compelling case for this being the Philippine's fundamental alignment.

In more detail, out of 189 annual state-type assessments conducted, 154 were assessed to provide no useful information for reasons discussed below. Of the remaining 35 useful assessments, 17 (49%) were judged to indicate DR(GLS) behaviour. This is supported by a further 14 (40%) aligned with DR in general (i.e., a DR(GS) or DR(GLS) state), but without sufficient specificity to allow a more precise identification, and three (9%) DR(GS) assessments. This core of assessments both clearly confirms the Philippines as a DR nation, and also shows that it is most probably a Peaceful state. The remaining single OR(BOP) assessment, a clear outlier, reflects only 3% of the total set of behaviours.

All data referred to above is also available in [Table C9](#). Further to this high-level summary, the following descriptions provide an overview of the situations and behaviours that generated the various totals of state-type assessments.

### Offensive Objectives

The Philippines has offensive objectives at five locations<sup>399</sup> – Subi, Mischief, Fiery Cross, and Barque Canada Reefs, and Amboyna Cay. Over 21 years, this provides 108 opportunities for assessment. However, at all these sites over the entire time period, Manila was offensively weak. Hence no information is gained from any of

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<sup>399</sup> Six, after China seizes Scarborough Shoal in 2012. For counting purposes Manila is presumed to have an offensive requirement from 2013.

the 105 assessments, with 99 analyses of cooperative (i.e., DR(GLS) behaviour providing no insight due to these occurring where Manila was weak. In turn the remaining six reflected irrational behaviour by the Philippines at the Chinese-held Subi, Fiery Cross, and Mischief Reefs – including threats of war in 1998.

### Defensive Objectives

The Philippines has three defensive objectives:<sup>400</sup> to protect Scarborough Shoal, Thitu Island and Commodore Reef from various combinations of China, Malaysia and Vietnam. Over 21 years, this provides 81 opportunities for assessment. Of these, 46 provided no information; with 36 being insufficiently distinctive due to a lack of notable self-initiated activities by Manila, or responses to other states, or other nations engaging in no substantive actions towards these sites. In 10 other instances, the Philippines engaged in either cooperative or overtly aggressive activities towards China at Scarborough Shoal but always from a position of weakness, hence providing no information.

Of the remaining 35 assessments, 17 showed notable DR(GLS) behaviours, typically being proposals by Manila for highly cooperative outcomes such as demilitarised zones that encompassed all its defended locations, or agreeing to the potential for large-scale economic cooperation. Such outcomes are striking as 14 (82%) occurred at times and places where Manila held defensive superiority to its adversaries, with the remainder being from positions of parity.

Further, another 14 reflect general DR-behaviours, based on Manila engaging in low-level cooperative behaviours considered to apply to its defended locations, notably in terms of enthusiasm for the DoC/CoC. Again, 13 such instances (92%) occurred during times of power superiority by the Philippines with only one occurring at a time of power parity.

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<sup>400</sup> Two, after China seizes Scarborough Shoal in 2012. For counting purposes Manila's defensive requirement is considered to be in place for 2012.

Of the remaining four assessments, three relate to DR(GS) behaviour towards China at Thitu (generally reflecting a pattern of fluctuating more-coercive and less-coercive responses), and one is an OR(BOP) analysis at the same location. For the latter, this reflects Manila's threats of war towards China in 1998 at the one location where the Philippines held clear power superiority and had so-far been largely unmolested by Beijing. All these assessments together represent only 12% of Manila's actions, and the OR behaviour in particular is a clear outlier.

### **Comparison to Trends**

The Philippines behaviour well aligns with the prediction in Chapter Three: that a DR state's behaviour (DR(GS) or (DR(GLS))) should be little influenced by the military balance of power. Instead, such nations should act broadly consistently – either behaving as they see they see fit based on what they believe will succeed at a time and place (for Status Quo nations) or consistently cooperatively (for Peaceful states).

Further to this, Manila's behaviour was indeed consistent. Considering those instances that provide information, the Philippines repeatedly engaged in offers of both low-level and distinctive cooperation towards its territories regardless of whether Manila held power parity or (most often) superiority. And for those instances when the Philippines did act differently, namely engaging in DR(GS) and OR(BOP) behaviours in response to China, these actions were not coincident to any change in the balance of power.

### **Overall Assessment**

In overview, the Philippines most clearly behaves as some form of DR state, and most likely a Peaceful nation. More formally, the Philippines does not engage in scope-distinctive activities (such as a major war of conquest, or joint demilitarisation) that would indicate it was either an OR nation or DR(GLS) state. But in terms of its direction, Manila *does* consistently engage in offering at least

low-level cooperation, and in fact most frequently (in 49% of all its useful assessments) seeks to escalate to distinctive collaboration. These patterns, particularly the offers of distinctive cooperation, are clear indicators of a DR(GLS) nation. And the credibility of such behaviours is enhanced by them occurring at locations where Manila has control and at least power parity – the Philippines is in a position of strength and has the most to lose, yet still offers cooperation.

Separately, the Philippines does of course engage in a single instance of OR(BOP) behaviour. But in being a one-off, and statistically an OR-related outlier, this provides little basis for confidence in understanding Kuala Lumpur’s views on the impact of military power.

Finally, the confidence in these results is to a degree constrained by the large proportion (some 82%) of the Philippines assessments that generated no useful information. However, the consistency of the DR and DR(GLS) behaviour that do exist provides greater certainty in the state-type.

### **Tabulated Data**

Below, [Table C9](#) summarises the assessment outcomes, and is a copy of the Overall Summary Table from the summary sheet in the Philippines AAD. It shows the total number of assessments; the number of each kind of result, such as DR(GS) or OR; the percentage of each result in terms of the overall number of assessments, and the number of each result that occurs at offensive or defensive objectives.

In turn [Table C10](#) shows all the state-type assessment outcomes across the 21 years and where they occurred, and is a copy of the Military Power and state-Type Assessment Summary Table from the summary sheet in the Philippines AAD. This table follows the format of the Power Assessment Table from Chapter Six, and interleaves annual power assessments in one row, with equivalent state-type assessments in the following row. To highlight where different assessment results



occurred, this table is colour-coded with both power-rating colour and state-type tones.

Of note for this table, for the Philippines, in the original Power Assessment Table in the MPA, the various China-held Reefs, Barque Canada Reef and Amboyna Cay, were all aggregated together into the single right-most column of the table. This reflected that all these sites were offensive objectives for Manila, and as the Philippines' offensive capability was effectively nil, there was scant benefit in representing this common outcome across many columns. But in AAD summary, all these locations are broken out into separate columns as, in practice, the Philippines' actions did on occasion vary across these.<sup>401</sup> Also, for any of these sites, as Manila has no capacity to attack, distances from Cavite naval base not listed.

Of note, for both tables only those state-types that actually arose in the analysis are shown. So, if no OR results came about, no space is reserved for such outcomes.

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<sup>401</sup> In fact, this only occurred for the Chinese sites. Hence these are also captured separately in the Philippines' annual spreadsheets, but the Vietnam sites in those sheets are still held together.

Table C9: Philippines Overall Summary Table

Aggregated Data				
Assessment Code	Tally of Assessed Outcomes	Results as % of Total*	Results at Offensive and Defensive Sites	
	N = 189	N = 154–35	OFF	DEF
IRL	7	5	6	1
WK	111	72	102	9
INS	36	23	0	36
<b>Subtotal</b>	<b>154</b>	<b>100</b>	<b>108</b>	<b>46</b>
DR(GLS)	17	49	0	17
DR	14	40	0	14
DR(GS)	3	9	0	3
OR(BOP)	1	3	0	1
<b>Subtotal</b>	<b>35</b>	<b>101</b>	<b>0</b>	<b>35</b>
<b>Total</b>	<b>189</b>	<b>N/A</b>	<b>108</b>	<b>81</b>

*Notes: Offensive Realism: OR, Defensive Realism: DR, Power Transition Theory: PTT, Balance of Power Theory: BOP, Gains Sensitive: GS, Gains Less-Sensitive: GLS, Irrational: IRL, Weak: WK, Insufficient Information: INS. State-type codes are colour coded for consistency and ease of review in subsequent tables. Some totals may not add correctly due to rounding. Offensive and Defensive Sites reflect the Philippines' objectives regarding locations. \*Codes that provided no information (IRL, WK, INS) are expressed as a percentage of the total assessments that provided no information (N = 154), and vice versa (N = 35).*

**Table C10: Philippines Power and State-Type Summary Table**

Geographic Feature and Type												
	Scarborough Shoal (Sec B)		Thitu Island (CoG)			Itu Aba Island (CoG)	Commodore Reef (Sec B)	Subi Reef	Mischief Reef	Fiery Cross Reef	Barque Canada Reef	Amboyna Cay
Claimed	CHN, PHL, TWN,		CHN, PHL, TWN, VNM			CHN, PHL, TWN, VNM	CHN, MLY, PHL, TWN, VNM	CHN, MLY, VNM	CHN, MLY, VNM	CHN, MLY, VNM	VNM	VNM
Controlled	PHL (2012)/CHN +2012		PHL/USN*			TWN	PHL/USN*	Various	Various	Various	Various	Various
Average Distance Base	340		810			840	910	Various				
Philippine Operational Need	SD CH Pre- 2012 / EMEZ	SD TWN Pre- 2012	SD - CHN	SD - TWN	SD - VNM	N/A	SD - MLY	Various AA/MEZ & EMEZ				
1996	I	N/A	S	N/A	S	N/A	S	I	I	I	I	I
1995	WK	N/A	DR(GLS)	N/A	DR(GLS)	N/A	DR(GLS)	WK	IRL	WK	WK	WK
1996	I	N/A	S	N/A	S	N/A	S	I	I	I	I	I
1996	WK	N/A	DR(GLS)	N/A	DR	N/A	INS	WK	WK	WK	WK	WK
1997	I	N/A	S	N/A	S	N/A	S	I	I	I	I	I
1997	WK	N/A	DR(GLS)	N/A	DR(GLS)	N/A	DR(GLS)	WK	IRL	WK	WK	WK
1998	I	N/A	S	N/A	S	N/A	S	I	I	I	I	I
1998	INS	N/A	OR(BOP)	N/A	INS	N/A	INS	IRL	IRL	IRL	WK	WK
1999	I	N/A	S	N/A	S	N/A	S	I	I	I	I	I

1999	IRL	N/A	DR	N/A	DR	N/A	DR	WK	IRL	WK	WK	WK
2000	I	N/A	S	N/A	S	N/A	S	I	I	I	I	I
2000	INS	N/A	INS	N/A	INS	N/A	INS	WK	WK	WK	WK	WK
2001	I	N/A	S	N/A	S	N/A	S	I	I	I	I	I
2001	WK	N/A	INS	N/A	INS	N/A	INS	WK	WK	WK	WK	WK
2002	I	N/A	S	N/A	S	N/A	S	I	I	I	I	I
2002	INS	N/A	INS	N/A	INS	N/A	INS	WK	WK	WK	WK	WK
2003	I	N/A	S	N/A	S	N/A	S	I	I	I	I	I
2003	INS	N/A	DR(GLS)	N/A	INS	N/A	INS	WK	WK	WK	WK	WK
2004	I	N/A	S	N/A	S	N/A	S	I	I	I	I	I
2004	INS	N/A	INS	N/A	INS	N/A	INS	WK	WK	WK	WK	WK
2005	I	N/A	S	N/A	S	N/A	S	I	I	I	I	I
2005	WK	N/A	DR(GLS)	N/A	DR(GLS)	N/A	INS	WK	WK	WK	WK	WK
2006	I	N/A	AP	N/A	S	N/A	S	I	I	I	I	I
2006	INS	N/A	INS	N/A	DR	N/A	INS	WK	WK	WK	WK	WK
2007	I	N/A	AP	N/A	S	N/A	S	I	I	I	I	I
2007	INS	N/A	INS	N/A	INS	N/A	INS	WK	WK	WK	WK	WK
2008	I	N/A	RP	N/A	S	N/A	S	I	I	I	I	I
2008	INS	N/A	INS	N/A	INS	N/A	INS	WK	WK	WK	WK	WK
2009	I	N/A	RP	N/A	S	N/A	S	I	I	I	I	I
2009	WK	N/A	DR(GLS)	N/A	INS	N/A	INS	WK	WK	WK	WK	WK
2010	I	N/A	RP	N/A	S	N/A	S	I	I	I	I	I

2010	WK	N/A	DR	N/A	DR	N/A	DR	WK	WK	WK	WK	WK
2011	I	N/A	RP	N/A	S	N/A	S	I	I	I	I	I
2011	WK	N/A	DR(GLS)	N/A	DR(GLS)	N/A	DR(GLS)	WK	WK	WK	WK	WK
2012	I	N/A	RP	N/A	S	N/A	S	I	I	I	I	I
2012	WK	N/A	DR(GS)	N/A	DR(GLS)	N/A	DR(GLS)	WK	WK	WK	WK	WK
2013	I	N/A	RP	N/A	S	N/A	S	I	I	I	I	I
2013	WK	N/A	DR(GS)	N/A	DR	N/A	DR	WK	WK	WK	WK	WK
2014	I	N/A	RP	N/A	S	N/A	S	I	I	I	I	I
2014	WK	N/A	DR(GLS)	N/A	DR	N/A	DR	WK	WK	WK	WK	WK
2015	I	N/A	RP	N/A	S	N/A	S	I	I	I	I	I
2015	WK	N/A	DR(GS)	N/A	DR	N/A	DR	WK	WK	WK	WK	WK

Notes: Each pair of annual row shows the Philippines power ratings at MPA sites for that year followed by a state-type assessment at each location. Unless otherwise noted all data and terms are as per Power Assessment Tables in Chapter Six. Note that sites there previously listed as assorted Spratly (KIG) Features are now shown as Subi, Fiery Mischief and Barque Canada Reefs, and Amboyna Cay, to allow more sensitive representation of activity by Manila. State-type assessment coding: Offensive Realism: OR, Defensive Realism: DR, Power Transition Theory: PTT, Balance of Power Theory: BOP, Gains Sensitive: GS, Gains Less-Sensitive: GLS, Irrational: IRL, Weak: WK, Insufficient Information: INS. Relevant state-type colour codes:

IRL	WK	INS	DR(GLS)	DR	DR(GS)	OR(BOP)
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## Taiwan

### **Quantitative Summary and Selected Qualitative Description**

The quantitative data on Taiwan's behaviour is, while broadly clear, ambiguous regarding Taipei's specific motivations. While up to 99% of Taiwan's annual assessments align with behaviours predicted by DR, the specific details of whether the nation is a Status Quo or Peaceful state are debateable, although Taipei does lean more strongly in the DR(GS) direction.

In more detail, out of 234 annual state-type assessments conducted, 56 were judged to provide no useful information for various reasons discussed below. Of the remaining 178 useful assessments, 102 (57%) were judged to indicate DR behaviour in general (i.e., a DR(GS) or DR(GLS) state), but without sufficient specificity to allow a more precise identification. This core of behaviours shows Taiwan is a DR nation but does not clarify which theory Taiwan most aligns with.

Beyond this, another 57 assessments (32%) are rated as DR(GS). This quite strongly suggests that Taiwan is in fact a Status Quo rather than a Peaceful state. The remaining DR-aligned results are eight instances (4%) of DR(GLS) and 10 (6%) of DR(GS)/OR activity. These various outcomes either overtly align with, or at least do not exclude, some form of DR motivation, and combined with the general DR result, represent 99% of Taiwan's useful behaviours. The remaining single OR outcome, a clear outlier, reflects only 1% of the total.

Of note, of the various nations investigated, Taiwan has the largest share (76%) of potential assessments that resulted in useful information. This reflects that Taipei contests every single location under review, principally has offensive aims,<sup>402</sup> and is almost never in a position of weakness. Hence, almost of Taipei's annual assessments provide insight into its state-type.

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<sup>402</sup> With such sites where all actions are considered relevant to a nation's strategy.

All data referred to above is also available in [Table C10](#). Further to this high-level summary, the following descriptions provide an overview of the situations and behaviours that generated the various totals of state-type assessments.

### Offensive Objectives

Taiwan has offensive objectives at eight locations<sup>403</sup> – Subi, Fiery Cross, Mischief, Swallow and Louisa Reefs, Woody and Spratly Island, and Macclesfield Bank. Over 21 years, this provides 159 opportunities for assessment. Of these, no information was gained from 12 assessments of cooperative (i.e., DR(GLS)) behaviour due to them occurring where Taiwan was weak towards China.

Regarding the remaining 159, in 102 instances (64%) Taiwan acted as a DR state. This reflected Taipei engaging in either no actions to gain control of a site or only low-level cooperatives activities. Another 52 (32%) were DR(GS) assessments, principally reflecting Taiwan engaging in persistent low-level coercive behaviours. Beyond this, Taiwan displayed DR(GLS) behaviour five times (3%) reflecting instances where Taipei did not react to self-initiated distinctive defensive coercion by China, such as Beijing's island-building in the Paracels and Spratlys from 2014.

### Defensive Objectives

Taiwan has two defensive objectives: to protect its outposts on Pratas and Itu Aba Islands, with the former contested by China and the latter by China and Vietnam. Over 21 years, this provides 63 opportunities for assessment. Of these, 44 provided no information, o being insufficiently distinctive due to a lack of notable self-initiated activities by Taiwan, or responses to other states, or other nations engaging in no substantive actions towards these sites.

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<sup>403</sup> Nine, once China seizes Scarborough Shoal in 2012.

Of the remaining 19 assessments, 10 (52%) represent DR(GS)/OR behaviour, with nine of these being self-initiated distinctive coercion by Taipei via despatching senior politicians on sovereignty affirming visits. Five DR(GS) assessments reflect a range of behaviours, such as responding with matched coercion to ASEAN and China's exclusion of Taipei from the DoC. Finally, Taiwan displays DR(GLS) behaviours three times, by responding to Vietnam with reduced coercion on a range of matters, and OR behaviour once. The latter is the result of Taiwan conducting a militarised sovereignty affirming visit to Itu Aba in 2003. But while Taipei balanced this with cooperative behaviours to Vietnam (leading to a DR(GS) assessment) no such actions were extended to China – so producing an OR result.

### **Comparison to Trends**

Taiwan's behaviour aligns with the prediction in Chapter Three: that a DR state's behaviour (DR(GS) or (DR(GLS))) should be little affected by the military balance of power. Instead, such nations should act broadly consistently – either behaving as they see they see fit based on what they believe will succeed at a time and place (for Status Quo nations) or consistently cooperatively (for Peaceful states).

Further to this, Taipei consistently lacked a distinctly aggressive approach where it held offensive objectives, with this remaining so even as the balance of power shifted from superiority to inferiority at some Chinese held sites. Further, 67% of Taiwan's offensive DR(GS) behaviour, in the form of low-level coercion, occurred from 2009 onwards when Taipei was (and remained at) broad parity with China but superior to Vietnam, Malaysia and Brunei. This behaviour aligns with that expected of a DR(GS) state that has determined, for non-balance of power reasons, to shift its more cooperative approach to a more coercive one. Also, 90% of Taiwan's defensive DR(GS)/OR activities were sovereignty-affirming visits that occurred consistently at power parity and superiority. Finally, when Taipei did act differently, such as engaging in DR(GLS) activities towards Vietnam, these actions were not coincident to any power change.



## Overall Assessment

In overview, Taiwan most clearly behaves as some form of DR state, and most likely a DR(GS) one. Indeed, the DR and DR(GS) assessments comprise 89% of all of Taiwan's usefully assessable behaviours in offensive and defensive situations, hence the remaining results provide little scope for suggesting different motivations.

In more detail, Taipei does not engage in scope-distinctive activities (such as a major war of conquest, or joint demilitarisation) that would indicate it was either an OR or DR(GLS) state. And in terms of direction, Taiwan mostly (57%) engages in low-level cooperative behaviours towards its objectives or at least no aggressive actions. These are behaviours that would be expected from a Peaceful state or a Status Quo nation either conducting a deliberate strategy of low-level cooperation, or being content to not ceaselessly push to resolve a long-standing dispute.

Yet Taipei also behaves as a DR(GS) state 32% of the time, including by persistent low-level offensive coercion from 2009 onwards. Such behaviour is not only DR(GS) indicative itself, but also aligns with what would be expected of an overall Opportunistic state now investigating a more coercive approach.

Finally, the confidence in these results is buttressed by them being comprised of the 76% of Taiwan's assessments that generated useful information. And this total itself builds credibility by representing a numerically large sample of 178 results, reducing the impact of outliers.

## Tabulated Data

Below, [Table C11](#) summarises the assessment outcomes, and is a copy of the Overall Summary Table from the summary sheet in the Taiwan AAD. It shows the total number of assessments; the number of each kind of result, such as DR(GS) or OR; the percentage of each result in terms of the overall number of assessments, and the number of each result that occurs at offensive or defensive objectives.

In turn Table C12 shows all the state-type assessment outcomes across the 21 years and where they occurred, and is a copy of the Military Power and state-Type Assessment Summary Table from the summary sheet in the Taiwan AAD. This follows the format of the Power Assessment Table from Chapter Six, and interleaves annual power assessments in one row, with equivalent state-type assessments in the following row. To highlight where different assessment results occurred, this table is colour-coded with both power-rating colour and state-type tones.

Of note, for both tables only those state-types that actually arose in the analysis are shown. So, if no OR results came about, no space is reserved for such outcomes.

Table C11: Taiwan Overall Summary Table

Aggregated Data				
Assessment Code	Tally of Assessed Outcomes	Results as % of Total*	Results at Offensive and Defensive Sites	
	N = 234	N = 56–178	OFF	DEF
WK	12	21	12	0
INS	44	79	0	44
<b>Subtotal</b>	<b>56</b>	<b>100</b>	<b>12</b>	<b>44</b>
DR(GLS)	8	4	5	3
DR	102	57	102	0
DR(GS)	57	32	52	5
DR(GS)/OR	10	6	0	10
OR	1	1	0	1
<b>Subtotal</b>	<b>178</b>	<b>100</b>	<b>159</b>	<b>19</b>
<b>Total</b>	<b>234</b>	<b>N/A</b>	<b>171</b>	<b>63</b>

Notes: Offensive Realism: OR, Defensive Realism: DR, Power Transition Theory: PTT, Balance of Power Theory: BOP, Gains Sensitive: GS, Gains Less-Sensitive: GLS, Irrational: IRL, Weak: WK, Insufficient Information: INS. State-type codes are colour coded for consistency and ease of review in subsequent tables. Some totals may not add correctly due to rounding. Offensive and Defensive Sites reflect Taiwanese objectives regarding locations. \*Codes that provided no information (WK, INS) are expressed as a percentage of the total assessments that provided no information (N = 56), and vice versa (N = 178).

**Table C12: Taiwan Power and State-Type Summary Table**

	Geographic Feature and Type													
	Pratas Island (CoG)	Scarborough Shoal (Sec B)	Macclesfield Bank (Sec B)	Woody Island (CoG)	Subi Reef (Sec B/A)	Thitu Island (CoG)	Itu Aba Island (CoG)			Mischief Reef (Sec B/A)	Fiery Cross Reef (Sec B/A)	Spratly Island (CoG)	Swallow Reef (CoG)	Louisa Reef (Sec B)
Claimed	CHN, TWN	CHN, PHL, TWN	CHN, TWN	CHN, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM			CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, TWN, VNM	CHN, MLY, TWN, VNM	BRN, CHN, MLY, TWN, VNM
Controlled	TWN	PHL/CHN	CHN	CHN	CHN	PHL	TWN			CHN	CHN	VNM	MLY	N/A
Distance from Bases	420	870	950	1050	1430	1450	1500			1500	1650	1800	1830	1960
Taiwanese Operational Need	SD	EMEZ	EMEZ	AA/MEZ	EMEZ - AA/MEZ	N/A	SD - CHN	SD - PHL	SD - VNM	EMEZ - AA/MEZ	EMEZ - AA/MEZ	AA/MEZ	AA/MEZ	EMEZ - BRN
1995	S	N/A	S	AP	RP	N/A	S	N/A	S	RP	RP	S	S	S
1995	INS	N/A	DR(GS)	DR(GS)	DR(GS)	N/A	INS	N/A	DR(GS)/OR	DR(GS)	DR(GS)	DR(GS)	DR(GS)	DR(GS)
1996	S	N/A	S	AP	RP	N/A	S	N/A	S	RP	RP	S	S	S
1996	INS	N/A	DR	DR	DR	N/A	INS	N/A	INS	DR(GLS)	DR	DR	DR	DR
1997	S	N/A	S	AP	RP	N/A	S	N/A	S	RP	RP	S	S	S
1997	INS	N/A	DR	DR	DR	N/A	INS	N/A	INS	DR	DR	DR	DR	DR
1998	S	N/A	S	AP	RP	N/A	S	N/A	S	RP	RP	S	S	S
1998	INS	N/A	DR	DR	DR	N/A	INS	N/A	INS	DR	DR	DR	DR	DR
1999	S	N/A	S	AP	RP	N/A	S	N/A	S	RP	RP	S	S	S

1999	INS	N/A	DR	DR	DR	N/A	INS	N/A	INS	DR	DR	DR	DR	DR
2000	S	N/A	AP	AP	DP	N/A	RP	N/A	S	DP	DP	S	S	S
2000	DR(GS)/OR	N/A	DR	DR	DR	N/A	INS	N/A	INS	DR	DR	DR	DR	DR
2001	S	N/A	AP	AP	DP	N/A	RP	N/A	S	DP	DP	S	S	S
2001	INS	N/A	DR	DR	DR	N/A	INS	N/A	INS	DR	DR	DR	DR	DR
2002	S	N/A	AP	AP	DP	N/A	RP	N/A	S	DP	DP	S	S	S
2002	DR(GS)	N/A	DR(GS)	DR(GS)	DR(GS)	N/A	DR(GS)	N/A	DR(GS)	DR(GS)	DR(GS)	DR(GS)	DR(GS)	DR(GS)
2003	S	N/A	AP	AP	DP	N/A	RP	N/A	S	DP	DP	S	S	S
2003	INS	N/A	DR	DR	DR	N/A	OR	N/A	DR(GS)	DR	DR	DR(GS)	DR	DR
2004	AP	N/A	RP	AP	DP	N/A	RP	N/A	S	DP	DP	S	S	S
2004	INS	N/A	DR	DR	DR	N/A	INS	N/A	INS	DR	DR	DR	DR	DR
2005	AP	N/A	RP	RP	DP	N/A	DP	N/A	S	DP	DP	S	S	S
2005	DR(GS)/OR	N/A	DR	DR	DR	N/A	INS	N/A	INS	DR	DR	DR	DR	DR
2006	AP	N/A	RP	RP	RP	N/A	DP	N/A	S	RP	RP	S	S	S
2006	INS	N/A	DR	DR	DR	N/A	INS	N/A	INS	DR	DR	DR	DR	DR
2007	AP	N/A	RP	RP	RP	N/A	DP	N/A	S	RP	RP	S	S	S
2007	INS	N/A	DR	DR	DR	N/A	INS	N/A	DR(GS)	DR	DR	DR	DR	DR
2008	AP	N/A	DP	RP	DP	N/A	DP	N/A	S	DP	DP	S	S	S
2008	DR(GS)/OR	N/A	DR	DR	DR	N/A	DR(GS)/OR	N/A	DR(GS)/OR	DR	DR	DR	DR	DR
2009	AP	N/A	DP	RP	DP	N/A	DP	N/A	S	DP	DP	S	S	S
2009	INS	N/A	DR(GS)	DR(GS)	DR(GS)	N/A	INS	N/A	INS	DR(GS)	DR(GS)	DR(GS)	DR(GS)	DR(GS)
2010	AP	N/A	DP	RP	DP	N/A	DP	N/A	S	DP	DP	S	S	S

2010	INS	N/A	DR	DR	DR	N/A	INS	N/A	INS	DR	DR	DR	DR	DR
2011	AP	N/A	DP	RP	DP	N/A	DP	N/A	S	DP	DP	S	S	S
2011	INS	N/A	DR(GS)	DR(GS)	DR(GS)	N/A	INS	N/A	DR(GLS)	DR(GS)	DR(GS)	DR(GS)	DR(GS)	DR(GS)
2012	RP	N/A	DP	RP	DP	N/A	DP	N/A	S	DP	DP	S	S	S
2012	INS	N/A	DR(GS)	DR(GS)	DR(GS)	N/A	INS	N/A	DR(GLS)	DR(GS)	DR(GS)	DR(GS)	DR(GS)	DR(GS)
2013	RP	I	I	DP	I	N/A	DP	N/A	S	I	I	S	S	S
2013	INS	WK	WK	DR(GS)	WK	N/A	INS	N/A	DR(GLS)	WK	WK	DR(GS)	DR(GS)	DR(GS)
2014	RP	I	I	DP	I	N/A	DP	N/A	S	I	I	S	S	S
2014	INS	WK	WK	DR(GS)	WK	N/A	DR(GS)/OR	N/A	DR(GS)/OR	WK	WK	DR(GS)	DR(GS)	DR(GS)
2015	RP	I	I	DP	DP	N/A	DP	N/A	S	DP	DP	S	S	S
2015	INS	WK	WK	DR(GLS)	DR(GLS)	N/A	DR(GS)/OR	N/A	DR(GS)/OR	DR(GLS)	DR(GLS)	DR(GS)	DR(GS)	DR(GS)

Notes: Each pair of annual row shows Taiwanese power ratings at MPA sites for that year followed by a state-type assessment at each location. Unless otherwise noted all data and terms are as per Power Assessment Tables in Chapter Six. State-type assessment coding: Offensive Realism: OR, Defensive Realism: DR, Power Transition Theory: PTT, Balance of Power Theory: BOP, Gains Sensitive: GS, Gains Less-Sensitive: GLS, Irrational: IRL, Weak: WK, Insufficient Information: INS. Relevant state-type colour codes:

WK	INS	DR(GLS)	DR	DR(GS)	DR(GS)/OR	OR
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## Vietnam

### **Quantitative Summary and Selected Qualitative Description**

The quantitative data on Vietnam's behaviour is similar to Malaysia's. That is, while Hanoi is clearly a DR state, with 100% of Vietnam's annual assessments aligning with behaviours predicted by DR, the specific details of whether the nation is a Status Quo or Peaceful state are debateable.

In more detail, out of 294 annual state-type assessments conducted, 248 (84%) were assessed to provide no useful information for reasons discussed below. Of the remaining 46 useful assessments, 40 (87%) were judged to indicate DR behaviour in general (i.e., a DR(GS) or DR(GLS) state), but without enough specificity to allow a more precise identification. This core of results firmly cements Vietnam as a DR nation, however it provides no clarity on which theory Hanoi most aligns with.

Beyond this, the six other assessments reinforce Vietnam's DR-nature but are of course too small a proportion of its results to give strong indications on which motivations guide the state. These are comprised of two DR(GLS) and four DR(GS) outcomes, representing 4% and 9% of the total, respectively. These results do not perfectly align with, but neither do they exclude, some form of DR motivation, and combined with the general DR assessments, represent 100% of Vietnam's useful assessments.

All data referred to above is also available in [Table C13](#). Further to this high-level summary, the following descriptions provide an overview of the situations and behaviours that generated the various totals of state-type assessments.

### Offensive Objectives

Vietnam has offensive objectives at eight locations – Woody, Thitu and Itu Aba Islands, and Fiery Cross, Subi, Mischief, Swallow and Louisa Reefs. Over 21 years,

this provides 168 opportunities for assessment. Of note, Hanoi is offensively weak at all these sites bar Louisa Reef. As a result, it is not surprising that of these opportunities, no information was gained from 147, with 145 results of cooperative (i.e., DR(GLS)) behaviour providing no insight due to occurring where Hanoi was weak, and likewise, two instances of irrational aggressive behaviour.

Regarding the remaining 21 outcomes, in 19 instances (90%) Vietnam acted as a DR state. This reflected Hanoi engaging in either no actions to gain control of Louisa Reef or only low-level cooperatives activities. The remaining two instances of DR(GS) behaviour are based on Hanoi's use of mixtures of low-level coercive and cooperative behaviours to gain control of the Reef.

### Defensive Objectives

Vietnam has three defensive objectives: to protect its outposts on Spratly Island, Barque Canada Reef and Amboya Cay, with these contested by one or more states in the form of China, Malaysia, the Philippines and Taiwan. Over 21 years, this provides 126 opportunities for assessment. Of these, 101 provided no information; with 100 being insufficiently distinctive due to a lack of notable self-initiated activities by Vietnam, or responses to other states, or other nations engaging in no substantive actions towards these sites. In one other instance, Hanoi responded with reduced and matched coercion to Chinese coercion at Spratly Island but did so from a position of weakness, providing no information.

Of the remaining 25 assessments, 21 (84%) represented DR behaviour in the form Hanoi engaging in low-level cooperative behaviours considered to apply to the various sites, and doing so from a position of power parity (towards China) or superiority (towards Malaysia and the Philippines). The other four assessments capture two instances each of DR(GLS) and DR(GS) behaviour, occurring respectively when Vietnam responded with reduced or matched coercion to confrontational Chinese behaviours at Spratly Island, while Hanoi was at power parity.



## **Comparison to Trends**

Vietnam's behaviour aligns with the prediction in Chapter Three: that a DR state's behaviour (DR(GS) or DR(GLS)) should be little affected by the military balance of power. Instead, such nations should act broadly consistently – either behaving as they see fit based on what they believe will succeed at a time and place (for Status Quo nations) or consistently cooperatively (for Peaceful states).

Further to this, Vietnam's behaviour was indeed consistent in its lack of a distinctly aggressive approach at Louisa Reef, which Hanoi retained as it moved from power parity (1995–2011) to superiority (2012 onwards). Further, of its usefully identifiable defensive activities, 84% were DR behaviours that occurred regardless of whether Hanoi held power parity or superiority. And for the instances when Vietnam did act differently, such as engaging in DR(GLS) activities towards China, these actions were not coincident to any change in the balance of power.

## **Overall Assessment**

In overview, Vietnam clearly behaves as some form of DR state, however the specifics remain elusive. In more detail, Hanoi does not engage in scope-distinctive activities (such as a major war of conquest or joint demilitarisation) that would indicate it was either an OR or DR(GLS) state. And in terms of direction, Vietnam consistently engages in low-level cooperative behaviours towards its objectives or at least no aggressive actions. These are behaviours that would be expected from a Peaceful state or a Status Quo nation either conducting a deliberate strategy of low-level cooperation, or being content to not ceaselessly push to resolve a long-standing dispute.

Since such DR activities form the vast bulk (87%) of its usefully assessable behaviours in offensive and defensive situations, the remaining assessments provide little guidance on Hanoi's precise motivations.

Finally, the confidence in these results is to a degree constrained by the large proportion (some 84%) of Vietnam's assessments that generated no useful information. However, the consistency of the DR behaviour that does exist provides greater certainty in the state-type.

### **Tabulated Data**

Below, [Table C13](#) summarises the assessment outcomes, and is a copy of the Overall Summary Table from the summary sheet in the Vietnam AAD. It shows the total number of assessments; the number of each kind of result, such as DR(GS) or OR; the percentage of each result in terms of the overall number of assessments, and the number of each result that occurs at offensive or defensive objectives.

In turn [Table C14](#) shows all the state-type assessment outcomes across the 21 years and where they occurred, and is a copy of the Military Power and state-Type Assessment Summary Table from the summary sheet in the Vietnam AAD. This follows the format of the Power Assessment Table from Chapter Six, and interleaves annual power assessments in one row, with equivalent state-type assessments in the following row. To highlight where different assessment results occurred, this table is colour-coded with both power-rating colour and state-type tones.

Of note, for both tables only those state-types that actually arose in the analysis are shown. So, if no OR results came about, no space is reserved for such outcomes.

Table C13: Vietnam Overall Summary Table

Aggregated Data				
Assessment Code	Tally of Assessed Outcomes	Results as % of Total*	Results at Offensive and Defensive Sites	
	N = 294	N = 248–46	OFF	DEF
IRL	2	1	2	0
WK	146	59	145	1
INS	100	41	0	100
Subtotal	248	101	147	101
DR(GLS)	2	4	0	2
DR	40	87	19	21
DR(GS)	4	9	2	2
Subtotal	46	100	21	25
<b>Total</b>	<b>294</b>	<b>N/A</b>	<b>168</b>	<b>126</b>

Notes: Offensive Realism: OR, Defensive Realism: DR, Power Transition Theory: PTT, Balance of Power Theory: BOP, Gains Sensitive: GS, Gains Less-Sensitive: GLS, Irrational: IRL, Weak: WK, Insufficient Information: INS. State-type codes are colour coded for consistency and ease of review in subsequent tables. Some totals may not add correctly due to rounding. Offensive and Defensive Sites reflect Vietnamese objectives regarding locations. \*Codes that provided no information (IRL, WK, INS) are expressed as a percentage of the total assessments that provided no information (N = 248), and vice versa (N = 46).

Table C14: Vietnam Power and State-Type Summary Table

	Geographic Feature and Type													
	Woody Island (CoG)	Spratly Island (CoG)		Fiery Cross (Sec B/A)	Subi Reef (Sec B/A)	Thitu Island (CoG)	Itu Aba Island (CoG)	Barque Canada Reef (Sec B)		Amboyna Cay (Sec A)		Swallow Reef (CoG)	Mischief Reef (Sec B/A)	Louisa Reef (Sec B)
Claimed	CHN, TWN, VNM	CHN, TWN, VNM		CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, PHL, TWN, VNM	CHN, MLY, PHL, TWN, VNM		CHN, MLY, PHL, TWN, VNM		CHN, MLY, TWN, VNM	CHN, PHL, TWN, VNM	BRN, CHN, MLY, TWN, VNM
Controlled	CHN	VNM		CHN	CHN	PHL/USN*	TWN	VNM		VNM		MLY	CHN	N/A
Distance from Bases	450	460		480	540	560	590	600		610		700	730	750
Vietnamese Operational Need	AA/MEZ	SD - CHN	SD - TWN	EMEZ - AA/MEZ	EMEZ - AA/MEZ	AA/MEZ	AA/MEZ	SD - MLY	SD - PHL	SD - MLY	SD - PHL	AA/MEZ	EMEZ - AA/MEZ	Various AA/MEZ & EMEZ
1995	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
1995	WK	INS	INS	WK	WK	WK	IRL	INS	INS	INS	INS	WK	WK	DR
1996	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
1996	WK	INS	INS	WK	WK	WK	WK	INS	INS	INS	INS	WK	WK	DR
1997	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
1997	WK	INS	INS	WK	WK	WK	WK	INS	INS	INS	INS	WK	WK	DR
1998	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
1998	WK	INS	INS	WK	WK	WK	WK	INS	INS	INS	INS	WK	WK	DR
1999	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
1999	WK	INS	INS	WK	WK	WK	WK	INS	INS	INS	INS	WK	WK	DR
2000	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP

2000	WK	INS	INS	WK	WK	WK	WK	INS	INS	INS	INS	WK	WK	DR
2001	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
2001	WK	INS	INS	WK	WK	WK	WK	INS	INS	INS	INS	WK	WK	DR
2002	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
2002	WK	INS	INS	WK	WK	WK	WK	INS	INS	INS	INS	WK	WK	DR
2003	I	S	I	I	I	I	I	S	S	AP	S	I	I	RP
2003	WK	INS	INS	WK	WK	WK	WK	INS	INS	INS	INS	WK	WK	DR
2004	I	AP	I	I	I	I	I	S	S	AP	S	I	I	AP
2004	WK	INS	INS	WK	WK	WK	WK	INS	INS	INS	INS	WK	WK	DR
2005	I	AP	I	I	I	I	I	S	S	AP	S	I	I	AP
2005	WK	INS	INS	WK	WK	WK	IRL	INS	INS	INS	INS	WK	WK	DR
2006	I	RP	I	I	I	I	I	S	S	AP	S	I	I	AP
2006	WK	INS	INS	WK	WK	WK	WK	INS	INS	INS	INS	WK	WK	DR
2007	I	RP	I	I	I	I	I	S	S	AP	S	I	I	AP
2007	WK	INS	INS	WK	WK	WK	WK	INS	INS	INS	INS	WK	WK	DR
2008	I	RP	I	I	I	I	I	S	S	AP	S	I	I	AP
2008	WK	DR	INS	WK	WK	WK	WK	INS	INS	INS	INS	WK	WK	DR
2009	I	RP	I	I	I	I	I	S	S	AP	S	I	I	AP
2009	WK	DR(GS)	INS	WK	WK	WK	WK	INS	INS	INS	INS	WK	WK	DR
2010	I	DP	I	I	I	I	I	S	S	S	S	I	I	AP
2010	WK	DR	INS	WK	WK	WK	WK	INS	DR	INS	DR	WK	WK	DR
2011	I	DP	I	I	I	I	I	S	S	S	S	I	I	AP

2011	WK	DR(GLS)	INS	WK	WK	WK	WK	INS	INS	INS	INS	WK	WK	DR(GS)
2012	I	DP	I	I	I	I	I	S	S	S	S	I	I	S
2012	WK	DR(GS)	INS	WK	WK	WK	WK	DR	DR	DR	DR	WK	WK	DR
2013	I	DP	I	I	I	I	I	S	S	S	S	I	I	S
2013	WK	DR	INS	WK	WK	WK	WK	DR	DR	DR	DR	WK	WK	DR
2014	I	DP	I	I	I	I	I	S	S	S	S	I	I	S
2014	WK	DR(GLS)	INS	WK	WK	WK	WK	DR	DR	DR	DR	WK	WK	DR
2015	I	I	I	I	I	I	I	S	S	S	S	I	I	S
2015	WK	WK	INS	WK	WK	WK	WK	DR	DR	DR	DR	WK	WK	DR(GS)

Notes: Each pair of annual row shows Vietnamese power ratings at MPA sites for that year followed by a state-type assessment at each location. Unless otherwise noted all data and terms are as per Power Assessment Tables in Chapter Six. State-type assessment coding: Offensive Realism: OR, Defensive Realism: DR, Power Transition Theory: PTT, Balance of Power Theory: BOP, Gains Sensitive: GS, Gains Less-Sensitive: GLS, Irrational: IRL, Weak: WK, Insufficient Information: INS. Relevant state-type colour codes:

IRL	WK	INS	DR(GLS)	DR	DR(GS)
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