

School of Media, Culture and Creative Arts

**Translation of national environmental management programs by the
State of Western Australia, the Commonwealth government, and Perth
Region NRM, a citizen group**

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Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other persons 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.

Signature

Date: 25 September 2013

Abstract

Translation of national environmental management programs by the State of Western Australia, the Commonwealth government, and Perth Region NRM, a citizen group.

This thesis employs exploratory research to examine and describe how two governments and a citizen regional water catchment group implemented adaptive management in a major Australian environmental management program. The research question asked how the theories of action between government and regional bodies influenced their relationships.

Early in the research it became clear that some of the fundamental assumptions made about the nature of these bodies as independent and enduring entities were inconsistent. To use Whitehead's fallacy, they had been simply located and were not only in one geographic location but as influencers, widely distributed. Further examination revealed the agency problems inherent in the research question as relations between these entities are impossible in Newtonian metaphysics.

Following the alternative line of thought of the fallacy of simple location led to use of metaphysics with nothing but relations including those of non-humans. Relations between humans and non-humans were then considered using primarily Latour's version of actor network theory drawing on Whitehead's 'philosophy of organism'.

'Policy', 'natural resource management' (NRM), 'adaptive management' and 'states', amongst others, if treated as objects, imply that there is a 'ready-made' thing, which may be deployed. However through the lens of this alternative metaphysics, questions are posed about how these *become* more stable and more real. Rather than treating these as independent objects, their *becoming* was inferred from interviews and experimental tactics including Latour's 'translation', together with the sociological understanding of object relations. Translation focuses research attention on actual instances of connecting which otherwise would remain hidden.

In particular the policy program, popularly conceptualised as a stable entity produced by policy makers and which could travel and deliver certainty, was performed in multiple ways by officials and citizens. The policy while acting as a resource for further activity was being

determined by it.

In governance, the solution to joining-up difficulties has involved proposals of for example, shared values between officials seemingly at odds with their neutrality. Translation produced a few instances of public servants deploying connection in their multiple roles of Weberian neutral officials and more personal selves. These micro-processes deserve further attention in their incorporation in governance.

Philosophy and practice which attempt to overcome or side-step dualisms between nature and culture, natural and social sciences, humans and nonhumans, are desirable in environmental management. However, while solving problems of relation, methodological matters are difficult.

Keywords

Policy, public administration, environmental management, actor-network theory, translation, connectivity, object relations

Contents

CHAPTER 1: INTRODUCTION	Page
Background to the research	1
• Australian environmental management and government programs	1
• Western Australian environmental management and the Swan Coastal Plain	5
• Intergovernmental and other relations in environmental management	8
• Research objective and research questions	11
• Terminology and glossary	13
Outline of the thesis	13
• Introduction	13
• Methodology	15
• Analysis	19
Conclusion	23
CHAPTER 2: A MATTER OF CONCERN: THE SWAN RIVER	
Introduction	25
Case study B: Environmental governance of the Swan River, Western Australia	26
• Background	26
• Case study B	28
• Research Procedure	31
• Observations about Perth Region NRM and stakeholder verification	33
• Stakeholder verification of study results	35
• The language of responsibilities and its translation	36
Quasi-objects	40
• Quasi and transitional objects	40
• Quasi-objects make the collective and the collective makes quasi-objects	41
Conflict in public policy	43
• Public officials as transitional and quasi-objects	43
• Contestation evidences a matter of concern	45
• Organisations as entities in an environment	47
• Summary remarks	48

CHAPTER 3: HISTORY OF THE RESEARCH

Size of Perth Region NRM	49
Why was it too small?	50
• Object relations	54
• Whitehead's Fallacy of Simple Location	57
• Implications for the research	62
Proceed as planned or inquire further?	63
Doing process as connectivity	64
Conclusion	69

CHAPTER 4: RESEARCH METHODOLOGY I

Introduction	71
• Research purpose and adoption of actor network theory	72
• The problems of the practice disciplines: Nature and Culture	73
• The relationship between metaphysics, and ontology and methodology/method	74
• Designing	78
Procedures	81
• Introduction	81
Seven stages of qualitative interview research	81
• Stage 1. Thematising	81
• Objecting objects change research	87
• Stage 2. Designing the interview study	90
• Stage 3. The interview situation	101
• Ethical aspects of interviewing	106

CHAPTER 5: RESEARCH METHODOLOGY II

Introduction	115
Seven stages of interview research continued	115
• Stage 4. Transcription	115
• Stage 5. Analysis	121
• Stage 6. Verification	126
• Stage 7. Reporting	132
• Other analytical techniques	137
• Summary remarks	146

CHAPTER 6: ANALYSIS I	
Overview of the analysis	148
• Analysis I: Adaptive management	148
• Analysis II: Regional strategy and NRM	150
• Analysis III: A moment of concrescence	151
• Analysis IV: Translation/transformation of policy	151
Analysis I: Adaptive management	153
• Brief survey of the literature	153
• Procedure	159
• Results	160
• Where to for adaptive management	182
CHAPTER 7: ANALYSES II & III	
Introduction	188
Analysis II; The regional strategy	188
• Summary remarks	197
Analysis II: Natural resource management	198
• Summary remarks	207
Analysis III: ‘Life is robbery’: Analysis of an adventure	207
• A moment of concrescence	208
• Intuition	212
• Summary remarks	213
CHAPTER 8: ANALYSIS IV	
Introduction	215
The headwaters of federal reform	219
• In search of the nectar of on-ground	224
• The ebbs and flows of power and other actors	229
• Personae and patronisation	232
• Summary	241
• The big picture	243
• Levels	246
• Silos	251
Discussion	258

Conclusion	267
CHAPTER 9: CONCLUSION	269
REFERENCES	280
APPENDICES	
• Appendix I: Participant information sheet	296
• Appendix II: Interview schedules, 1, 2, 3	298
• Appendix III: Extended definitions of some terms used	304
• Appendix IV: Abstraction and meaning condensation	307
• Appendix V: Abstract of Question 10	308-9
• Appendix VI: Permissions from copyright owners	310

List of Abbreviations

ALD Alcoholic Liver Disease

ANAO Australian National Audit Office

CCC Western Australian Corruption and Crime Commission

CCMA Corangamite Catchment Management Authority

CONRACE Council of Natural Resources Agency Chief Executives

COAG Council of Australian Governments

CTG Central task group

DAFF Department of Agriculture, Fisheries and Forestry Environment. Formerly Department of the Environment and Water Resources, now the Department of the Environment, Water, Heritage and the Arts

DEC Department of Environment and Conservation

EPA Environmental Protection Authority

JSC Joint Steering Committee

LCDC Land Conservation District Committee

NAP National Action Plan for Salinity and Water Quality

NCP National Competition Policy

NHT Natural Heritage Trust

NRM Natural Resource Management

NRMMC Natural Resource Management Ministerial Council

PIMC Primary Industries Ministerial Council

SRT Swan River Trust

STS Science and Technology Studies

Lists of Tables and Figures

LIST OF TABLES	Page
• Table 1: Block models	32
• Table 2: Organisation as process	65
• Table 3: Discussion with a member of a regional body	95
• Table 4: Ethical aspects of interviewing	107
• Table 5: Validation at seven stages	130
• Table 6: Translation/transformation of interview data	142
• Table 7: Adaptive management; Scientific adaptive management	162
• Table 8: Adaptive management; Personal attribute	164
• Table 9: Adaptive management; Organisationally learning and improving	165
• Table 10: System-wide learning by practitioners	168
• Table 11: The language of levels	247
• Table 12: Object relations	277

LIST OF FIGURES	
• Figure 1: Five metaphysical positions on the concept of social structure	76
• Figure 2: Translation of the Boa Vista Forest	141

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Chapter 1: Introduction

Facing a new situation, a new event, a new piece of music or painting, a new piece of text, a set of forms that we have not previously encountered, we look over it or them puzzled. We need to discover a new way of looking at, over, or into such figures or sequence of forms, etc., to “see” in it or them the possibilities they might express or portray, we need a new way or ways of looking quite different from those we already embody. Thus at first, our inquiries begin with our disquiets, with a sense of a restlessness, a consciousness of not yet being wholly “at home” in our surroundings, a sense of a lack in oneself *without* any sense at first of what would remove that lack. This is the first step in the practice of our inquiries, not our theorizing. And our theorizing must find its guidance *from within* our initial attempts, not to get what we want, but to discover what it “is” that we want to get. (Todes, 2001, cited in Shotter, 2009, p. 241)

BACKGROUND TO THE RESEARCH

Australian environmental management and government programs

Because of geography, demography and history, natural resource management (NRM) in Australia is particularly vexed. In 2006, 85 percent of Australians lived within 50 kilometres of the coast with the rest of the continent sparsely populated, 60 percent of which is managed by a relatively small number of private landowners (Byron & Curtis, 2002). Great demands are placed on fragile urban and peri-urban landscapes where continued population growth and density along the coastline displaces biodiversity and alienates high value agricultural land, including that used for urban food supply.

Decision making on broad-scale, biophysical, long-term problems such as climate change, sustainability, and NRM is problematic for government as they are domains of policy transition. In ‘Australia 2020’ the ideas summit, (Commonwealth, 2008) natural resources were not treated as a stand-alone topic and a summit topic ‘Rural Australia’ was largely directed towards sectoral productivity. Unlike health for example, these domains are not areas of ‘settled policy’ (Miller, 1954) where the main legislation has been agreed and has become a ‘black box’ (Latour, 1987), the unshakeable basis for action.

The Australia Federation is comprised of six sovereign states and two mainland territories. The

Premier or Chief Minister of each, together with the Prime Minister of Australia, meet as the Council of Australian Governments (COAG). The Australian Capital Territory and Northern Territory have limited rights of self-government and a locally elected parliament: they are included in the term 'states' in this research.

Under the Australian Constitution the states are responsible for environmental matters except for international treaty sites and matters dealt with under Commonwealth legislation. COAG provides a forum for federal discussion of cross jurisdictional and sectoral matters, such as environment or agriculture.

COAG initiated the Natural Heritage Trust (NHT) to encourage '*a more rapid and effective shift to ecological sustainability in Australia*' (Department of Primary Industries and Energy, & Environment Australia, 1997, p. 1, emphasis in text). Under the provisions of the *Natural Heritage Trust of Australia Act 1997*, NHT1 (1996-97 to 2001-02), \$A1.5 billion was allocated to NRM and environmental activities.

The next round, NHT2 (2000-2008), originated when COAG endorsed a national action plan (NAP) addressing the natural resource issues of salinity and water quality, principally dryland salinity, in 21 selected areas. This was enabled by an intergovernmental agreement and bilateral agreements between the Commonwealth and each state government. COAG agreed that the NAP would build on the achievements of NHT1, together with state-based NRM initiatives, to enable and motivate regional communities to coordinate and target action to address problems of salinity and water quality across river basins (catchments). COAG agreed that programs would use regional strategies/plans as foundational and would incorporate adaptive management.

NHT2 comprised three distinct programs namely the National Action Plan for Salinity and Water Quality (NAP) the Extension to the Natural Heritage Trust, and the National Landcare Program which continued a long-standing program directed at sustainable farming practice. The programs were aimed at protecting and enhancing Australia's biodiversity; the viability of rural and regional communities and industries; and reversing or ameliorating land and water quality damage from salinity. Secondary (human induced) salinisation is a major national environmental problem affecting sustainability of Australia's agricultural production, conservation of biological diversity, water quality and urban water supplies, and the viability of infrastructure and entire regional communities. Land and water degradation alone then cost about \$3.5 billion annually (Australian National Audit Office [ANAO], 2004-05) and would continue to increase resulting from past actions, irrespective of planned interventions.

At a total of \$2.7 billion NHT2/NAP was the largest financial commitment to NRM by the federal government in Australia's history. Matching funds and in-kind contributions from other sources such as the states, local government and industry were additional. NHT2 relied heavily on volunteers and landholders who provided resources in cash and kind estimated at about three times the 'formal investment funding' (Keogh, Chant & Frazer, 2006, p. 7).

There was wide public support for more collaborative, and devolved regional delivery of NRM programs (Wonder, 2000) subsequently adopted in NHT2/NAP with 56 regional bodies set up nationally. These were based on river basin or bioregional boundaries. The Swan Catchment Council, later Perth Region NRM, was one of six in Western Australia.

NHT2/NAP answered some problems. From a national government perspective NHT1 was fragmented lacking broad scale oversight and clear connections between programs and policy goals and objectives. A mid-term review of NHT1 in 1999 stated that contemporary NRM required 'comprehensive strategies at both the national and regional level to develop new sustainable land use and land management systems that will be able to meet environmental, economic and social goals' (Howard Partners, 1999, p. 5 cited in ANAO, 2007-08, p. 41). The ANAO concluded that the regional focus of NHT2/NAP suited different regional circumstances and enabled coordination of actions over a larger area than the local community approach of NHT1 (ANAO, 2007-08, pp. 41-42). Social, economic and environmental aspects could be integrated and be more strategic and results oriented. While there was no cost benefit analysis of the proposed delivery model, 'it was based on lessons learned from the earlier NHT1 and widespread consultation with stakeholders' (p. 3). The tension begins between locality/materiality, that is, relatively more local and on-ground NRM, and the more circulatory and relatively universal broad scale oversight.

Other problems were flagged. 'At the commencement of the NHT2 and the NAP there were formidable risks to the achievement of intended outcomes' (p. 17). In particular, success depended on regional bodies' knowledge and experience, data available to them, and knowledge of governance. Some regional bodies had little or no previous experience in administration of this type and scale, or were started almost from scratch for example, the Swan Catchment Council. Even so, the well-established and well regarded Corangamite Catchment Management Authority (CCMA) was challenged by the timing and the comparatively massive scale of the funding (P. Codd, personal communication, April 3, 2006).

Each regional body developed a regional strategy based on their priorities to improve natural resources in their catchment. The strategy was accredited by the Commonwealth and state governments for what was termed investment funding: the commercial language used in official documentation was noteworthy. The planning model, routinely used in state and federal public services, was based on statements of tasks sequenced as actions to outcomes. Performance indicators show the extent of achievement of program goals. However, some regional bodies found this key step hard to master, which from pre-thesis informal discussion was either because it was made unnecessarily difficult, or based on my experience facilitating strategic plans, the first few are always hard.

Regional bodies were also hindered by comprehensive underestimation of the time needed to accomplish partnerships and working relations (Marshall 2008, Johnston, Green, Stephens, Syme, & Nancarrow, 2006, Sinclair, Knight Merz, 2006). There were pressures for timely delivery; unclear expectations; recognition of lack of capacity but tardy response in rectification; and lack of consistent direction (ANAO, 2004-05). Finally the long term aim of NAP to stabilise water quality was unachievable in the program's eight years (ANAO, 2004-05).

Disagreement between the State of Western Australia and the federal government resulted in Western Australia signing up last—two years after the first state—for NAP funds. The Commonwealth did not recognise the state's previous spending on remediation of dryland salinity which the state thought was unfair and penalised its proactivity compared to other tardier states which were then better funded. The delay hampered five of the six regional bodies in acquitting funds and getting results within the five year program. Perth Region NRM was not affected as it did not receive NHT2 funding.

Nationally, administration of the regional bodies included statutory authorities, incorporated associations, limited companies and bodies corporate (Robins & Dovers, 2007). Statutory authorities reported directly to a minister of the crown, that is, they were state agencies. In Western Australia, the six regional groups were volunteer, incorporated bodies, legally independent of the state and federal governments. This made them of research interest as collaborators with government but more vulnerable to funding cuts by change of federal programs as they were directly funded, by-passing state agencies.

The first research interview (17 December, 2008) was conducted a year after a new national Labor government took office on December 3, 2007 after a long period of Liberal incumbency.

A new Western Australian Liberal Government on 23 September, 2008 took office after a long period of Labor incumbency. A majority of states and territories including Western Australia, had signed or were about to sign, bilateral agreements with the Commonwealth in anticipation of program continuation in 2008-09 of the \$A2billion NHT3, which became void with the new government. 'Caring for Our Country: Outcomes 2008-2013' (Australian Government Land and Coasts, 2008) was announced in July, 2008. The delay caused a hiatus, worsened by expectations of continuity. Perth Region NRM faced trading when insolvent (Dr B. Hamilton, personal communication, 10 February, 2008).

This was an opportune time for policy and actor -network research as events perturb actors and make them do things (Latour, 2005). 'There is no other way to define an actor but through its action, and there is no other way to define an action but by asking what other actors are modified, transformed, perturbed, or created by the character that is the focus of attention' (Latour, 2004, p. 122).

Western Australian Environmental Management on the Swan Coastal Plain

Most of the Western Australian population lives on the Swan Coastal Plain, a narrow strip of land between the Darling Scarp and the Indian Ocean. Perth, the capital city, has the most environmental issues in Western Australia (Environmental Protection Authority {EPA}, 2007). For example, in the Perth metropolitan area, more than 80 percent of native birds face extinction by 2050 if land clearing continues at the current rate (Davis, Brooker & Roberts, 2008), not to mention decline in biodiversity.

Perth's pattern of growth has placed enormous pressure on the land resource, with increasing land use conflicts [...]. Continued growth will further increase pressure on already stressed native vegetation, wetlands, estuaries, beaches and neighbouring marine ecosystems. The impacts of unchecked urban growth are increasingly of concern [...]. (EPA, 2007, p. 195)

Proximity to urban settlement is not the only reason for extinction with up to 30 percent of taxa of birds Australia-wide threatened (Department of the Environment, Water, Heritage and the Arts, 2009). This single instance indicates failing ecosystem services; reduced capability of the land, air and water for human settlement; and not least, amenity.

Perth Region NRM's jurisdiction covers the more urbanised portion of the Avon/Swan river catchment, of about 120,000 square kilometres. The catchment was divided into two, with two catchment management bodies, to satisfy funding requirements for NAP.

The Swan River's inner metropolitan reaches are Perth city's centrepiece but the river is in 'serious environmental decline' (Conservation Council of Western Australia [CCWA], 2013, unpaginated) with nutrient levels roughly double those for a healthy river. The chief sources are thought to be fertilisers used in both agriculture and urban greening, which dissolve and flush through the river system. Lower rainfall and warmer temperatures attributed to climate change contribute to worsening algal blooms and fish kills.

River management evolved from the 1940's philosophy of managing minor public works, cleaning up the foreshore, and issue of permits for industrial discharges, to emphasis on conservation and management of the river. The *Waterways Conservation Act, 1976* set up the Waterways Commission to coordinate and streamline administration arising from the large number of bodies with overlapping responsibility for river management, development applications in particular, and also to involve the local people. A decade later, a legislative review (Zelestis, 1987) found that agency responsibilities were not clear cut. Development applications in particular were not coordinated between agencies and consequently total impact was not assessed. Twenty-five years later, a major review of the Western Australian public sector, again found unclear agency responsibilities including those concerned with Swan River management (Western Australia, 2001). At about the same time, with particular reference to water quality management in the Swan-Canning river catchment Gunningham, Rutherford, Gordon and Eames (2003) state that:

There is no doubt that institutional arrangements for drainage and water quality management in the Perth metropolitan region are highly and [...] unnecessarily complex. This is the result of an institutional culture in which there is a relatively weak whole-of-government-perspective (at least in the natural resources area) and where strong agency accountability has taken a back seat to "bureaucratic voluntarism". This means that in reality coordinating policy and programs more often than not has relied on achieving consensus between *substantially independent bureaucratic entities* rather than implementation of clear statutory, policy and program delivery roles. (p. 62, my emphasis)

Gunningham and Sinclair (2004a, 2004b) found similarly. Legislative attempts at *concerted* remedial action were stymied by equivocal definition of agency roles and weak regulatory enforcement (Gunningham et al., 2003). These authors applauded Hick's recommendations as 'dealing with precisely these sorts of problems' (p. 62), some of which had been partly

implemented at the time of the SNA study¹. Creaking legislation could be included, with the *Rights in Water and Irrigation Act 1914*, amended from time to time.

The quotation from Gunningham et al.(2003) summarises some prevalent assumptions. First an ontological one, namely agencies are *entities* to which the inevitable solution is more coordination *between* them. Chapter 2 uses a recent case study, ‘Network governance and environmental management: Conflict and cooperation’ (Robins, Bates & Pattison, 2011) to examine the relations between Perth Region NRM and other actors in governance of the Swan River, in a similar problematique to that identified by Gunningham et al. (2003, 2004a, 2004b).

Robins et al. (2011) used social network analysis (SNA) of operational executives to study the focus question on trade-offs between amenity and development of the most desirable and urbanised portion of the Swan River. To remedy the uniquely high level of conflict found, these authors call for shared goals, values and beliefs through a ‘macroculture’ (Jones, Hesterley & Borgatti, 1997 cited on p. 1297) as a stabilising tie between the study participants, the unit of analysis, conceptualised as organisational representatives. The study raises a number of issues.

The question, namely how organisations or humans as self-sufficient entities relate if they are ‘dislocated from all other objects (or subjects)’ (Halewood, 2011, p. 28) emerges here. Information cannot pass between objects. For example, how shared goals and values, these ‘immaterial substances’ (Weik, 2006, p. 3), can connect anything, is important in a thesis on relations. There is an agency problem to which actor-network theory provides an alternative in which connectivity, as translation (Latour, 1986) or prehension (Whitehead 1929/1960) is definitive and not an addition to solve a joining problem between substances. This problem is discussed in Chapter 4.

Robins et al. (2011) presume that if the organisational goals, the legislation and its enforcement are focussed, the weak administration identified by Gunningham et al. (2003) will be substantially ameliorated. That is, this multiplicity of actors, including objects such as legislation can be made single, coordinated into one meta-thing. But what if each of these

¹ In late 2003 the Department of Environment, Water and Catchment Protection was to be formed by merging the Department of Environmental Protection, the Water and Rivers Commission and the Swan River Trust. It was not legislated, but instead the Department of Environment was formed and was to be legislated in 2004. The Department of Environment and Conservation (DEC) was formed on July 1, 2006 by amalgamation of the Department of Environment and the Department of Conservation and Land Management. The Department of Water, formed in 2005, comprised some of the functions of these two. It had three ‘permanent’ CEOs and extended periods of CEO acting arrangements from 2005-2012.

bodies was dealing with a different river, not just as a perspective but performing it as a quasi-object (Serres, 1982), a possibility pursued in Chapter 2.

While not specifically attributed to the largely government presence in the SNA, it is suggested that there is a connection between the conflict found by Robins et al. and the dilemma posed by the trade-offs in their research focus question. This conflict was likely not an isolated instance. Hoggett (1996) suggests that public purposes are continuously contested and public organisations and public officials must deal with resulting ambivalence and dilemmas. How officials undertook this relational role is amplified by my research.

Intergovernmental and other relations in environmental management

Governance is defined as ‘collective decision making which includes public and private actors (Ansell & Gash, 2007, p. 545) and development of ‘governing styles in which *boundaries* between and within the public and private sectors have become *blurred*’ (p. 545 citing Stoker, 1998, my emphasis). The public and private sectors are conceptualised as separate objects with an increasingly permeable border populated by public and private actors who do the talking.

Knowledge of resource governance regimes (Pahl-Wostl, 2009) is quite limited. By ‘governance’ Pahl-Wostl means the relations between government and civil society. Studying governance is difficult because of its diffuse meanings and overlap with terms such as partnerships, collaborations, and ‘relational governance’ intended to reduce the weight of ‘contractual governance’ (Productivity Commission, 2010, p. 317), improve relations with service providers, and ‘build a stronger sense of trust’ (p. 318). Governance is described in multiple ways as what people actually *do*, that is, it is not a perspective, while at the same time it is also single, a collecting term, or recognisable keyword for those writing about it, and so stable. How governance is done is paradigmatic for similar ‘collecting statements’ (Latour, 2005, p. 231) such as adaptive management, resilience and sustainability or even nature and society.

This dissertation studies an example of governance where two levels of government contracted each other and then Perth Region NRM, a collaborative of sub-regional groups, to undertake environmental management planning and works in metropolitan Perth and the peri-urban area. I first used the phrase ‘levels of government’ unquestioningly and vaguely, as discrete entities, possibly tiered hierarchically. Others do too.

There has been comparatively little research on policy level collaborations (Robinson, Margerum, Koontz, Moseley & Lurie, 2011, p. 849, Heikkila & Gerlak, 2005, Robinson, Eberhard, Wallington & Lane, 2012) in environmental management, with most attention paid to local collaborative groups (Sabatier, Focht, Lubell, Trachtenberg, Vedlitz, et al., 2005). Levels are pervasive and integration, that is, ‘connection between and coordination across different levels of governance’ is problematic (Lockwood, Davidson, Curtis, Stratford, & Griffith, 2009, p. 174, see Table 1). ‘Severe problems of policy and implementation fragmentation [...] exist at the highest policy-making levels within the Australian government, between the central and subordinate levels of government, across civil society and industry, and generally throughout the system’ (Lane & Robinson, 2009, p. 28). All these authors suggest ‘vertical and horizontal’ (p. 71 and p. 28 respectively) co-ordination or integration in the system of natural resource governance. As mentioned above, if the question is posed as one of connectivity between individual entities, or scales, then the answer is coordination by one means or another.

Central to the thesis is actor-network theory, particularly Latour’s version. Levels now require explanation rather than being taken-for-granted entities which need integration. ‘Latour’s central thesis is that an actor is its relations’ (Harman, 2009, p. 7). Use of a metaphysics in which there is *nothing but* relations, solves the problem of agency as both humans and nonhumans may be actors in the process of becoming. There is no need for messy links between self-sufficient entities to make them do things. They are joined by translation which occurs: ‘In place of a rigid opposition between context and content’ (Latour, 1999a, p. 311).

Actor-network theory also emphasises the difficulty of producing an enduring network, as these translations are fragile requiring work to maintain. How connections were made between governments and Perth Region NRM and the role of nonhumans as stabilisers is the main subject of the thesis. What I found were some frustratingly difficult ideas are addressed in examples which at the same time explore an unusual non-Newtonian metaphysics used by Latour who draws on Whitehead’s ‘philosophy of organism’ (1929/1960)².

Underlying all, and not noticed enough in environmental studies is Whitehead’s bifurcation of nature, (1920/1964, 1929/1960) which Latour neatly summarises as the choice between

² On the extent of this influence, Harman states that: ‘Similarities between them are as obvious as they are pivotal’ (2009, p. 101). Both are occasionalist philosophers but ‘the greater secularism of Latour’s theory of relations’ (p. 102) sets him apart from Whitehead who uses God, in the tradition of occasionalism. I have principally referred to Latour (2005), and found him to be consistent with what I have read of Whitehead.

'meaning without object and objectivity without meaning' (2005, p. 205). Objects, nonhumans and nature are on one side separated from subjects, humans and culture/society on the other (Latour, 1993). For example, Pahl-Wostl working on the 'soft' side of environmental management states that between the 'hard' and 'soft' sciences the 'dichotomy is resolved if the dialectic and dual nature of knowledge is explicitly taken into account' (Pahl-Wostl Craps, Dewulf, Mostert, David Tabara and Taillieu, 2007), no small task as it is not the epistemology which needs to be taken into account but the metaphysics.

This is important because NRM, crucial to life itself, is hamstrung by the bifurcation of nature, the separation of reality into two domains. In the practice disciplines the segregation of the social and biophysical sciences results in practitioners having to create some sort of multidisciplinary armistice. For example, a recent review of water governance and survey of practitioners calls for more access by the social sciences to the 'on-going dominance of the "hard sciences" within the water governance framework' (Wallis, Ison & Godden, 2012, p. 2). Contrarily, many 'hard' scientists moved to the social sciences to 'explore sustainability questions from an interdisciplinary and systemic perspective' (p. 2). Institutional support for collaboration was 'in reality, limited' (p. 2). A shared language is proposed.

In NHT2/NAP, it was generally agreed that community participation, capacity building, institutional frameworks and awareness-raising were successful, but these were downplayed when compared with outcomes with strong scientific backing which were numerically measured and showed direct relationship between a given level of intervention and resource condition change (Kingwell, John & Robertson, 2007, Sinclair, Knight & Merz, 2006, Marshall, 2008). The two Commonwealth departments responsible for NAP included in their annual reports qualitative results, such as case studies and narratives about how activities changed behaviour and participants learned, as evidence of achievement. However the ANAO found that; 'the reported information lacked the necessary trend or percentage data or analysis needed to link the output(s) with actual progress towards the programs' outcomes (2007-08, p. 100). A distinction is made between a constructivist approach to adaptive management and social learning, emphasising that sustainable landscapes are a property of social process, (see for example Ison, Steyaert, Roggero, Hubert & Jiggins, 2004) and the preferred numerical emphasis. There is no doubt that the bifurcation of nature is at play and it would be instructive to consider the series of NHT programs as a chapter on the politics of nature (Latour, 1994, 2004, 2005).

Whitehead's bifurcation of nature offers a metaphysical reason for the segregation, namely 'a case of radical incoherence which literally plagues modern thought [and] is an ever-renewed source of problems of our own making' (Stengers, 2008, p. 98). Actor-network theory and Whitehead's philosophy of organism do not have all the answers but they enable different questions to be asked about this matter of concern (Latour, 2008).

OVERVIEW

Research objective and research questions

The research objective of this exploratory study was to describe how two levels of government and an incorporated catchment body (Perth Region NRM) implemented adaptive management in an environmental collaboration. The research question was: 'How do the theories of action between government and regional bodies influence their relationships?' The objective and question are important theoretically for a number of reasons reflected in different and overlapping disciplinary areas of research.

- Collaborations are of interest in public policy as a form of governance and the decision about agency is pivotal. Relations in natural resource management *may* be studied as constructivism, but are unusual using objects as agents. Actor-network theory provides an alternative which does not bifurcate nature.
- Research on relations between senior officials in Australian environmental management is sparse because of local, on-ground emphasis directed at normative or practical solutions to problems, rather than examining *how* they are performed throughout the total policy chain.
- Local groups are thought to be dominated by government and it may be asked if this is so.
- Interorganisational relations are predominantly regarded as links between entities, that is, organisations or levels rather than as processual, or better, endogenous connectivity (Hernes & Weik, 2007, see Chapter 3).
- The metaphysics and ontology of actor network theory is difficult to understand but provides a rich alternative to the division between nature and culture.
- Adaptive management was originally thought to be one thing, namely a particularly well-articulated version of environmental management which however, wasn't being performed very well to the detriment of the natural resources and the frustration of the people concerned (Allan & Curtis, 2005).

The statement of the research question presupposed that:

- culture and nature were separate, and
- a relation is a tie between entities—organisations in this instance—made by humans.

Constructivist ontology was therefore appropriate. The theories of action referred to distinctions made by Argyris and Schön (1978) in their studies of organisational learning and have been taken up in natural resource management through social learning and adaptive management, discussed in Chapter 6. They acknowledged their debt to Bateson (1972) who used the Theory of Logical Types (Whitehead & Russell, 1910-13/1957) to develop a hierarchy of types of learning. Their main concern was changing individual and organisational values and overt reference to logical types was dropped (Argyris, 2003) but has lingered in their ever-green learning loops (Easterby-Smith, Antonacopoulou, Simm & Lyles, 2004).

Early in the research, I found Perth Region NRM was not the entity I had thought and the reason was likely Whitehead's fallacy of simple location (1920/1964, 1929/1960). Perth Region NRM was not simply located in an outer suburban office but also influencing through 8000 volunteers operating in an area about one third of the size of Belgium. The difference is described in detail in Chapter 3 but for now, this and another instance, namely 'case study' led me to think that 'relations' might not only be between humans, but also nonhumans.

The research did not start out this way but the research question does not preclude it and the different emphasis enhanced the exploratory intent of the thesis. The aim of researching government's role in collaboration with a citizen group (Perth Region NRM) stayed the same.

By now a reader may be wondering when nature itself, the actual ecosystems, will be mentioned and how these may be conserved, better utilised or improved. In Robins et al. (2011) the Swan River as a material, particular and local thing was hardly mentioned. Participants didn't use words like 'phosphate' or 'drain' but a 'rather general or vague' (p. 1301) language. The senior people I interviewed did not talk much about this material river either. Aspects of the material river were simply lost in translation from world to word. *How* the on-ground, that is, the more local, particular, material, multiple and continuous, becomes separated from the more compatible, standardised, textual, calculated, circulatory and relatively more universal, to paraphrase Latour (1999a, p. 71) is, I now realise, the difference between a bifurcated and an unbifurcated nature.

Terminology and glossary

Whitehead's metaphysics is unusual and there does not seem to be a name in more general use for it. Weik (2011) following Hoffman, Trappe, Halbfass, Grünewald and Abel (1992) refers to Whitehead as a 'natural realist' insofar as 'there is no difference between humans and the entities surrounding them' (p. 660). 'Natural realist' is apt but in environmental studies may imply to do nature outdoors and in social science, naturalistic research, which has little to do with nature outdoors except as ethology. Weik refers to the metaphysics earlier as 'a sort of naïve realism' (2006, p.6) which is unique and hints at the literalness which Latour (2005) espouses as necessary so as to not miss actors and *their* metaphysics. 'Naïve realism' is used here to refer to actor-network theory and Whitehead's philosophy of organism (1929/1960) because it won't be confused with nature.

A problem with actor-network theory or Whitehead for that matter, is understanding the language. Czarniawska (2006) for one is dismissive of Latour's neologisms which I found difficult but necessary to understand actor-network theory. They also prevent slipping back into old interpretive habits. It is also necessary to realise that the same word may have two uses made clear by this alternative ontology. Bateson (1979/1988, p. 133) contrasts two logical types of crime: punishing instances of crime will never extinguish crime as 'a way of organising' (p 133) which is of a different logical type, for which there really should be another word. Occasional scare quotes have been used to draw attention to this possibility.

Different terms used have been explained in the text along the way. As a reader starting from scratch I found understanding was not helped by Latour's listed definitions (1999a, 2004) because while lucid, they assume an absent context which gradually becomes familiar with exposure. In Appendix III extended definitions are given of major terms used including 'metaphysics', 'ontology' 'proposition' and 'articulation'.

OUTLINE OF THE THESIS

Introduction

Chapter 2 considers the SNA of amenity and development of the Swan River which revealed an unusually high proportion of what Robins et al. (2011) termed 'difficult and crucial' relations throughout the network but highest in dealings by their 'central task group' of government organisations. At a later date, a member of Perth Region NRM with expertise and executive

experience in catchment management verified some of the findings suggesting that conflict was not only at the time of the study.

Contrary to the view that community NRM groups are oppressed by government, Perth Region NRM was shown as a member of the ‘advocacy group’ in the SNA, alongside agencies such as the Department of Premier and Cabinet, lead agency in Western Australia. My research also showed that Perth Region NRM was thought by one participant to have become ‘very, very assertive and aggressive’ (interview).

A language of object relations is evolving, but it is quite difficult to understand (see for example Law & Singleton, 2005). Quasi-objects (Serres, 1982) are introduced as a simple(r) start and the river as one of these makes the ‘amenity and development’ relations. When there is a water quality scare it is proposed that the one—in this case an organisation—left holding the ball, is culpable.

Chapter 3 traces the evolution of the metaphysics of the research through early encounters with objects and Whitehead’s ‘fallacy of simple location’ (1920/1964, 1929/1960). The researcher started out thinking she was navigating between known landmarks by following instructions on how to do a case study. However the instructions were inconsistent and confusing, and led to very different kinds of case studies. ‘Case study’ was not only *not* a single entity performed by a single method, but encompassed multiple different performances which could also entail different and conflicting ontologies.

Presuppositions about the case study object, namely Perth Region NRM, in particular its size and location were questioned, as it was these which needed to be determined, rather than assumed. They were ‘objecting objects’ which did not fit the researcher’s preconceptions of them. Latour (2005) refers to objectivity as giving objects ‘a chance to *object* to what is said about them’ (p. 125, emphasis in text). An early decision was made to take them into account.

The fallacy of simple location was used to understand what happened. Whitehead’s early and later versions of it are outlined. It is then described with reference to a governmental expert committee’s negotiations on potential public health dangers arising from the use of intrauterine contraceptive devices (IUDs) (Dugdale, 1999). The committee discusses IUDs but no actual entity seems to be passed around or of any physical importance, that is, located. Dugdale discusses how different *versions* of the object were performed by different members of the

committee: note *performed* not interpreted, conceptualised or regarded. Other objects are considered in the same way in Chapters 7 and 8.

A number of research papers have been used as quasi-objects to enable me to ‘discover what it “is” that I wanted to get’ (Todes, 2001, cited in Shotter, 2009, p. 241). They were maps of some vaguely apprehended territory which were finally understood and then used to navigate. Dugdale (1999) enabled a grasp of the idea of an object being single and multiple. A four sector typology of organisation as process (Hernes & Weik, 2007) enabled comparison of four kinds of ways in which entities are stabilised in organisational analysis. Actor-network theory, that is, process as connectivity, is also introduced in Chapter 3.

Process as connectivity, or bootstrapping of which actor-network theory is an example, is examined through an analysis of a Swedish public health program (Lindberg & Czarniawska, 2006) at various points in the thesis. Latour’s translation (1986) was used to study a successful government interorganisational initiative—one of the few as they note—the ‘chain of care’, which was established and incrementally became the larger and more generalised ‘model of cooperation’. Czarniawska (2004b, 2008) conceived ‘action nets’ as an alternative to actor-network theory in organisational studies and her concern is more human-oriented or cultural than Latour’s. Other examples of objects namely a shape shifting water pump (de Laet & Mol, 2000), or ‘mutable mobile’, and ‘immutable mobiles’ (Latour, 2005, p. 223), are touched on, together with Whitehead’s example of the Greek language as an event or ‘society’, in the life of man (1929/1960).

Methodology

The problems of establishing a method are discussed in Chapter 4. Using as a focus question ‘do social structures exist only in the mind’, Weik (2006, p. 2) addresses the advantages and disadvantages of five derivative metaphysical positions, four following Descartes and the fifth she terms Medieval Realism, or naïve realism, set out in Figure 1. Whitehead and Heidegger say ‘no’, social structures do not exist only in the mind. Weik considers: ‘the metaphysical assumptions as “premises” in the logical sense on which rest “conclusions” forming the body of the respective social theory’ (p. 1). They each have their ‘potentials and limits’ (p. 1).

An advantage of naive realism is that the theory of action is not now confined to the mind of individual agents who then somehow have to achieve collectivity (Latour, 2005). A plus for

actor–network theory was that the research topic was on relations and a more incisive, inclusive, and relatively novel understanding of these was promising.

A disadvantage is that there is no well signposted methodological trail. Method as customarily understood in the social sciences is Cartesian (Weik, 2006) and so it is not yet a recipe, even if that were usual as described in Chapter 4. Latour (2005) suggests ethnographic description and Ruming (2009), a geographer, ‘follows the actors’ via sampling. Michael (2004) and Halewood and Michael (2008) have described ‘tentative’ (p. 6 and p. 31 respectively) approaches, the former an analytical model and the latter to operationalize Whitehead’s ontology for sociology.

In Australian NRM there has been limited engagement with actor-network theory. Lockie (2007) asks how such innovative social science theories could be used practically in determining environmental decisions and concludes that impact assessors could speak on behalf of creatures, as essential to sustainable NRM as people (see also Ruming, 2009). Harrington, Curtis and Black (2008) contrast communities as entities, predominantly place based, with their different kinds of communities as ‘actors that operate across multiple scales [...] with vertical and horizontal connections’ (p. 210). Whitehead is not referred to but simple location is the topic.

Another disadvantage is that the researcher is not distinct from the research (Ruming, 2009), a shock to bio-physical scientists. Validity is then conceptualised not as non-involvement or even impartiality, but whether the research product is a mediator, that is, makes someone or something act. Having said that, Latour is only too aware of the role played by objects in stabilising research.

From the outset semi-structured interviews had been proposed as the primary method and many had already been undertaken while the ontological reappraisal was in progress. An alternative such as shadowing senior public servants, more congenial to actor–network theory, was an unlikely option in any event as there was uncertainty about the extent of any access at all.

Chapters 4 and 5 outline the seven stages of an interview study (Kvale & Brinkman, 2009) which provide a comprehensive translation/transformation of the research from conceptualisation to final report. Well executed, they consider that their craftsman approach to interviewing is a research end in itself rather than a preliminary to survey research. While they emphasise phenomenology, they acknowledge that interview data is commonly used for other purposes. Actor-network theory *may* be considered as a branch of phenomenology and so

interviewing is a consistent method so long as ‘objecting objects’, that is, actants, are admitted symmetrically into the account. To Latour, phenomenology does not acknowledge objects enough (2005).

These usually silent beings need to be activated which they were at a troubled time of transition from NHT2/NAP to Caring for our Country. Research interviews commenced mid-December 2008 and were largely completed by March 2009. In any event, the conflict documented by Robins et al. (2011) in research completed in 2006, suggested that something was going on between the state agencies at least.

Different kinds of interviews are used for different purposes with for example, variations in styles of questioning and in transcription depending on the envisaged use. Details of application of the first three of the seven stages of the method, namely ‘Thematising’, ‘Study Design’ and the ‘Interview Situation’ are set out in Chapter 4 together with ethical requirements at each stage and Curtin University’s policy requirements.

Kvale and Brinkman suggest that the researcher should be expert in the field. While the philosophy, method, and some specifics of the set of practices considered as NRM were new to me, I had substantial experience as a relatively senior public servant with expertise in policy formulation and analysis, and tertiary education in agricultural science, environmental planning, and management.

In Chapter 5 the last three of the seven stages, namely transcription, analysis, verification and reporting are described. Transcription quality is ‘seldom’ (p. 177) addressed. Aspects of it are considered as part of a Latourian translation/transformation rather than a discrete step, which is novel.

In ‘Stage 5, Analysis’, bricolage is considered as an eclectic and ‘quite common mode of interview analysis’ (p. 233). The bricoleuse ‘moves freely between different analytical techniques and concepts’ (p. 233) and uses ‘whatever tools happen to be available, even if the tools were not designed for the task’ (p. 233).

Bricolage as a craft approach is as much an attitude as a technique. Bricoleurs ‘use what they find’ (Chia & Holt, 2009, p. 171). These authors in organisational strategy refer to Ingold’s wayfinding, or feeling your way, or ‘quite simply, *mapping*’ (Ingold, 2000, p. 231, emphasis in

text)³. Ingold distinguishes what are in my view three orientational phases the first of which is this knowing as we go, ‘neither making a map nor using one’ (p. 231), but ‘a universal expression of individual existence’ (Wood, 1993, p. 50, cited in Ingold, 2000, p. 231), beautifully captured by the quotation heading this chapter. The next is ‘map–making’, the recapitulation of regularities, and then ‘navigating’ between these now expected regularities in the translation of world to map or inscription (see Figure 13.4, p. 234). The becoming less local, material and particular and more textual, circulatory and relatively universal via cartography, is a nice example of practical abstraction, discussed next. Familiarity breeds stabilisation, circulation and black boxing of the former details as an abstraction. This smooth translation is something that we do continuously in experience but is surprisingly hard to ‘get’.

Abstraction as a technique is discussed and used. Abstraction in the sense of for example, the abstract of an academic paper being like the smaller of the larger nest of Russian dolls is common enough. Using multiples of them in a series, Whitehead’s ‘Method of Extensive abstraction’ (1920/1964, p. 65) is something he regards as consistent with common sense

Kvale and Brinkman as phenomenologists and psychologists emphasise interpretation and meaning. I wanted as little interpretation as possible to avoid, to repeat, ‘meaning without object’ (Latour, 2005, p. 205) but some interpretation is acknowledged as inevitable. In the practice disciplines of health sciences, Sandelowski (2000, 2010) proposed qualitative description as a low inference, naturalistic method. This was encouraging as description was mentioned and it is surprisingly hard to find out how to go about one (see Latour, 2005, Bateson, 1979/1988) although Latour advocates action-filled description as a research result (2005). Even on something as obvious as description there was no clear path.

Another orientating piece of research is Latour’s translation/transformation of the Boa Vista forest (1999a). Figure 2 (Chapter 5, p. 141) shows a Whiteheadian extensive abstraction, from on-ground to internationally published academic paper. Latour had philosophical aims in showing this abstraction from word to world but mine were to show the translation of a policy, NHT2/NAP, from first consideration by COAG to application. My intention was to find out how much policy was an incremental translation/transformation rather than something like a routine in which decision makers make ‘all the major decisions [...] in advance’ (Feldman & Pentland, 2003, p. 97): these authors don’t subscribe to this view of routines. In Latour’s

³ Henceforth ‘quite simply *mapping*’, ‘cartography’ and ‘navigating’ will refer to Ingold’s typology.

example shown in Figure 2, everything is present at every level, if only as a very little tip (Latour, 1999a, p. 70), that is, the vertex of the one end of the abstraction in the base of the other. A flow of activity actualises policy as a Whiteheadian society, addressed in Chapter 8.

This might seem fairly bold but actor–network theory is not worried by countless actors because most of them are black boxed, that is objectified, by a macro-actor, so that it acts as one. The macro-actor can only grow if it simplifies itself. ‘Hence a macro-actor is at least as simple as a micro-actor *since otherwise it could not have become bigger*’ (Callon & Latour, 1981, p. 299, emphasis in text) which makes it just as easy to study.

‘Stage 6 Verification’ and ‘Stage 7 Reporting’ conclude Chapter 5. Kvale and Brinkman draw on Latour (2000, 2005) to argue that interviewing is objective but strangely, considering Latour’s arguments in these, objects are not included. A key validation strategy from Latour (2000) namely ‘allowing the object to object’ (Kvale & Brinkman, 2009, p. 243, emphasis in text), solely concerns human objects. An objecting object can redirect an interview, that is, make it more real, more valid, by having been longer by extending the chain of reference, discussed shortly.

Following Kvale and Brinkman, reporting is based on the standard biophysical scientific format namely aim, method, results, discussion/implications. It implies hypothesis-driven rather than exploratory research, and caused problems with ordering because research seldom goes as planned (Czarniawska, 2004a). However the format served the same purpose for me that Latour describes when he drew a graph to start ordering the data disorder (Latour & Woolgar, 1979/1986). It made him feel better: cartography had begun.

Analysis

In Chapter 6 (Analysis I) the whole analysis is introduced and analysis of adaptive management described in detail and the notion of public officials as quasi-objects (Serres, 1982) or transitional objects is discussed.

Adaptive management was a principal in NRM and the bilateral agreements between the Commonwealth and the states for NHT2/NAP. However, subsequent major evaluations of NHT2/NAP hardly mentioned it which I found odd. Furthermore: ‘Although adaptive management is a *well-established concept* that has received significant theoretical attention,

there is limited evidence of its practical effectiveness' (Eberhard, Robinson, Waterhouse, Parslow, Hart, Grayson, et al., 2009, p. 1189, my emphasis).

Far from being a single 'well established concept' there were many notions of it in my research. Two participants suggested that it was included in documents either as a rhetorical flourish or a good idea, but most described either how they thought it was done or how *they* were performing it. These diverse descriptions suggest that first, like the IUD, adaptive management may act as a black box, being both single and multiple, enabling people to talk about it even though they perform—not conceptualise—it differently. Second, adaptive management is not only something local between people and landscapes, or over long periods of on-site and laboratory research, but was also regarded as part of the chain of translation of administration. Other versions from the literature are set out as a pilot study of it as a fire object.

In Chapter 7 (Analysis II) two objects are examined namely regional strategies and NRM using the IUD as prototypical and also Serres' quasi-objects (1982). Latour used quasi-objects for a time and then changed to actants and actors with a move more towards Whitehead's metaphysics in which his 'actual entities' or 'actual occasions' are foundational. I followed these actors to understand how regional strategies and NRM endured, informed by the single/multiple IUD thinking.

With hindsight and acquired capacity, I would choose to examine 'Perth Region NRM'. It was clear that there were different performances of it from inception, including my own as it made me the kind of researcher who is concerned with materiality and actor network theory (see Chapter 3).

Also in Chapter 7 (Analysis III) there was a moment of concrescence (Whitehead 1929/1960) meaning the becoming of actual occasions through prehensions to make a subject. In some way interview attention was captured by Caring for our Country: 'You might have noticed it's all over the desk' (interview). For over 10 minutes the interview had a different tone and involved me as a participant-observer rather than guide and interlocutor. This brief segment of my research revealed the 'co(a)gency' (Michael, 2004) of two humans, document-covered desk, telephone ringing on call back, and a blob on a map. It also demonstrates how the targets were identified by wayfinding and the gradual emergence through actual occasions of the participant as a navigating grant applicant.

The moment of conrescence, the story of the accounts process (pp. 171-179) and examples of public officials using ‘the art of separation’ between bureaucratic and some other self (Walzer, 1984 cited in du Gay, 2007, p. 4) (Analyses I and IV) were examples of research ‘nuggets’ (Shank, 2006b). These revelatory bits of data, in this case an off-topic excursion would ordinarily be disregarded, unless the researcher prospects for them. This simple procedure is theoretically important as it admits other members of the multiplicity, opening a black box, which ordinarily could be closed but are revealed obliquely (Chia, 2000) important in exploratory research.

In Chapter 8 (Analysis IV) the translation/transformation of NHT2/NAP from COAG to almost on-ground is outlined using interviews and secondary sources. While it may seem ambitious to try and track, there are surprisingly few people at the top of the hierarchy which should not be surprising. It is another thing, however, to say that they accordingly have attributes such as power. There were also comparatively few operational executives in primarily state and local government (Robins et al., 2011).

Shergold (Kelly, 2012) observed that COAG was most successful when the ‘high falutin rhetoric’ of policy was implemented in ‘bite sized chunks’ of reform. He thought that ‘muddling through’ (Lindblom, 1959, 1979) a phrase with a long provenance in public administration, best described what was happening. Processually muddling is akin to the bootstrapping of ‘endogenous connectivity’ (Hernes & Weik, 2007). ‘Muddling’ does not imply distracted administration, but wayfinding in uncharted territory where conflicting aims, values and beliefs, and understandings, not to mention fiscal imbalances and territorial differences, need to be negotiated in democracy, in Honig’s dilemmatic space. In the same way the IUD committee found its way through this space with negotiation and compromise.

‘They just don’t get what we do over here’ (interview). This could have been said from any standpoint but expressed the frustration of a Western Australian participant in my research at the east’s lack of understanding. Others referred to Commonwealth representatives’ incomprehension of the more particular, material, and local which hindered state negotiations. Some from the east discerned a state persona which influenced policy implementation.

It may be inferred that the policy level is an entity, discontinuous from other levels and more powerful than them, which I wanted to examine. Whitehead asks us to watch our own abstractions (Stengers, 2008) because an abstraction may be taken for instances of it, a different

logical type. Words like 'level' may persuade that there is an actual level, an object, rather than inquiring what and where *is* a 'level' and how it is performed and maintained.

Dissent and agreement was a theme in the thesis. At COAG there was a 'peculiar mix of mundane details and high principle [resulting in unpredictable swings from] unanimous and smooth agreement to rancour, threats and name calling' (Painter, 1998, p. 24 cited in Botterill, 2007, p. 193). Participants referred to other swings as a 'pendulum' (interview) or a predictable 'ebb and flow' (interview) between centralisation and decentralisation, between the 'pushing and pulling' (interview) of the state and the Commonwealth. There was culpability and rectitude; local and national significance; scientific and community knowledge, trust and mistrust. In their analysis of strategic alliances De Rond and Bouchikhi (2004) refer to dialectical forces which 'just are' (p. 66). These 'contrary but coexisting forces' (p. 66) are engendered by a 'plurality of interests' (p. 66). A federation of states or a regional group for that matter, could be considered as a strategic alliance.

Blok (1998) refers to Schopenhauer's allegory of freezing porcupines huddling together for warmth but the closer they got the more insupportable it became. They separate and snuggle interminably from quills to warmth and back, somewhat like the federation, from rancour to amity. These forces are mutually provocative. Each end of the translation/transformation is objectified, 'bother the quills we want warmth' but eventually the excluded 'unwelcome detail' (Whitehead 1929/1960 p. 154) needs attention and the whole thing starts again. Latour (1999b) observes a similar dynamic in the social sciences 'between two types of equally powerful *dissatisfactions*' (p. 16 emphasis in text, see also 1993).

Freud used Schopenhauer's parable in his formulation of the narcissism of minor differences which he instanced as '*campanilismo* (from *campanile*, church bell)'; the rivalry between neighbouring Italian villages 'that develops in reaction against and contempt for a village or town in the neighbourhood' (Blok, 1998, p. 34, emphasis in text). A participant in my research referred to the dynamism of the gate in the Shankill Road wall between two estates in Northern Ireland which shuts at 9.00 am each evening but also 'shuts at the first sign of trouble' (interview). It was instanced to highlight local insularity, preferring to save 'our lake' rather than something more significant to the whole region. This story ended happily as did another allegory, involving one neighbour hoarding the balls and toys which another's kids kept throwing over the fence. We porcupines have to stick together you know.

The narcissism of minor differences is the attempt to impose differences on what is basically the same and 'levels' the signature of these gradients, become important as stabilisers, allowing for *gradual* admission of the merits of the other and maintenance of continuity of the chain of translation/transformation. Blok (1998) concludes that it is the loss of these human levels of difference which precipitates violence, instancing the break-up of Yugoslavia amongst others.

CONCLUSION

What is missing in Blok's account is stabilisation by objects or quasi-objects, the campanile, the gate, the wall, the level, without which there would be no stable society.

The only assignable difference between animal societies and our own resides, as I have often said, in the emergence of the object. Our relationships, social bonds, would be airy as clouds were there only contracts between subjects. In fact, the object, specific to the Hominidae, stabilizes our relationships; it slows down the time of our revolutions. For an unstable band of baboons, social changes are flaring up every minute. One could characterise their history as unbound, insanely so. The object, for us, makes our history slow. (Serres, 1995b, p. 87, cited in Connor, 2009, p. 17).

Human levels of difference would be as 'airy as clouds' without stabilisers.

It is proposed that in governmental dilemmatic space, maintaining minor differences is perpetually endangered, resulting in greater reliance on stabilisers such as routines, formal rhetorical declarations, politeness, public servants as quasi-objects, levels, muddling through and other technologies of the incremental. These dampen the swings and mitigate disruption which would occur without them as well as extending the network by enabling the *becoming* of the actors.

Without paying attention to objects, increments and Shanks' nuggets, such as participant's allegories, *their* metaphysics (Latour, 2005), it is doubtful whether such a conclusion could be reached. The advantages of doing exploratory research in this small and obtuse field are its novelty and potential for new insights on environmental governance and intergovernmental relations. There is undoubted potential for insights into the prevalent distancing of hard biophysical and economic sciences from soft sciences, problematic in practice disciplines and environmental and water management. Personally, the need to shoehorn my concerns into qualitative or quantitative science was eased.

The next chapter describes the Swan River's circumstances and the packed landscape of interests in which Perth Region NRM operated, through the lens of Robins et al. (2011). Presentationally

it doesn't quite fit. The problematique of the Swan River is a matter of concern in the dissertation, as is the role of government and its relations with a citizen group. The questions raised however belong later. The choice was to have the SNA walk on and off the stage or deal with it all at once. Perth is the most isolated city of its size in the world so to have this study which was contemporaneous and probably included some of the same people in the same area as my work is a luxury, and so I have used it as a backdrop.

Chapter 2: A Matter of Concern: the Swan River

This is going to be the best real estate in Perth; it's going to be prime riverfront, spectacular land. And it's a project that I would hope you and your industry will see the commercial opportunities.

Colin Barnett, Premier of Western Australian in a speech to the Urban Development Institute of Australia, 25 June, 2009 on the redevelopment of Perth's waterfront.

INTRODUCTION

Robins et al. (2011) used social network analysis (SNA) to examine governance of the most urbanised, estuarine part of the Swan River, within the catchment area of Perth Region NRM. Undertaken in 2004-06, the study complements my research by bringing together specifics of relations between state government departments and Perth Region NRM and enabling meta-analysis of particular points.

Unchecked urban growth and fertiliser use have resulted in declining river health. Participants in the SNA research were asked to consider the trade-offs between further development of the river foreshore and retention of its natural attractiveness and ecological integrity. This focus question is not merely conjectural.

In particular Robins et al., (2011) found unique levels of conflict between mostly public sector organisations, which they attributed principally to lack of shared goals, beliefs and values. Following Hogget (2006), I suggest that conflict in public administration is endemic because public purposes themselves are conflicted.

Robins et al. (2011) refer to participant language which was 'vague to outsiders' (p. 1304). The absence of local and material words like drains and fish was not particularly noted however. I propose that this was because the SNA was of the relatively more universal end of a Latourian translation (1986, 1999a, 2005) a primary concept in my research, discussed further in Chapter 5. Translations are the basis of actor-network theory, the means by which a river there is transported to this document here.

In the SNA it was assumed that both participants and researchers were talking about and performing the same single object, the Swan River, which was simply located in one place. The theory of object relations is introduced here using riverine instances of it. More detail is given in Chapters 3 and 4.

Some examples of Serres' quasi-objects are described (1995a, cited in Carr & Downs, 2004) and a central task group (CTG) of four organisations, isolated by the SNA, is examined as one of these. Quasi-objects make sociality and I propose that public officials are also quasi-objects, enabling them to play a social stabilising role.

My research question about how the theories of action between government and regional bodies influence their relationships started as an inquiry into personal relationships and world views. I questioned the metaphysics on which the research was based quite early, discussed in Chapter 3, and the benefits of an alternative, but obscure, metaphysics are demonstrated and discussed here and throughout the thesis. The SNA was principally concerned with relationships between people as representatives of organisations as entities. It mixes metaphysics, a problem which actor-network theory overcomes.

The background of the water quality problem confronting Perth Region NRM, and the state government departments involved is now briefly outlined.

ENVIRONMENTAL GOVERNANCE OF THE SWAN RIVER, WESTERN AUSTRALIA

Background

The *Swan River Trust Act, 1988* inaugurated the Trust (SRT) and gave it responsibility for conservation, management and preservation of the river. The Minister for Waterways in the second reading speech for this Act stated that: 'It is vital that these[government] bodies and the community work together to achieve the aim of maintaining and enhancing a functional healthy river environment for the enjoyment of present and future generations' (Western Australia, Parliament, 1988, p. 861). A generation later this hope was not realised if Case Study B and Robins et al. (2011) are anything to go by.

At the time of this SNA study, the *Draft Swan and Canning Rivers Management Bill, 2005*, successor legislation, was under consideration and the *Swan and Canning Rivers Management*

Act, 2006 came into effect in 2007 with new provisions pertaining to development control, sustainability, and involvement of indigenous Nyungah people in river management. The legislation was expected to enhance river management through regulation, rather than community and government working together as the Minister for Waterways espoused in 1988.

Landowners are important too as *water* pollution comes from present and historic *land* use. The SRT is responsible for river management and for public lands around its edge, but even under the new legislation, has no control over private land use. This vacuum provided a niche for non-statutory catchment management which Perth Region NRM filled.

Alongside the legislation were various oversight bodies and committees including the Western Australian Water Resources Council which commenced in 1977, becoming statutory in 1983. The first government policy on integrated catchment management commenced in 1988 and a Cabinet sub-committee on it commenced in 1992. A plethora of committees dealt with water planning, rural drainage, water-based recreation and so on. In 1995, the Water and Rivers Commission was set up to regulate, conserve, protect and manage all the state's water *resources* except those managed by the SRT. The Commission was disbanded to meet national neoliberal micro-economic reform policies and replaced to an extent by the Department of Water in 2005, arguably weakening oversight of water quality.

Each new legislative and committee step meshed with a change in river discourse from utility to amenity, from transport, works and planning, to environmental value, from one river/estuary to many rivers and estuaries, from an unsustainable system to one for succeeding generations, and from a less regulated system to an economically rational system. Colonial *laissez-faire* river management lasted until about the 1940's, succeeded in public administration and politics by political pluralism, and then from about 1975 onwards, 'governance' (Self, 1997).

Governance theory originated in the Netherlands where more consensual government and respect for the public service enabled central planning which would 'design and steer the operation of largely autonomous decentralised institutions' (Self, 1997, p. 18)⁴. Osborne and Gaebler (1992), influential in the United States and Australia, called for the government to steer

⁴ Self contrasts this Dutch version with neoliberal aspiration to prune both central planning and government. In the Australian federation, a centralising tendency at the expense of the states can be followed in the gyrations of federal environmental policy from the inception of the NHT to Caring for our Country (see <http://www.gtcentre.unsw.edu.au/resources/federalism/resources>). Aspects of this were raised in my research interviews.

policy, and the administration to row, in governance, that is, 'setting a norm and correcting deviations from it' (Rhodes, 1996, p. 655) but without this central planning. Collaboration between non-government and private organisations, and government, combined with a more entrepreneurial approach, promised smaller government and fewer taxes through microeconomic reform. This reform included contracting service provision to private companies predicated on their supposedly greater efficiency. In NHT2/NAP, the State of Western Australia contracted out its undertakings with the Commonwealth to the six regional bodies in order to fulfil federal/state agreements. However, this was as much to do with Constitutional relations as ideology (Hicks, 2006).

Ironically both versions of governance 'restored through the back door the importance of bureaucracy' (Self, 1997, p. 18) because they required very capable and resourceful bureaucrats to make them work. Ironically too there were contradictions such as *inefficiencies* in the regional bodies arising from accountability requirements regarded as excessive, and micromanagement, attributed to neoliberal governance at distance (Davidson & Lockwood, 2009). These authors don't mention taxpayers' desire to know where every tax dollar goes, but it was instrumental in Perth Region NRM's noted attention to accountability: 'I can't believe how much accountability there was there' (interview). Also some of its citizen member sub-groups were at loggerheads and *they* wanted to know where each dollar was going.

'Steering', the root of the word 'government', is now dilemmatic for it (Tingle, 2012). The state government's administrative control over subcontractor regional groups was limited, but it was nonetheless accountable for performance of NHT2/NAP. Whether governance is more or less democratic than government or governmentality—Foucault's difficult concept⁵—by giving individuals more or less responsibility is not quickly answered.

Case Study B

'Case Study B: Environmental Governance of the Swan River, Western Australia' (Pattison, 2008), was one of a number of studies in a presentation on applications SNA and the basis of Robins et al. (2011). It was available on the public record for an early stakeholder interview for my research (see below) and I had also participated in it.

⁵ 'Over and over again Foucault makes it clear to us that it is a diffuse and difficult concept that refuses to be contained within well-defined boundaries' (Ten Bos, 2010, p. 27).

The main research questions in Pattison (2008)⁶ based on *interpersonal* relations were:

- To what extent does individual behaviour depend on their connections to others?
- How do these social influences influence and reflect the distribution of group behaviour as a whole?
- How do behaviours influence network evolution?

Pattison defined ‘interdependence’ as ‘the mutual dependence of one individual’s characteristics and behaviour on the characteristics and behaviours of another (net of other effects)’ (p. 12). While not as specific, Robins et al. (2011) contrast the formal structures of a system with the more important informal network connections which actually drive system operation.

Network governance is envisaged and described as the relations between individuals and organisations as entities. The unit of analysis is an organisation and the network function relies on joining up envisaged as one organisational representative dealing with another.

[An] effective governance network system [requires] the presence or emergence of at least the following: (1) network structures that can facilitate effective coordination of action supporting the development of trust and team-like collaboration; (2) widespread agreement among network actors about goals and actions; and (3) specific goals and actions that are adequate to address the broader intent of the network governance system. (p. 1295)

Shared goals and intentions are thus regarded as crucial in shaping networks, collaborations and alliances and contributing to their structure.

Following Jones, Hesterley and Borgatti (1997) the researchers define a macroculture as ‘a system of widely shared assumptions and values that guides action’ (p. 1297) and is the mainstay of network governance. Comprising linked organisations, agencies and groups, it is envisaged as a non-contractual alternative to bureaucracies and markets.

⁶ Page numbers used refer to Power Points in Pattison (2008) which has clearer diagrams and slightly different information to Robins et al., (2011). Dr Garry Robins (personal communication 18 May, 2009) made available a related presentation for the interview with Dr Hamilton. The slide numbers were consistent with the slide numbers for Pattison (2008). The results of this interview were made available to Dr Robins for validation purposes.

This meta-analysis is independent of the study unless acknowledged, and was enabled by reading done for this dissertation.

In SNA, the extent and nature of relations is indicated by the presence or absence of structural embedding, or patterns of relations. These occur in uncertain environment; when goals are complex; and a variety of expertise is needed in repeated problem solving.

Under these conditions, relationships between organisations and groups become *structurally embedded*: that is, organisations who need to coordinate activities with each other need also to coordinate with a number of common partners [resulting in a] *structured network*. (Pattison, 2008, p. 38, emphasis in text)

These conditions were all present in the SNA of the Swan River, but the structural signatures were largely absent. It was concluded that the network was ‘centred around disputation rather than collaboration’ (Robins et al., 2011, p. 1295). Furthermore, while there *was* a network, this did not necessarily imply effective governance.

An SNA is specific to a time, place and its participants. Relatively early in my research I used the diagrams in Case Study B to gather reflections from Dr Bruce Hamilton who from the mid-1980’s onwards, had extensive involvement in waterway management, including the Swan River, as a government CEO and later as a consultant and member of Perth Region NRM. Dr Hamilton confirmed that disputation was still occurring three years after the SNA (personal communication, 29 June, 2009).

Hoggett suggests that the goals of public service *inevitably* conflict and are contested because ‘public organizations are intimately concerned with the governance of societies in which value conflicts are inherent and irresolvable’ (2006, p. 178). Values are at stake in the public sector, instanced in the SNA by the focus question asking participants to consider the trade-off between river amenity and urban development, in framing their answers. The state Premier’s views are clear from the quotation heading the chapter (Barnett, 2009b). Consequently the shared goals, values and beliefs which will enable structural embedding of optimal network governance, may be unfeasible in government.

Conflict in the public sphere also results from public organizations having ‘to contain what is *disowned* by the society in which they are situated’ (p. 175, my emphasis), in the psychoanalytic sense of containing moral ambivalence and unresolved value conflicts. Disowning resonates with Tingle’s observations of the disparagement of Australian government as inefficient, amorphous, and remote for most (2012): public officials as well as politicians are disdained, noted in my research. She also observes that there are few discussions on the necessary compromises of government and democracy.

Research procedure

Participants listed major work responsibilities relating to the Swan River. The researchers reduced these by constant comparison, a qualitative research technique, to produce 14 major areas of responsibility: advising river management; assessing development; compliance; developing policy; facilitating stakeholders; implementing policy; managing river facilities; organisational management; reporting; river health; river improvement; planning; promoting development; and legislative initiatives.

Participants were asked to name the organisations they dealt with regarding the Swan River and to identify the main areas of responsibility on which they collaborated. They were also asked for their working relationships with these organisations; the importance of the connection; and the ease or difficulty of the relationship. Their answers specified network ties, that is, the connections between them.

The 32 participants were selected on the basis of senior rank and according to membership of one of 21 organisations (13 of 15 governmental ties were state government). Most *crucial ties* were described as between these 21 organisations. In total, 48 respondent organisations were mentioned as network partners, of which 30 were local, federal or state government organisations. Government predominance in the network was not examined as a separate topic. However, it is consistent with general agreement on the pervasiveness of government influence on NRM in the Australian environmental management literature and also its control over it (Davidson & Lockwood, 2009).

Who was involved? Using blockmodels (White, Boorman & Breiger, 1976) the organisations were grouped statistically into blocks if they had an identical *pattern* of incoming and outgoing ties. The four primary blocks are shown in Table 1.

Figures 3, 4 and 5 (see pp. 1305-1306) show for each of the three clusters a pattern in which the CTG was the focus of network activity with strong ties from one or two of the other task groups, but with very little reciprocity⁷. To summarise:

⁷ These figures show an entity (the block represented as a circle) with arrows of varying width going between them indicating traffic intensity. In actor-network theory terms, this traffic comprises the object, now translated as a block and is not additional to it as an entity. In the semiotics of actor-network theory, thick lines, that is, more traffic, represent more stability, and as an actor is a network and vice versa, the more traffic, the bigger, more substantial and more real the actor. Block 1 was not an institution but three

- ‘There is an impression [...] of organizations “talking past each other”’ (p. 1306);
- The ‘analysis suggests a network-based governance system where it is difficult to reach agreement about the importance of central tasks, in particular the balance between river health and development’ (p. 1306);
- ‘Remarkably and unusually, there is no reciprocity effect for either crucial or difficult ties’ (p. 1309);
- ‘If one organization regards a tie as crucial, the other party to the tie tends to regard it as difficult’ (p. 1309) and if one regards the tie as crucial (or difficult) the other regards it as difficult (or crucial);
- ‘The organizations seem focussed on different priorities, expressing different types of ties towards other groups of organizations’ (p. 1309) and
- ‘*In summary, this system is driven by an intersection of crucial, difficult relations*’ (p. 1309, my emphasis).

Table 1

Blockmodels

Central task group (CTG)	Secondary task group	Advocacy group ⁸	Peak bodies group
Swan River Trust Dept. of Environment Local Government Dept. of Planning & Infrastructure	Landcorp Catchment groups Dept. of Health Dept. of Fisheries Water Corporation	Perth Region NRM Dept. of Premier & Cabinet Environmental Protection Authority (EPA) Dept. of Conservation & Land Management Developers; Dept. of Agriculture; Dept. of Indigenous Affairs; Tourism WA	Conservation Council Chamber of Commerce & Industry Western Australian Local Government Association Commonwealth Scientific and Industrial Research Organisation

Source: Pattison (2008), p. 46.

organisations and ‘local government’, that is, an aggregate of organisations which formed a macro-actor, or in the terms used in the study ‘clusters of organisations with similar patterns of relations’ (Pattison, 2008, p. 46). These similar patterns in actor-network terms indicate a more substance like actant.

⁸ This was originally termed the ‘Power and influence group’. Perth Region NRM was then the Swan Catchment Council.

Statistical analysis complemented the blockmodel analysis of the density of crucial and difficult ties in the network. The density of these ties was low in the total network, but intense between and within the four groups, with for SNA, a 'remarkable 0.92' within the CTG, 0.15 from the CGT to the secondary task groups with other densities less than 0.1' (p. 1310). The expert reader will appreciate the significance of these numbers, but simple inspection indicates a large difference as 'evidence of high levels of troubled cooperation (p. 1310) and the network is based 'more on disputation than cooperation' (p. 1310). Achievement of shared goals within and between these organisations to resolve the issue of river health and development is likely to be problematic and the scenario of government as the repository of contested policy and public anxiety becomes more credible.

All members of the CTG had pertinent regulatory functions which would promote lack of reciprocity. Regulators must enforce, perhaps negotiate, but not collaborate, in order to avoid regulatory capture by special interests. Perhaps as a result, in my view, the CTG was stated to be less than responsive to the advocacy group about intended development activity. The limitations of collaboration by government regulators could be examined further in NRM studies.

Three *clusters of relationships* were derived using statistical analysis of the number of ties between pairs of organisations. The CTG was most involved in the cluster 'river health and improvement' (62.5 percent of ties) and largely involved in 'planning, assessment and facilitation' (9.9 percent). The secondary task group, including Perth Region NRM, was barely involved in either but *was* involved in 'management, development and facilitation' together with the others in this advocacy block.

Observations about Perth Region NRM and stakeholder verification

Perth Region NRM is interesting because it was non-statutory and relatively small in terms of funding and staff size compared with the five other regional bodies, and the SRT. However it had major alliances with an iconic site, appealing biota such as dolphins, and up to about 8000 volunteers within the metropolitan area such as 'friends of' this lake and that section of foreshore. As a member of the advocacy block, it was classed with two of the most powerful government organisations, the EPA and the Department of Premier and Cabinet. It did not feel overwhelmed by government at that time, as shown in the SNA and also my research.

The SNA study showed that Perth Region NRM had crucial and difficult ties with the Conservation Council, the Department of Conservation and Land Management, the Water Corporation, the Western Australian Local Government Association, and local government. The Department of Agriculture and Food, through which the NHT2/NAP funds were directed, was not one of these crucial and difficult ties at that time.

Dr Hamilton said that these ties expressed the strategic direction which Perth Region NRM had taken to pursue integrated NRM using its non-statutory status as an opportunity⁹ to liaise with members of the government and government organisations. In particular, it was then wooing the Water Corporation as one of the largest organisations in Western Australia and with a mutual interest in water quality improvement.

He agreed that the organisational relations shown in all three clusters (see Pattison, 2008, p. 47) were correct (see also Robins et al., 2011, pp. 1305-1306). In cluster 1, river health and improvement, the 'big players', in his terms, were landowners and money. Cluster 2, management, development and facilitation, showed that the SRT was talked to by others but he said that it 'did not listen', resonating with the SNA observation mentioned above, of organisations 'talking past each other'. He thought that the SRT had made a conscious decision to go it alone. Note that there were other organisations in the CTG but Dr Hamilton focussed on the SRT.

At that time, the SRT did not report directly to a CEO or Director General which Dr Hamilton thought would have given it more clout through a direct link to a minister. In his view, as a result they did not have the political or institutional credibility to be able to carry out their role under the then relevant legislation.

⁹ The Government of Western Australia recognised the ability of the six, non-statutory regional bodies to form alliances with the community, non-government organisations, and government itself as an advantage in the extension of government environmental programs (English, 2009, Government of Western Australia, 2009). In terms of network governance they were better at it and offered an alternative to markets and bureaucracy. It is tempting to ask if they were better at resolving public anxiety and conflict, if so, how, and what were the consequences for them and for the preservation of public sector accountability by offloading and outsourcing the vague governance and social bits in this way. This step may answer some of the dilemmas of governance (Ansell, 2008) and may be considered as an example of 'partial organisations' (Ahrne & Brunsson, 2010), that is, organisation based on only a few elements of formal organisations, fruitful for further research.

Dr Hamilton named a particular person as the source of some crucial and difficult ties. No person was identified in the presentation or anywhere else. However this is an example of Perth as a small world. A participant in my research said there were ‘two degrees of separation’ and continued: ‘If you’ve been in the game long enough you know everyone’ (interview). I recounted this notion to another who replied: ‘Professionally, they’re probably right’. The first participant said that others often referred to the lack of ‘absolute specialists and experts’ (interview) in Western Australia, a critical factor in the performance of more remote regional bodies. Robins et al. (2011) did not suggest that some conflict was due to personalities but in my research a few participants ascribed it to strong personalities, competitive alpha male behaviours and officious administrators. Another thought that public servants were too uninterested, faceless, and too concerned not to rock boats to cause anything.

Unlike two other environmental custodians, the Botanic Gardens and Parks Authority, which manages a major urban park, and the Rottnest Island Authority, Dr Hamilton observed that the SRT had no area of land to manage unilaterally which would have provided it with ‘a *tangible* identity’ (interview, my emphasis). He thought it had retreated to the more tangible waterway part of the river rather than manage a more nebulously defined catchment, as Perth Region NRM did. Central to my research direction was my initial preference for a simply located object (see Chapter 3) and this is an example.

Dr Hamilton suggested that SNA could assist integrated natural resource management but it is a powerful technique, time-consuming and requiring considerable expertise. The SNA results certainly provided and prompted insights for my research and were also useful for verification.

Stakeholder verification of the study results

The researchers held a workshop for representatives of the organisations which participated in the SNA. These representatives agreed with the major findings including that the ‘elements of contestation were important to understanding the system’ (Robins et al., p. 1307).

This procedure raises questions about verification, important in my research. ‘Stakeholder verification’ implies a constant object which is reproduced by the verification. However, Kvale and Brinkman (2009) refer to pragmatic validation as ‘verification in the literal sense—“to make true”’ (p. 256). Does the knowledge make someone (or something) *do* or *make* something?

In a process ontology there is no object sitting around waiting to be reproduced. In biophysical science, machines of all kinds from rulers to Hadron Colliders, are pressed into service to make something ‘do it again’, making it true, stabilising it. In this sense the workshop participants were not reproducing the case study but making it true through a trial as an actor to make it do something and transform other actors. Latour (1999a, 2005) suggests amongst other things, that this is the criterion of truth, that someone or something continues the chain of abstraction and by so doing, makes it more real, by making it ‘having been’ for a longer time, a kind of temporal validity. Again, Dr Hamilton as ‘truth maker’ could have said that he didn’t recognise any of it from his experience and so could the workshop participants but they did not. In actor-network terms I added an alliance making the nonhumans—Perth Region NRM and the study more real, as well as the humans.

Verification in social science studies goes to the heart of this rather than being an offshoot of the study. In checking with an expert, I went in expecting things and events would be, to repeat, ‘unproblematically given to us as fully present and self identical through the immediacy of our experiences’ (Chia, 1999, p. 219). The river was single and stable and so member checking would be unproblematic, with me as an uninvolved observer. Now I am single and multiple too, enabling the network’s extension and making me more of a researcher.

The language of responsibilities and its translation

I will now talk about the absence of some words and presence of others in Robins et al. (2011) who also note the vague language used by the participants. These are examples of what Latour (2005) terms a translation: the theory behind them is discussed in Chapter 5, but it is opportune to introduce the notion.

Notably there are no particular terms relevant to amenity and development. River is used 57 times in the article, but pollution, views, beauty and life-style, do not appear and ecosystem and negotiation are each used once. This paper is not about those. There were no local or material words like phosphates, water, or fish, but relatively more universal, standardised terms like ‘developing policy’.

As noted the participants mentioned a multiplicity of responsibilities which the researchers *translated* into 14 relatively more universal responsibilities which could be more easily handled. A little of the subsidiary, more local and material instances, was abstracted or siphoned off and subsumed under more universal terms (for now, Figure 2, p. 141, indicates how).

While some of these terms may seem rather general or vague, they utilize the wording that participants consistently used, and are consistent with the terminology in Riverplan¹⁰ and so were retained without further interpretation to enhance face validity when we provided feedback on our results to participants. (p. 1301)

At the workshop, this rather vague language was verified as what the participants used and what they seemed to understand: there was no argument or discussion about using it. The researchers were comfortable using it themselves and for face validity when dealing with participants without examining too closely what was actually meant. Similarly the headings used to name the three clusters, for example ‘management, development and facilitation’ seemed vague ‘but do *reflect* the wording used by participants’ (p. 1304, my emphasis). The researchers cite Weick (1979) that ambiguity may foster cooperation. It was ‘not necessarily crucial that the participants themselves applied the same meaning to the terms’ (p. 1302) and it was assumed that participants understood them or were familiar with them and weren’t talking past each other in the congenial atmosphere of a scientific workshop.

This language of responsibility allowed discussion of the focus question on amenity and development by people from different organisations, and, from my experience, different occupations such as urban planning, hydrology, engineering, public administration, environmental management, and economics. It enabled participants and researchers to meet on a number of actual occasions and produce something in which they had an interest, namely the research.

In Chapter 3 a similar situation, production of a public health leaflet about IUDs by an expert committee is described (Dugdale, 1999). The assumption of one object, namely the IUD, allowed the diverse committee members to complete their shared goal of a health leaflet. They could talk about ‘the IUD’ while simultaneously referring to their version *performed* with their work. Stopping to clarify each version would have impeded task achievement but vague singularity, or better the performance of a single (‘the’ IUD) and multiple object (specialist performances of it) enabled negotiation. Dugdale concludes that the customary models of a single negotiated outcome neglect this multiplicity and that if decisions and indeed objects

¹⁰ ‘Riverplan: an environmental management framework for the Swan and Canning Rivers: comprehensive management plan and implementation strategy for the Environmental Protection (Swan and Canning Rivers) Policy 1998, for public consultation’, Western Australian Government, Department of Environment, 2004. From the few pages available in Pattison (2008, pp. 33-34) this plan appears to be more local and particular than the language of responsibilities. A copy was unobtainable.

cohere, it is because they are both single and multiple, and mutually dependent¹¹. Robins et al., argue that shared goals and values are central to successful governance, a common assumption in planning and administration. The specificity of the goal, the necessity of shared values, and the role of the object, is outlined in Chapter 8.

‘Reflect’ is not the same as ‘reproduce’. Production of this language by a qualitative analytic technique (constant comparison), facilitated the research by making specific particularities more general. In actor-network terms the more local/material, was translated/transformed from one kind of inscription to another which was more mobile and which allowed ‘new translations and articulations while keeping *some types of relations intact*’ (Latour, 1999, p. 307, my emphasis). The more local particularities become the relatively more universal ‘planning assessment and facilitation’ for example, by being made more textual, but the one does not disappear altogether, as shown in Figure 2 (p. 141).

Translation comprises consecutive and continuous aspects or modes of the river, the succession of which enables further activities. Drains, for example, become less and less local, material and particular as the river becomes more and more general and circulatory, detailed in Chapter 5. The drains are still there, but their ‘blackboxing’ by the amenable language of official spokespersons, makes them more provincial by comparison with the relatively more general.

To translate is to displace. [...] But to translate is also to express in one’s own language what others say and want, why they act in the way they do and how they associate with each other: it is to establish oneself as a spokesman. *At the end of the process, if it is successful, only voices speaking in unison will be heard.* (Callon, 1986, pp. 18-19, my emphasis)

At the study workshop there were voices speaking in unison in the ‘language of responsibility’. It *made* another opportunity for spokespersons to speak about the single river in another more general or vague way, rather different from their multiple and more particular and specialist appreciations of it, but interdependent.

Networks (or relations) make objects and objects make networks. It may be asked if participants were talking about and performing not so much different priorities and perspectives as mentioned in the SNA, but different river objects and realities existing side by side. Analogously to the IUD, it may be asked to what extent was each block in the block model

¹¹ Dugdale doesn’t mention Whitehead but I have touched on the relation to his subject/superject (see p. 59). Initially I found the single/multiple notion hard enough to comprehend without any further complications but here they are. Another of his hard-to-think notions is ‘eternal objects’ (see n. 18).

concerned with a different *version* of the way the river presented itself, revealed by the patterns of ties. ‘River health and improvement’ as a sickly ecosystem; ‘management, development and facilitation’ of a monetisable river through the sale of river views and proximity to it; and ‘planning, assessment and facilities’ as a public good river. A river in the throes of a major fish kill is not the same object as one comprised of foreshore, views and real estate, and not the same as the surface used by hang gliders, yachts and ferries adjoined by jetties and sports clubs. It is ‘serving very different functions by different parts of the system’ (Pattison, 2008, p. 54).

Mol examined the performances of two scientifically uncontroversial medical conditions, anaemia (1999) and arteriosclerosis (2002). Different specialists used these medical terms but in both, the same-named thing was *performed* differently and even in contradictory ways. She further observed that in practice the three ways of diagnosing anaemia each diagnosed an object which did not necessarily coincide with the others. One person may even perform these potentially different objects sequentially. ‘So they are different versions, different performances, different realities, that co-exist in the present’ (1999, p. 79). Note performances, not perspectives. ‘They are different and yet related objects. They are multiple forms of reality. Itself’ (p. 77). Of her study on anaemia, Mol observed that the disparities did not lead to discussion, consensus-seeking, or concern. ‘It is simply how it is’ (p. 78).

In the SNA, the study participants felt that while there were some effective interactions, a similar amount were difficult and important, but without undue emphasis on these. Mol’s ‘how-it-isness’ perhaps occurred in the more uncontroversial interactions while the overall conclusion is of ‘troubled cooperation’ and not listening, an oscillation of some kind perhaps, between difference as settled matter of fact and fresh abrasion.

Robins et al. (2011) note the expectation in policy discussions that discussants will all have the same understanding of the problem and its dimensions. However, this is often not the case because ‘different perceptions of the management issues surrounding a shared resource colour the way policy is implemented’ (p. 1310). It is not so much colouring or perception as *performances*, in what Mol calls ‘ontological politics’ (1999, p. 74) which *make* singularity *and* multiplicity. We don’t really know how the different rivers were performed, in meetings for example, but it is tempting to see the three clusters of ties as different and the disputation as an attempt by the CGT to make it single, a matter of fact.

We don't know whether the participants, including the researchers, in the SNA had the same river in mind, or Dr Hamilton and me, for that matter¹². The question would not be asked in a network governance model because of an assumption that organisations and rivers are unchanging entities or substances. However, the case study participants may have been considering not just different perspectives, or world views, but performing different versions of the river, different realities.

In the experimental design of Case Study B, the estuarine foreshore part of the Swan River as the study object was verbally presented to interviewees. In an earlier draft of the thesis I questioned if they all were talking about the same thing and what they thought this was could have been clarified. *Now* I would say that I was trying to make singularity from multiplicity and that the participants performed nicely answering the questions and so did the interviewers. Multiplicity enabled them—and me—to participate, a recurring theme in the thesis. The river this time, was simplified, made single and smoothly flowing, like anaemia, 'making the endless and complex ramifications of out-there-ness look as if they were much more straight forward' (Law, 2004, p. 65).

Multiplicity and singleness is *how* it is. 'Common understanding' is not an entity to be discovered but labile, arising not from perception but from performance. Rather than a model of rational decision makers representing points of view around a table or in a survey, 'they are constituted in part in the course of negotiation' (Dugdale, 1999, p. 115). They too *become*, now explored further using quasi-objects.

QUASI-OBJECTS

Quasi and transitional objects

In psychology transitional objects¹³ are used as a bridge between self and other, for example between the infant's world and another world. The teddy is '*an as-if object*' (Carr & Downs, 2004, p. 353, emphasis in text) which allows the infant to try out 'me' and the more connected 'not me'. The teddy object itself is not transitional but it allows the child to make a transition

¹² My own history of the river notion was mixed. The 'of course' of connecting my experiences of the river as multi-faceted, with the river as a quasi-object occurred late (14 December, 2011). Few people swim any more in the river near where I live although it was a popular swimming destination into the early 1960's. Now a narrative of my experience, now a thing of beauty or transport, now an object under threat, now a legislative inscription, now 'the river', changed the course of my research. I could have realised from all these versions of it, just how big a network Perth Region NRM was. To repeat, this thinking is not obvious, clouded by habit.

¹³ Carr and Downs discuss Winnicott who originated the concept, and Klein a major author on it, and provide references for both.

and experience reality differently. Carr and Downs compare these to Serres' quasi-objects which make the social rather than the personal.

Serres argues that without stabilisers such as money, war, religion and the economy, the social collective would have to work continuously to main stability. Without these quasi-objects, human society would degenerate into mayhem: the protocols, cease fires, and other formalities of war attempt to curtail and 'objectify pure violence' (Serres, 1995b cited in Connor, 2009, p. 17). In Chapter 9 in this thesis a wall and a gate seem to have been used for this purpose. These originary stabilisers are now in decline and Serres suggests a new contract with nature (Serres, 1995d). I am not so sure about Serres but Latour is a realist believing that humans and nonhumans are utterly intertwined as hybrids so the teddy object *is* transitional. The metaphysics of the two is different, outlined in general in Chapter 4.

Quasi-objects are uncommon in organizational studies (Carr & Downs, 2004, p. 358) and remote from public administration and environmental studies to my knowledge. Exceptionally, the project, Social Learning for Integrated Management and Sustainable Use of Water at a Catchment Scale (SLIM) used socio-technical objects, namely weirs and a breed of cattle as 'intermediary objects' (Ison et al., 2004, p. 51) or preferably, 'intermediary objects for collective design' (Teulier & Hubert, 2004, cited in Ison et al., 2004, p. 51). Ison et al. (2011) suggest new 'systemic modalities' (p. 3983) of connectivity and list eight, including intermediary objects, which may together with the first five listed be considered as transitional objects, with the other three as participatory methodologies. Unlike quasi-objects, the former intermediary objects as modalities seem more transitional objects, that is, entities, than hybrids. Indeed in a constructionist metaphysics they cannot be anything else, discussed in Chapter 4.

Quasi-objects are now discussed further and a role for the CTG is proposed based on them.

Quasi-objects make the collective and the collective makes quasi-objects

Serres uses the circulation of quasi-objects to explain the emergence of the collective. For example, in ball games, the ball is passed around to make the game, the relationship between the players. Some fumble and treat it 'as if it were an object, while the more skillful ones handle it as if it were playing with them; they move and change position according to how the ball moves and bounces' (Serres, 1995a , pp. 47-8, cited in Carr & Downs, 2004). It is an agent. When I have the ball or pass it I am the 'not me' with access to the world of the game. When I drop it, I am 'me', the individual, a potential scapegoat. In other words, discontinuity of translation cuts

off the final actual entity from its origins and stops its becoming giving it ‘substantial reality’ (Latour, 2011, p. 804). It is this that provides the grist for Pattison’s ‘social mechanisms’ (2008, p. 39) as explanatory substances together with the researchers’ assumption—including my own initially—that interorganisational relations were necessarily interpersonal.

‘As soon as we are on the trail of some quasi-object, it appears to us sometimes as a thing, sometimes as a narrative, sometimes as a social bond, without ever being reduced to a mere being’ (Latour, 1993, p. 89). The ball makes the social practice, the story of it, the object which bonds people, but is never just a ball. Something is passed around, perhaps the river, which made the collective cohere, and the collective makes the sickly, monetisable, public good river, cohere by this account, but it is not just a river.

For all three clusters of responsibilities, the traffic was largely one way towards the CTG which Dr Hamilton identified as the operational group. The cluster ‘planning, assessment and facilities’, was largely handled by this block’s internal network and had the least ties. It is also the only block with a compliance responsibility and the one around which the system devolves.

Serres’ quasi-objects potentially shed light on what might be happening. That the SRT doesn’t listen is an apt metaphor for it potentially becoming more objectified and less relational. In Serres’ terms, cutting off relations makes it a potential scapegoat rather than a ball passing, relating player creating more ties and a larger network. Dr Hamilton drew attention to its focus on the more tangible aspects of its mandate with less attention to governance.

A bad player maybe but a handy one for dilemmatic river planning. Rather than the collective participation which makes the network, as the one with the ball, the SRT and CTG emerge as the ‘he’ who may be tackled. It fronts the media as the responsible spokesperson for the river, but rather securely. Its busyness with operations enables multiple network ties which include very different attributes indispensable to the others.

The more alliances an entity has, the more real it is. From inspection of Figures 3-5 (Robins et al., 2011, pp. 1305-1306), the CTG had most ties overall and in the cluster ‘river health and improvement’. Assuming that a tie represents an alliance, the CTG has most, making it more connected, more real. And so it adaptively manages its politico-ecological niche. ‘Is not ecology anything but the deployment of all the attributes necessary for any self contained entity to persist? To be self contained—that is to be an actor—and to be thoroughly dependent—that is

to be a network—is to say twice the same thing’ (Latour, 2011, p. 801). The CTG is single, (an internally coordinated actant for some purposes) and multiple (a network for others).

CONFLICT IN PUBLIC POLICY

High levels of ‘troubled co-operation’ (p. 1310) between the operational executives in the CTG and between the advocacy group and CTG is a central finding of Robins et al. (2011). It was confirmed by a second statistical analysis, by a workshop of participants, and as mentioned before, was still occurring three years later.

As mentioned in Chapter 1, Hoggett (2006) considers that public purposes are continuously contested in the public sphere and in turn, values and their incorporation into policies permeate public organisations (see Lindblom, 1959). He is concerned with the passing of legislative conflict down the line for resolution at the point of delivery, typically by the ‘street level bureaucrat’ (Lipsky, 1980, p. 46, cited in Hoggett, p. 179) or operations. However, in the SNA case study, the operational executive of the CTG was involved, with the advocacy group of powerful players going to them, with a lack of reciprocity noted. It may be inferred that the legislative flaws observed by Gunningham et al. (2003) were passed down the line for probably continued irresolution.

An effective governance system presupposes a supportive legislative and policy framework (Robins et al., 2011) which is at odds with Hoggett’s proposal that conflict in the public sphere results from public organisations having ‘to contain what is *disowned* by the society in which they are situated (2006, p. 175, my emphasis). He uses as an example the desperation of residents in a sink housing estate. Environmental degradation is likely another. The Swan River is regarded as dying (CCWA, 2013) but there is no continuing public outcry. A participant in my research alluded to pockets of local desperation and the difficulty of having a ‘rational conversation with someone who is so desperate’ about the plight of their local lake and the same applies to the river.

Public officials as transitional and quasi-objects

Hoggett describes the role of an official who bore the brunt of people’s anger, anxiety and distress about their living circumstances in a meeting held at their run-down housing estate. He was expected not to react in his *formal*, stabilising role, but was also recognised as a person with feelings by some people who came to ask him *informally* after the meeting if he was alright. He

understood that he had to survive the situation and not retaliate. The feeling ‘me’ reality of the official responding to anxiety was a different reality to the ‘not me,’ the official persona.

Hoggett writes primarily about human service organisations but suggests that public officials ‘include all those whose job involves some degree of discretion within the welfare state to have to contain the unresolved (and at times suppressed) value conflicts and moral ambivalence of society’ (2006, p. 185). His anxious official demonstrated this discretion by creating an overt and recognised difference between his public and private self. He performs a stabilising function by formalising conflict on the housing estate and so prevents it turning into informal violence which it may have done if he had retaliated.

The official is what Latour (2005) terms an *intermediary*, formal, passive, transporting conflict (or routine), without transformation—he didn’t retaliate—or a *mediator*, informal and unpredictable, employing discretion; single or multiple. An intermediary:

Transports meaning or force without transformation: defining its inputs is enough to define its outputs. For all practical purposes, an intermediary can be taken not only as a black box but also as a black box counting for one, even if it is internally made of many parts. *Mediators*, on the other hand, cannot be counted as just one: they might count for one, for nothing, for several, or for infinity. Their input is never a good predictor of their output: *their specificity has to be taken into account every time.* (p. 39, my emphasis)

Public servants occupy a unique social niche by performing both roles but particularly that of the intermediary—‘faceless’. A Weberian view of officials relies on them doing their duty impartially and predictably, and is antithetical to recognition of the individual (Gerth & Wright Mills, 1948/1977). Liberal government relies on separation of person and role when making decisions in the public interest rather than reliance on one’s own principles and interests (du Gay, 2007). Following Walzer (1984), du Gay refers to this as the ‘art of separation’ (p. 4) without which there simply would not be some taken for granted features of bureaucracy such as procedural fairness and Weberian impartiality and reliability. Officials in my research deployed the art of separation between a more personal self, the ‘me’ and the impartiality for example required by the ‘not me’, and said so (for example see pp. 172-173, and p. 252)¹⁴.

More recently there has been a move in the public sector towards more responsive, enthusiastic and informal officials, and the shared beliefs and values of governance. How these will function

¹⁴ In another research example, Whiteley’s ‘structured’ and ‘unstructured’ self (2004) is discussed on pp. 88-89.

alongside the Weberian view is glossed over according to du Gay. Although he does not refer to Serres' quasi-objects and their role, du Gay regards these official qualities as an important tool for the state in its attempts 'to secure *social pacification* and a modicum of *predictability* in human affairs' (2007, p. 12, my emphasis). As stabilisers, officials slow our history and consideration of them as quasi-objects enables theorisation of how this occurs.

A form is 'something which enables something else to be transported from one site to another' Latour, 2005, p. 223). A formal official transports administration of the state, the importance of which is enforced by public service procedures, regulations and the law. A lapse in formal relations could constitute misconduct, a public service offence, which would have been fresh in the minds of public servants at the time of my research because of the workings of the Western Australian Corruption and Crime Commission (CCC)¹⁵. A participant in my research thought that it contributed to officials being nervous and not taking risks, and contrasted 'tipping the nod' in business with the noticed incapacity of public servants to follow suit.

In the SNA, priority was given to informal relations and the goals, intentions, attitudes and beliefs of actors to make the connections through which the social system operates. Consequently network governance has a problem of transience and an ambivalent role for public servants. A trade-off of bureaucratic stability for more flexibility (Ansell & Gash, 2007), may come at a price.

Contestation evidences a 'matter of concern'

In Latour's phrase, river health is a 'matter of concern' to the officials. 'While highly uncertain and loudly disputed, these real, objective, atypical and above all, *interesting* agencies are taken not exactly as object but rather as *gatherings*' (2005, p. 114, emphasis in text). These gatherings act as lures for action and experiences between humans and nonhumans. Latour contrasts them with 'matters of fact' (p. 116), that is, the taken for granted, which the river seems to have been in the 1940's but to some extent is no longer.

¹⁵ The CCC held hearings on corruption in the public sector during 2006. Public servants from the Departments of Planning and Infrastructure, Conservation and Land Management, and the EPA, at that time linked to the Department of the Environment, were found to have acted to constitute misconduct, that is, abused their authority for personal gain, caused detriment to another person, or acted contrary to the public interest. These agencies were in either the CTG or the advocacy group (see Table 1). Most public servants were later exonerated, but the Chair of the EPA from 2003-2007 was not ('CCC Findings', 2008). Some of the conflict found by Robins et al. (2011) may have resulted from fear.

As matter of concern, the troubled cooperation in the SNA may evidence the inevitable gyrations of participants rationing a shared public good in the dilemmatic trade-off posed between amenity and river health, and development. Sustainability of agricultural land policy in Western Australia is yet another with both city and country people criticising inadequate land management while recognising the demand for human and animal food (Dzidic, 2009).

Hoggett (2006) suggests that anyone who spends some time in a public organisation, and he instances human service organisations rather than say, a utility, will notice different and changing views from professionals, service users and managers on the organisation's aims, their constant change of views, different views within professional ranks, and those who formally define policy such as politicians, senior officials, regulators and academics constantly change their views. Shared values and a macroculture are unlikely by this account. A constant air of uncertainty was noted amongst the participants by Robins et al. (2011) which resonates with this, and the CCC's deliberations were possibly influential.

Bureaucracies and government in the public sphere are the 'necessary embodiment of such conflictual purposes' (Hoggett, 2006, p. 179), captured in the SNA by the focus question. This was not just a once off, and Obholzer (2003) suggests asking public servants about the dilemmas they face in their work when addressing their contested objectives. In actor-network theory terms, the intensity of the contestation in the SNA signals that something is going on, *something matters*. At stake is reality: 'Latour defines reality as *resistance*' (Harman, 2009, p. 26, emphasis in text) because no one really knows what it is and all have to negotiate with it. What becomes more real has overcome more resistance by linking actors in translation, but not without difficulty.

Robins et al. (2011) and I assumed that conflict was unproductive and made by humans, strangely perhaps, implying that all frustrating forces are man-made and may be resolved. Previous reference has been made to forces which 'just are' (de Rond & Bouchikhi, 2004, p. 66), as creative change in the world and which tear at strategic alliances by fostering continuous change (Weik, 2011), through a reality which is resistant to our purposes.

The notion of strategic alliances as heterogeneous phenomena has been alluded to and provides food for thought. The relation between Perth Region NRM and government agencies could be conceived of as a strategic alliance implemented by contracts. The relations between the state and Commonwealth government officials could be considered as an example and just as labile,

or even the Australian federation as a whole, all beset by contradictory forces, arising according to de Rond and Bouchikhi, from a plurality of interests, values, histories, preferences and prejudices. These authors take a social constructionist line, and exploration of their thesis taking materiality into account could be fruitful.

Lindblom's 'muddling through' (1959, 1979) a public administration classic, is discussed in Chapter 8 (Analysis IV, see also n. 62). Its endurance may signal assent to incremental responses to conflicting public purposes obtained by carefully negotiating or translating a policy trajectory. These bootstrapping processes use just-obtained stability to negotiate or translate the next activity. This form of connectivity is demonstrated by actor-network theory, discussed in the next chapter.

Organisations as entities in an environment

In Newtonian cosmology bits of matter occupy bits of space and time making connections between them problematic, resolved by Whitehead's philosophy of organism (1929/1960) and Latour's translation or abstraction, derived from Whitehead's Method of Extensive Abstraction, is described in Chapter 5. The reader will be familiar with an abstract in an academic paper which condenses the whole paper, as 'a kind of *nectar*' (Harman, 2009, p. 79, emphasis in text), standing for it. Abstraction is not an adornment of thought 'but the very stuff of relation itself' (p. 54). It provides the means for entities to exist in Whitehead's metaphysics and does away with the need for extra mechanisms and ties. These redundant nuts and bolts are dispatched by his 'fallacy of misplaced concreteness', in which an abstraction is taken as the 'ultimate concrete stuff the universe is made of' (Weik, 2006, p. 8).

The SNA case study mixed the two, with a process and qualitative research method joined to a Newtonian model of network governance which relies on organisations conceptualised as Newtonian entities joined up by organisational representatives, also entities. This is impossible and endowing the organisational representatives with values and beliefs in, or independent of, a brain doesn't really work either, for reasons explained in Chapter 4. In process terms, a classification of process is introduced (see Table 2, p. 65) which problematises the insertion of SNA (endogenous organising) into an exogenous framework of organisations as entities which respond to something outside them. The relations enabling the first are problematic in the second. Governance studies may benefit from using this distinction.

An ‘appropriate legislative or policy framework’ is a precondition for an effective network governance system, true enough if regarded as a stabiliser. However, individuals are primary and ‘informal relationships are vital to understanding network governance’ (Robins et al., 2011, p. 1311) offering ‘the connections through which the system actually operates (p. 1295), but not for long as sociality alone. The intentions, beliefs and goals of individuals are ‘crucial in determining how different networks intertwine, and in shaping the collaborations and alliances that are formed, thereby helping to pattern the structure’ (p. 1311).

Similarly, Gunningham et al. (2003) propose that ‘bureaucratic voluntarism’ will be needed to join up discrete, enduring organisational entities when statutory, policy, and program delivery roles are unclear. An ontological assumption of agencies as entities is shared with Robins et al. (2011) resulting in similar proposals for a solution, namely more focused organisational goals, legislation, and its enforcement.

The question is whose shared goals? Officials are already bound by organisational missions and visions, institutional codes of conduct and regulations, and the duty to implement the policies of the government of the day, not to mention the relevant legislation. Furthermore, Hoggett’s inevitably conflicting public purposes imply that there will always be *some* inappropriate legislation and policy.

Summary remarks

The river became more single and relatively universal, more textual, as the ‘language of responsibility’ reduced its multiple details. We make singularity (Latour, 1993) but not very well as hybrids are omnipresent. In Chapter 3, research studying the health dangers of IUDs demonstrates in more detail that the multiple helps generate the single and vice versa. Research on Alcoholic Liver Disease hints further that that ‘the river’ could be distinct realities. It was difficult to reach agreement about the performance of central tasks, in particular ‘the balance between river health and urban development’ (Robins et al., 2011, p. 1306). ‘This is ontological politics. Which of these two realities is to be preferred? Or perhaps more appropriately, how might a satisfactory balance between the two realities be enacted?’ (Law, 2004, p. 76). The river is left behind as this research translation becomes relatively universal too.

Chapter 3: History of the Research

SIZE OF PERTH REGION NRM

In a grant proposal for this research (30 October, 2007), Perth Region NRM was described as being located in a small building near Midland, an outer suburban town, with a farmer membership. The research was envisaged as a case study in the context of the broader dissertation, conducted at the end of the main interview study and capable of being studied in this manner. The proposed case study already had a known quality as it was spatialised, sized and rural. I and others had made assumptions about what Perth Region NRM was, what was to be explained, and the best way to study it.

Some time into the research, I inquired about the actual size of Perth Region NRM only to find that it was not the relatively small organisation I had thought but a major network, with, at its peak, over 8000 members (Dr B. Hamilton, personal communication, September 3, 2009¹⁶). So entrenched was my idea of it that despite previous visits to the office in Midland; earlier participation in a study of Perth Region NRM as a network which showed its strong ties with senior officials (Robins, Bates & Pattison, 2011); a site tour with a former Chair of Perth Region NRM covering the east–west ‘width’ of the catchment; reading on it; exposure to the map of the Perth metropolitan area sized catchment which should have made some impact on me as a planner; and as a long-term resident in the City of South Perth living very near the Swan River, I had made assumptions about the organisation’s scale and nature.

For other opinions I asked my then supervisor and co-supervisor about their respective estimates of the size and nature of Perth Region NRM. Both are experts in social research and planning in natural resource management. Particulars are not on the public record, but a request for a scholarship extension (18 February, 2010) gives the gist and states that we had been:

Led by its geographic location to equate Perth Region NRM with the physical organisation, that is, a small building in Midland with about 25 full time and part time

¹⁶ There were 25 staff; 170 stakeholders directly involved through the Reference Groups and the Board; 32 local governments; 450 NRM community groups; about 8,000 people through these community groups; an unknown number through partners—state government agencies, industry groups and so on. In his email Dr. Hamilton indicated that this number was in a peak but did not vary greatly in the troughs. Perth Region NRM changed its name from Swan Catchment Council in September 2008 and the latter name may also have contributed to misunderstanding its scope.

staff on the payroll, plus its Board. As the research developed it turned out that in fact at its peak, it comprised about 8000 people, a reflection of its peri-urban status. This is in stark contrast with rural natural resource management which overwhelmingly is the norm and the basis for the research planning.

Note that world views or perspectives were not mentioned but 'location'.

In the request, the underestimation was also attributed to its peri-urban status within a metropolitan area with 1.6 million people comprising over 70 percent of the state's population. In one interview for this research, however, the then Swan Catchment Council was more urban, with influence in the central city.

Swan in one sense is the best-placed of all the regions to get other sorts of funding because the corporates are based in the city. They just have to look out of their towers [at the Swan River] and have a look at what's going wrong. Government is basically based in the city [of Perth]. (interview)

However, Perth Region NRM's jurisdiction extends over 9710 sq. km of which 1386 sq. km is urbanised (Thomas, Hamilton & Janour, 2010). While it was peri-urban, it was also central: off-shore areas were an ambiguous inclusion.

Other factors probably affected the research lens. As noted, the NRM literature is predominantly about rural NRM (Robinson et al., 2011). Furthermore, in terms of size as number of people involved there may have been some blurring of volunteer and paid workforces of the 8000 people mentioned by Dr Hamilton as the vast majority were volunteers.

Thus Perth Region NRM was talked about as one 'thing' but there were different versions of it. More generally, if we three locals misunderstood, it may be asked how federal officials understood and performed their NHT2/NAP duties and conceptualised this large organisation held together by a relatively small administrative organisation. Last, a more sophisticated future question would be 'What size is River Inc.?'

WHY WAS IT TOO SMALL?

I inquired further, first into case study method, which I will come to, but also through an 'ah ha' moment when I had an intuitive image of the Perth central business district situated on a broad sweep of the Swan River, source of river view real estate. Intuition, like metaphor, carries you from one place to another expeditiously, metaphor derived from the Greek meaning to transfer or carry across. The implication was that Perth Region NRM was not only in Midland but also

through its surveillance of the river, was a network of relations and not a ‘simply located’ entity to use Whitehead’s phrase (1920/1964). Because ‘Perth Region NRM’ was located in Midland, ‘it’ must have particular characteristics derived from its location¹⁷.

It had been thought of as an *entity* which occupied a *place* comprised by time and space and which was the background of events and actions. ‘Underlying this intellectual attitude is an unshakeable assumption that reality is essentially discrete, substantial and enduring’ (Chia, 1999, p. 215). ‘Deeply ingrained habits of thought’ devolve around ideas of ‘order, stability, discreteness, simple location, identity and permanence over disorder, flux, interpenetration, dispersal, difference and change’ (Chia, 1999, p. 219). Hence change is something that is engineered or managed within or between objects/entities such as organisations, and interorganisational relations are necessarily movements between them.

The required case study produced another surprise. I read about case studies, attended a workshop for postgraduate students and staff on how to do them, and started to compare references, urged on by instructions about sticking to the method. I reviewed three case study methodologists, Creswell (1998), Stake (1994, 1995, 2000) and Yin (1984/ 2003, 1993/2003) together with a relatively recent review of case study methodology (Platt, 2007) and an anthology (Gomm, Hammersley & Foster, 2000). Creswell drew extensively on Stake’s 1995 work (see p. 5 and p. 65 in 1998, 2008) and so I relied on Stake.

I attended an expert lecture on case study in which correct use of Yin’s model was stated as convincing evidence of a grasp of the task. Platt (2007) refers to Yin as ‘making leading contributions’ (p. 103) and his work, at the time of her writing, in its third edition, had gone

¹⁷ Localisation occurs through localisers (Latour, 2005), that is geographical ‘plug ins’. To me, these could have been the unostentatious Midland office, distant from Perth’s physical centre of power in St George’s Terrace. A participant in my research alluded to the bounding by geography. He remarked on the efficacy of a change of venue for Perth Region NRM meetings from an outer suburb to prestige premises closer to the central business district from which the members could and did, easily go onto other meetings. There was higher attendance and greater social interaction. By greater connectedness and alliance with the prestige premises, the organisation became ‘bigger’ and more real.

That natural environmental management should be on-ground and primarily rural was reflected in the literature review as preliminary for candidacy. The idea of grant funding to research *peri-urban* NRM possibly results from this thinking.

through 38 printings, evidence of it being ‘of interest to a wide audience (p. 103), ‘widely used’ (p. 104) and was ‘welcomed as the nearest approximation to a practical textbook on areas where there has been an unmet need’ (p. 104). Stake was briefly discussed. His validity claim of ‘naturalistic generalization’ (p. 104), through which the research resonated with the reader’s experience enabling generalisation through understanding, was intimated to be scientifically suspect.

There is no agreement on whether case study is a legitimate social science research method at all (Yin, 1993/2003) so Yin’s research strategy was designed to counter this by producing reliable, more irrefutable results. Notable is Figure 4.2 (p.100) ‘Convergence of Evidence (single study)’ which shows the multiple sources and style of evidence converging on ‘FACT’, (upper case in text) with other non-convergent evidence from sub-studies leading to ‘conclusions’. There is no ‘naturalistic generalization’ here. The two authors were indicative as I painfully worked out, of two ontologies.

I first attempted to reconcile the irreconcilable. Specifically, the choice was between Stake’s phenomenological description, with ‘the case’ *bounded*, usually as a *site* within which the case emerged emically through continued reference to participant’s concerns and relations. This relied on extended access to participants, which was a logistical concern for my research. Stake suggests that there are three realities: reality #1 ‘out there and beyond ourselves, nothing more’ (1995, p. 100), and so he crosses the road carefully; #2 comprises interpretations of reality #1 which research will develop; and #3 ‘a universe of integrated perceptions, that is our rational reality which research will develop through clearer descriptions and more developed interpretations’ (p. 100).

The alternative was Yin’s positivist—post-positivist account which emphasised the experimental nature of the research design and allowed for exploratory case studies as proposed.

Yin frequently compares case studies with experiments, a comparison that is not salient to many others writing in this area, and the logic he follows has more in common with traditional discussions of “scientific method” than do many of theirs. (Platt, 2007, p. 104)

While there was room for studying relations, these were what occurred between entities such as organisations, countries, or people used as a defining unit of analysis rather than a site.

‘Case study’ was not the entity it had seemed. Of two eminent authors, one ‘bounded the case’ usually using a geographic site such as a campus, and one used a ‘unit of analysis’ which was

held constant. That is, the first considered change as internal to a stable organisation or site, and was concerned primarily with meaning, while the second considered change as external to a stable unit of analysis whether this was a trade flow or an organisation.

It was a shaky framework. Platt (2007) observes that 'case study' is a term that has been 'used in a variety of ways, not all of them clear, and some of them mutually inconsistent' (p. 100). It may be a complete package of a research method, or a 'passing description meaning no more than that the study is of a single case' (p. 100). Sometimes work which is not a case could be, or has been seen, as a case and vice versa. She notes the degree of variation in answer to the question of 'What is a case study' and the 'taken for granted' application and discussion of particular kinds in the discipline or sub-field.

Platt's review is arranged on disciplinary lines which are 'relatively coherent and distinct' (p. 100) with a further category of 'practitioner literature' including both Yin and Stake. That is, she divides 'case study' up according to how it is performed. If there had been one way to do it, all would have been well. That had been my previous experience with pilot studies for example. *Now* I can say that I made a logical typing error and confused 'case study' as one thing (the ostensive) with how it is done (performative).

Platt suggests that the history and theory of case studies largely reflects the broader tension between quantitative, that is experimental survey, and qualitative research. She distinguishes two streams in the literature, namely 'modern', that is, positivist or post-positivist which emphasise different method components and those with a single case, qualitative information and no experimentation, exemplified by Yin and Stake respectively. Qualitative research in the United States was then threatened by positivism which could relegate descriptive methods such as case study and interview to scholarship rather than science (Denzin & Ryan, 2007, Polkinghorne, 2006), a step backwards and evidence of a prevailing metaphysics.

It is one thing to know vaguely about ontologies, and adhere to one but quite another to be able to compare and contrast them even superficially, which I found I needed to do. Examining 'a phenomenon in its real life context' (Yin, 1993/2003, p. 13) is quite different from examining a case which 'must have its own purposes and self' (Stake, 1994, p. 236). A constructivist interpretation of the 'relations' in the research question would be at odds with a Yin style case study and a Stake style one would be difficult because of the locational qualities of the site when I wanted to know how these were joined interorganisationally.

In both, humans were endowed with agency and were doing the ‘relating’ of the research question. Constructivism would result in findings about interpersonal qualities and meaning such as trust and coercion but the ‘stuff’ the world is made of is the result of interpretation and not antecedent to it. Stake’s reality #1 is unusual in constructivism. Alternatively antecedent ‘stuff’ is ever-present as a stable inert, background, ‘independent of our actions and perceptions’ (Law, 2007b, p. 599) which will disclose ‘findings’ or ‘FACT’ if treated correctly. For a study of environmental management, I wanted neither to dispense with ‘stuff’ nor proceed along a Newtonian route of ‘an “entitative” conception of reality’ (Chia, 2009, p. 214). It was ‘entification’—the taking on of ‘entitative properties’—which needed explanation (Hernes, 2008, p. 30). To repeat, the choice seemed to be, between ‘meaning without object and objectivity without meaning’ (Latour, 2005, p. 205), or some other metaphysics indicated by the reference to Latour.

One possibility is that perhaps if ‘Perth Region NRM’ was too small, then it could be that two experts and me had simply been poor researchers, which could definitely be discounted for the other two. Law and Singleton (2005) were confronted with something similar in a study of Alcoholic Liver Disease (ALD) where they started to map its trajectory but as the research went on, realised that they were dealing with other phenomena which were related but not the same such as ‘alcoholic cirrhosis, alcoholic hepatitis or alcoholism’ (p. 341). After moralising self-criticism about being poor researchers, they realised that this was how it was. ‘The object we were studying was shape-shifting reality. [...] Maybe we were dealing with something that wasn’t definite and didn’t have a single form’ (Law, 2007b, p. 598).

An alternative possibility depends on a reality which is definite and may be known and further, it is single and held in common but with possible different perspectives of it (Law 2004, 2007b). Accordingly if Perth Region NRM wasn’t known exactly, it was not because reality is ‘messy’ and that ‘things are at least sometimes vague and can only be known vaguely’ (2007b, p. 599) but that the researchers had different *perspectives* on it.

Object relations

Objects relations are hard to understand, so used are we to thinking about them as something akin to volumes or substances sitting in a location. I found Law’s analysis difficult and finally caught the general train of thought through Dugdale’s description of an expert committee’s negotiations for a consumer information leaflet. Her work appealed because both leaflet and

IUD were objects, like 'bus', simple and unmistakeable, and what's more, they were being talked about by a government committee so I could triangulate what was described in a carefully written article, against something I already was comfortable with. The topic was relevant to government collaborations and governance and in addition, the committee modelled a multidisciplinary task situation.

Performing the IUD. From examination of segments of committee talk, Dugdale proposed that the IUD, was not one object but several, or rather, both. Indeed discussion depended on the IUD being thought by the committee to be one thing, one single IUD, 'the' IUD, which could be talked about. However, in discussion it was *performed* as a series of different IUDs by the experts around the table, drawn from the community, government, health professions, industry and science. Indeed, she suggests that discussion would stop if there had to be agreement on one thing and that this 'suggests something about negotiation and compromise' (p. 125), namely that the objects talked about are both single and multiple which enabled the committee to complete its tasks.

Dugdale (1999) and Mol (1999) distinguish between the expert viewpoint of perspectivism, an optical metaphor, and the *performance* of different *versions* of an object. Each expert spoke about the IUD in a different way for example as a system of human and nonhuman parts; as just one of many devices needing to be administered; as an array of medical knowledge; and as one of many kinds of IUD with each having its own risk and benefits. From the specificities of the talk of each expert, Dugdale proposes that there was not one IUD, but half a dozen *different* IUD's but the talk was '*also predicated on the assumption that all its participants are talking about a single IUD*' (p. 125, emphasis in text) albeit one which was probably not physically present to point to. This is slightly different to ALD which Singleton and Law (2005) concluded wasn't single and definitely was never a 'thing', no matter how much they would have liked it to be one. However I was more after a general notion that objects are of many different kinds and none of them is 'simply located', like the IUD.

Dugdale observes that 'the conversation performs a kind of oscillation between the (presupposition) that there is a single object on the one hand and the performance of different objects on the other' (p. 125) with both performed simultaneously. 'Oscillation' I think captures the flick of thought backwards and forwards which I needed to think 'IUD', but risks marooning the IUD in two single space time coordinates implying that there are two *entities*, which is not what is required. She does not enlarge on the metaphysical significance of these occurrences,

and it is optional here to know the detail of Whitehead's difficult eternal objects, but I have outlined these and their function in the footnote below¹⁸ for completeness (see also p. 116).

The IUD is everywhere absent but present to each representative who performs it by their talk, that is, single in its absence but multiple in its presence. *'Negotiation and compromise is oscillatory in character rather than being convergent'* (p. 125, emphasis in text) as generally described. *'The objects mobilized and then secured in the negotiation [are] always both singular and multiple'* (p. 125 emphasis in text).

Perth Region NRM was both single (we all talked about 'it') and multiple as indicated. I have privileged Dr Hamilton's performance of it but perhaps in other circumstance, the two experts in community psychology and planning might have prevailed in Mol's 'ontological politics' (1999, p. 74). Similarly performance by discipline differentiates kinds of case study (Platt, 2007), that is relations make objects and disciplinary relations made 'case study'. The lesson from Dugdale is that objects make relations both from the gathering around the table to discuss a leaflet about the IUD, to the materiality of committee member formation through documents, catering arrangements, architecture, ticketing and access to airport business lounges, and so on which she also discusses in her article.

In a modest way they made my relations with my supervisor. I used the IUD, the Boa Vista forest and the chain of care as short hand in our discussions. When I spoke about 'the IUD' she responded by talking about 'the IUD'. I asked her what she thought I meant when I used 'the IUD', and she said at first a birth control device but later as a 'coded reference point to deal with a whole understanding about different relations with an object' and the 'Boa Vista forest' was another, but with the translation or movement (personal communication, 14 December 2012). Precisely, just like the committee members. I did not set out to do this as a research technique but with hindsight realise how valuable it was as in effect I used these instances as research stabilisers—black boxes—guides and points of reference. They covered a lot quickly, an

¹⁸ 'The IUD' or 'the river' is an eternal object which 'grants definiteness to an entity by enabling pure potentiality to be actualized on given occasions' (Halewood, 2011, p. 74). 'The IUD' is 'out there' as pure potential and by talking about it on a particular occasion, we actualise that potential. 'Eternal objects perform the role of "logical variables" which underpin the whole notion of process: "the characteristic common to all eternal objects [is] that it introduces the notion of logical variable, in both forms, the unselective "any" and the selective "some"' (Halewood, 2011, p. 74 citing Whitehead, 1929/1978, p. 114, emphasis in text). The IUD became more real by enabling its performance as both single (it, the, or any IUD) and multiple (health IUD, medical IUD, device IUD, some IUD).

everyday practice for example, as ‘case study’ or ‘administration’ or ‘sustainability’. The higher order concept is of a different logical type to instantiations of it.

Whitehead’s Fallacy of Simple Location

To me the Perth Region NRM problem exemplified Whitehead’s ‘fallacy of simple location’ (1920/1964), that is, it was located in one place, its office, when this object was not in one place at all but *influencing* elsewhere. In terms of later Whitehead (1929/1960), ‘Perth Region NRM’ is located but also in a sense *everywhere*. Network covers this notion to an extent but was not a term Whitehead used although actor-network theory does, particularly Latour, who draws on Whitehead’s ‘Process and Reality’ (1929/1960) in a relatively straight forward way.

Simple location is important in the dissertation as it caused me to reconsider what I was doing after consideration of case study and Perth Region NRM. It epitomises an ontological problem examined throughout the thesis via Latour and actor-network theory, that is, process ontology, as an alternative to positivism or constructivism. Consequently, the practice disciplines confront a methodological problem because of materiality when constructivism is used (Stake) and meaning when a more experimental approach is used (Yin) a problem which cuts right through environmental studies and practice.

A. N. Whitehead was a prodigy, and perhaps unique in recent Western thought. He was a physicist, mathematician, philosopher, and a historian and philosopher of science. What I have read of his work is concise, subtle and difficult.

Whitehead considered his fallacy of simple location to be of ‘central importance to his philosophy’ (Alston, 1951, p. 717). He first outlines it in ‘Concept of Nature’ (1920/1964) and later in ‘Process and Reality’ (1929/1960, p. 208) refers readers to ‘Science and the Modern World’ (1925/1932) as his last word on it. However Alston regards this as ‘in itself unintelligible’ (1954, p. 334). To the philosophical mind there is a considerable difference, between the earlier (1920) and later (1929) versions with the 1925 work containing elements of each (see Alston, 1951, 1954). I have described the earlier version first as I found it easier to understand and applicable to the situation of Perth Region NRM.

Although an object may correctly be thought of as having a location, it should not be thought of as being ‘simply’ or better, ‘merely’ located in that place. Whitehead describes the waves on the Cornish coast as evidence of a gale in the Atlantic so that the gale is thus in both places: he

steers clear of cause. He distinguishes events from objects and while an event can only be in one spatio-temporal region, an object can be in many regions.

Science and philosophy have been apt to entangle themselves in a simple-minded theory that an object is at one place at any definite time, and is in no sense anywhere else. This is in fact the attitude of common sense thought though it is not the attitude of language which is naïvely expressing the facts of experience. Every other sentence in literature which is endeavouring truly to interpret the facts of experience expresses differences in surrounding events due to the presence of some object¹⁹. An object is ingredient throughout its neighbourhood and its neighbourhood is indefinite (Whitehead, 1920/1964, p. 145).

Whitehead regards situations such as the gale being at a certain sort of latitude and longitude (or Perth Region NRM *at* Midland), as a ‘peculiar’ and ‘in a sense more concentrated’ form of ingression (p. 146). Ingression is the modification of an event by the being of an object. This ‘special’ form is the ‘relation of situation’ (p. 147). He refers to his ‘double use’ of the word ‘situation’. The object is also situated in an event, the ‘situation of the object’. He states that it seems obvious that an object (e.g. the gale) *is* in such and such a position and that it is *influencing* events in a totally different sense. One could think then that the relations of situation and influencing are not generally the same sort of relation and should not be subsumed under the same term, ‘ingression’. He believes this notion to be mistaken and that ‘it is impossible to draw a clear distinction between the two relations’ (p. 147).

The difficulty arises from refusing to admit relations at all ‘except that of substance and attribute’ (p. 150), or disallowing relations of more than two relata. So thinking of Perth Region NRM in the relation of situation is like thinking of it as its office in Midland. That it did its work by influencing people internationally, around the state and Australia, and throughout the metropolitan area, was overlooked through the use of, to repeat Whitehead’s phrase, ‘simple minded theory’. Nor as far as Perth Region NRM is concerned, is this influencing trivial as much effort went into it, by inference as expansion and self-maintenance but also as stated in

¹⁹ An actant or actor is someone or something which makes us act; it is an agency, that is, an event. Having marinated in actor-network theory for a year and while revising this little piece from March 10, 2010 about Whitehead and the gale, it finally dawned that this was what *Perth Region NRM* had done in *my* thinking, that is, it had agency, ‘push back’ (17 February, 2011). It had made two people do something, namely mistake its nature and write a proposal for grant funding based on it. Whitehead in his metaphysics uses ‘prehension’ to describe relations as feelings, exchanges with other entities. I felt for the first time that I really had understood agency in this sense of an object (Perth Region NRM) making me do something, as it ingressed into my experience. Following Latour, I have here briefly written about ‘which trials produced which observable traces’ (2005, p. 53) and later discuss objecting objects. De Cock and Sharp (2007) advocate the researcher taking their audience alongside the subject processes and this is an example.

interviews for example: ‘Swan were always negotiating their place in the sun’ (interview). As mentioned before, meetings were shifted from Perth Region NRM offices in Midland (situation of the object) to a more central and prestigious location resulting in increased attendance and membership of other networks (situation of influencing).

Simple location arises from a Newtonian view of objects as discrete, distinct, entities, between which there can be no relations as objects and subjects or objects and objects. This is important for this dissertation on relations but also accounts for how organisations relate in for example intergovernmental relations, as has been touched on in discussion of Robins et al. (2011).

Whitehead’s unique terminology encompasses his evolving thought. Some crucial moments are compressed in this and the next two paragraphs which are then applied to the IUD example. Importantly when an actual occasion is referred to, it has an ordinary language meaning.

In ‘Process and Reality’ (1929/1960) ‘actual entities’ replaced the earlier ‘sensible objects’ to eliminate reference to sense perception and the epistemology it represented. Movement was emphasised. An actual entity never moved. An ‘actual occasion’—of movement—replaced ‘actual entity’. Actual occasions build up the actual world. In Whitehead’s important ontological principle, ‘whatever things there are in any sense of “existence” are derived by abstraction from actual occasions’ (p. 113). A nexus of these actual occasions was an event. ‘An actual occasion is the limiting type of an event with only one member’ (p. 113).

Whitehead’s concrescence is the process of becoming a subject through the combining of different experiences into something new. ‘There is no subjectivity prior to this combining’ (Halewood, 2011, p. 28, citing Whitehead, 1929/1978). The IUD and the leaflet become *the* IUD and *the* leaflet through, for example, continuing discussion of them: on each occasion they become a new ‘superject’.

It is fundamental to the metaphysical doctrine of the philosophy of organism, that the notion of an actual entity as the unchanging subject of change is completely abandoned. An actual entity is at once the subject experiencing and the superject of its experiences. It is subject-superject and neither half of this description can for a moment be lost sight of. (1929/1960, p. 43)

In other words, the IUD became a subject and more real by bootstrapping, through each actual occasion, its *entire history* of becoming in previous actual occasions, as well as potentiality from experiencing. ‘Being is constituted through the launch of the past into the future’ (Halewood,

2011, p. 28).

Whitehead's 'extensive continuum' enables the IUD to be both here and everywhere, or multiple as different versions and single as one thing which all can talk about, 'out there' somewhere.

Every actual entity in its relationship to other actual entities is in this sense *somewhere* in the continuum, and arises out of the data provided by the stand point. But in another sense it is *everywhere* throughout the continuum: for its constitution includes the continuum; also the potential objectifications of itself contribute to the real potentialities whose solidarity the continuum expresses. Thus the continuum is present in each actual entity, and each actual entity pervades the continuum. (1929/1960 pp. 104-105, my emphasis)

It is the most general form of order with which the becoming of each occasion has to conform as it 'underlies the whole world, past, present and future' (p. 103). At the risk of drowning in quotes but Whitehead really says it best: 'The extensive continuum is that general relational element in experience whereby the actual entities experienced, and that unit experience itself, are united in the solidarity of the common world' (p. 112).

With the earlier theory, Dugdale's example of the IUD can be considered as a kind of object with specific relations to events which are not those of another kind of object. 'There are obviously very various kinds of objects; and no one kind of object can have the same relations to events as objects of another kind can' (1920/1964, p. 145). But each single kind of object has 'different modes of ingression into different events' (p. 145). So the IUD, like the gale, ingresses into different events including those around the conference table, not to mention the circumstances of the meetings with lunches, confidentiality procedures, minutes, committees elsewhere, manufacturers and so on.

In early encounters with her study I relied on the gale/waves analogy but I later found the extensive continuum useful as enlightened common sense. Whitehead observes that it is the most natural thing to be vaguely aware of the entire world but simultaneously occupied with a part of it (1920/1965). The IUD was vaguely out there but also in here as that which was talked about according to our standpoints and 'potential objectifications of itself' (1929/1960, p. 105). It could occupy different spatio-temporal systems concurrently. The difference between earlier and later 'location' is of course important, but not quite so important as despatching 'simple location', which either does, as Alston (1954) points out.

Another example is a description of a village water pump (de Laet & Mol, 2000) which in the relation of situation as influencing was a focus of national policy directed at fostering village collective action, as they describe, but it is also in the relation of situation of the object because it is obviously in a particular place pumping. In Whitehead's terms, there were different modes of ingression into different events.

Notably each time the pump broke down it was patched up with whatever was to hand and so evolved but with relation-changing work to enable this to happen. It both changed and stayed the same but was still identified as a village water pump. Whitehead uses what he regards as a minor example of the Greek language in the life of man from its first use until its last. The set of occasions from the first to the last 'constitutes a society in reference to the knowledge of the Greek language. Such knowledge is a common characteristic inherited from occasion to occasion along the historic route' (Whitehead, 1929/1960, p. 137). The water pump has different modes of ingression into events (earlier theory) such as providing clean water as well as the doings of people who patch it up in so many various ways. Considered through later theory, it exhibits the 'common characteristic' of 'pumpness': it still *performs* as the pump, as a society, while making changes to its particular circumstances to do so. 'Pump' implies some thing but a much altered thing responding to very altered successive occasions. The 'Greek language in the life of man' is paradigmatic as it 'holds its shape' (Law & Singleton, 2005, p. 335) its 'Greek language-ness' over thousands of years and billions of occasions as a 'mutable mobile' (de Laet & Mol, 2000, Law & Singleton, 2005, p. 338). The 'becoming' of the 'actual entity' creates what it is, not through an essence but continuity.

Latour's work (particularly 1999, 2005) has been the mainstay in developing a clearer understanding of relations for this thesis, earlier understood as personal and interorganisational, then as an actor-network, and intermittently as Whiteheadian. Like Whitehead, Latour emphasises that prior judgements should not be made as to what comprises reality, a lesson I learned from the Perth Region NRM exercise.

Thinking about large and small in a Latourian way would mean distinguishing between them on the basis of the number and kind of relations between actants. These last only for the duration of their alliances and the more of these, the more real and more enduring—'bigger'—they are. To use an example from Latour (2005) but with early Whitehead terminology added, Wall Street is a few blocks (situation of the object) but that is not what we mean when we say 'Wall Street' referring to a global trading network worth trillions of dollars (situation of influencing). *How*

'Wall Street' *becomes* 'trillions of dollars' is explicated by actor-network theory (Latour, 2005). Perth Region NRM became more real by extending its network through contracts for services; documented partnerships; memoranda of understanding with other networks; traditional reliance on volunteers and their attachment to particular sites and things associated with them; alliance with the iconic Swan River itself and the much-loved river dolphins; attendance at conferences and meetings; liaison with political figures; contributions to government workshops; sponsoring academic research; project management; shifting some meeting locations to a more central site; and publications, not to mention correspondence of all sorts and talking to people like me. They seemed small as relation of situation of the object but as relation of situation as influencing, much larger. These activities were *how* it became and made it what it is.

Implications for the research

It was proposed to use a simplified model of the interactions between government (that is, the Commonwealth and states) as one actor and the regional body as another. The objective of the research was to describe how the *relationships* between senior members of two levels of government and an incorporated body in an environmental collaboration influenced the construction of adaptive management, a method of environmental management colloquially described as 'learning by doing'. Theories of organisational and psychological learning would enable understanding how a catchment body 'actor' perceives the requirements, what it has done in response and what the impact of this may be on the other 'actor' for round two. What are the relationships between the two and do they foster learning? 'Actor' was used in the usual sense without reference to actor-network theory, and 'relationship' as interpersonal.

This thinking is reflected in a proposal to the Department of Psychology (13 June, 2008) in which I referred to 'both sides of the network' by analogy to two organisations with interorganisational learning going on between them in some interstitial space. Organisational learning has relied on there being an entity called an organisation until relatively recently (1993) when 'interorganisational learning' occurred as a unit of analysis (Holmqvist, 2003). Holmqvist proposes that rather than continue to keep intra-and inter-organisational learning separate, the two processes are 'deeply interlaced' (p. 95).

Subsequently I redescribed the project as one large case of interorganisational relations in a proposal to the Division of Health at Curtin University (July 8, 2008) and used the term 'network' as one form of interorganisational arrangement, that is, governance, contrasted with markets and hierarchies. What network meant was vague but I had a lingering attachment to

Perth Region NRM and government as 'placed' material entities, the first near Midland, the second in cities or 'out there' in the extensive continuum. Two consecutive literature reviews for the two part candidacy process in the Department of Psychology reflect the conceptualisation. Thus, much work had already been done in preparation of the documentation on what the form of Perth Region NRM was, and case study as a method contributed to this with its emphasis on bounding the case. Similarly, in organisational studies, *ways* of studying may become places so a study of Volvo becomes a study of facilities in various locations (Czarniawska, 2004b, 2008). In studies of NRM the same holds true with location pre-eminent (Harrington, Curtis & Black, 2008).

PROCEED AS PLANNED OR INQUIRE FURTHER?

Research worlds are constructed, not in the sense that they are arbitrary but through the work researchers do to understand their laboratory observations (Latour & Woolgar, 1979).

Both scientists and observers are routinely confronted by a seething mass of alternative interpretations. Despite participants' well-ordered reconstructions and rationalisations actual scientific practice entails the confrontation and negotiation of utter confusion. The solution adopted by scientists is the imposition of various frameworks by which the extent of the background noise can be reduced and against which an apparently coherent signal can be presented. The process whereby such frameworks are constructed and proposed is the subject of our study. (p. 36)

In terms of science and technology studies (STS) I had been converting relations in the laboratory from non-trace-like to trace-like form, primarily through 'inscription devices' (Latour & Woolgar, 1979) which were not something like the Large Hadron Collider but my graduate student proposals. Inscription devices included practices such as seeking support for the proposed research from, for example influential others—the university committees—and solidarity with other researchers, that is, supervisors, and selection of 'the method'. Each of these was a noise-excluding framework.

There were others. The inherited temporal structures of dissertations whether as grounded theory or the sequence Problem/ Aims/ Literature Review/ Hypothesis (Proposition)/ Method/ Results/ Discussion/ Conclusion as produces 'as many problems as it solves' (Czarniawska, 2004a, p. 124). Research seldom goes as planned (Kvale & Brinkman, 2009). The research process continually changes through changes of design, reformulation of hypotheses, and surprises introduced by a resisting reality. The dilemma is whether to incorporate these or smother them and agonise over it (Czarniawska, 2004a). Czarniawska suggests that ultimately

the criterion for research success is its persuasiveness as do Latour & Woolgar (1979), Latour (2005) and Yin (1993).

Platt (2007) in arguments for and against qualitative and quantitative case studies suggests a 'horses for courses' approach and reliance on sophisticated research methodologies. However these simply delay the inevitable realisation of a hobby horse of Latour's (1993) namely that 'we have never been modern' the title of his book on the 'pointless fiction' (Harman 2009, p. 57) of the separation of the world into two zones, nature and culture, that is, Whitehead's bifurcation of nature.

Finally case study is but one example of the persistent difficulty in naming and hence differentiating and doing, qualitative research methods generally (Sandelowski, 2010). The name 'qualitative research', as with the IUD, stands for what Sandelowski and Barroso (2003), p. 918) regard as 'profound differences in this methodological domain' (p. 918) leading to 'highly idiosyncratic approaches to redoing and evaluating qualitative research' (p. 918). Ostensibly there is a real and fixed classification system of the world of inquiry within which each method is simply situated. The real world effects of this include text books for students who are directed to 'just follow the method'. However 'there can be no execution of any method which perfectly conforms to any textbook depiction of it. Indeed there is no *it*; there is no bounded entity constituting a pure method (Sandelowski, 2010, p. 78, emphasis in text). 'Case study' was manifestly not an 'it' but took on significance depending on which network of relations was engaged and recognised, whether these were post-positivist, postmodernist, practitioners, psychologists, and so on, and the performance of the researcher, 'along its historic route' (Whitehead, 1929/1960, p. 137).

DOING PROCESS AS CONNECTIVITY

Following Hernes and Weik (2007), Table 2 classifies four 'distinct "poles"' (p. 262) in process thinking on organisational studies and sheds light on issues raised so far. This classification usefully distinguishes kinds of process enabling comparisons of them, their role in linking organisations. Citation of some prominent authors on each enabled examination of methodological similarities and differences. Bateson was unmentioned but his work on learning and logical types especially, fits the category of endogenous connectivity alongside Weick who is mentioned and was influenced by him.

Importantly they note that there is ‘no “natural divide” between process and entity’ (p. 253) but rather more or less stabilisation of processes making things what they are through their becoming. The kind of analysis hinges on what is allowed to remain stable or to change, a crucial difference, which divides an exogenous and endogenous process focus both methodologically and in the arguments available.

Table 2
Organisations as Process

Exogenous: Processes occur within relatively more stable contexts as either the organisation or institutional environment and refer to something exterior to them. Organisations or environments are contexts for interaction and the pattern of movement reflects the identity of the organisation.

Exogenous 1. Process as flows within a context of relatively stable entities against which they are interpreted. Multiple types of flows constitute the particularity and identity of the organisation. Flows may be physical (such as emails) or impressions and behaviours. A flow may be used as the unit of analysis in a case study against a larger stable context.

Exogenous 2. Process as problem solving or programs directed at organisational change. Programs create the behaviours and rituals required to undertake them. Stabilisation occurs through matching programs to an external environment or through standardised, labelled versions (e.g. Total Quality Management, Corporate Plans, annual general meetings) which can travel.

Endogenous: Process interacts with itself and its own past, as the basis for further process. Entities are both constituted by process and simultaneously constitute process.

Endogenous 1. Process as connectivity. Organisation unfolds through ‘relations between heterogeneous elements’ (p. 261) such as quasi-objects. The environment does not so much determine as simply exist. Stabilisation occurs through the readiness of connective elements to connect and maintain connection, ensuring and enlarging the network. Failure is destabilisation and dissolution.

Endogenous 2. Process as recursive reproduction. Organisation unfolds through ‘reproduction around a relatively stable evolving structure’ (p. 261). Organisations are temporary and are constantly constructing and reconstructing.

Source: Based on Hernes and Weik (2007).

For example, I have referred to difficulties encountered in reconciling the case study approaches of two authors, namely Yin and Stake which the distinction between an exogenous and endogenous focus clarified. Yin works within the former where environments, that is, exteriority, whether as organisations themselves, or the institutional environment, remain relatively stable contexts of organising and the interactions between them may be studied as

changing flows. Stake's cases have more in common with endogenous organising which feeds on itself over time, that is, 'the process is its own rationale' (Hernes & Weik, 2007, p. 258). The case unfolds for the study's duration. Exteriority is 'bounded' as a site, whether as a human or a school and the interactions, usually between people, are allowed to change.

The horizontal and vertical connection and coordination problems in NRM flagged in the thesis' introduction, may be considered using endogenous connectivity. Levels now need to be explained and the 'how' of coordination considered more specifically.

While relations were the primary thesis topic, I had a niggling concern about implementation of the NHT2/NAP *program*. 'Process as programmes [...] consists of chains of actions designed to solve problems facing the organization' and external to it (Hernes & Weik, 2007, p. 265) contributing to an idea of how the organisation should be organised. However, NHT2/NAP was not about government organisation change, or improved public administration per se. Further the Commonwealth could not interfere with state organisations under the Australian Constitution. Nonetheless the Commonwealth government regarded NHT2/NAP as programs performed by Commonwealth agencies (ANAO, 2007-08).

The problem was environmental degradation facing the Australian Federation. Thus in 2004-05 the ANAO expected the NAP policy reforms to address a shared government problem, namely dry land salinity, by the program measures and the newly formed or up-sized regional bodies. In 2007-08, the ANAO reported that some resource condition targets were unachievable in the program time frame, potentially taking over 200 years for outcomes (p. 19), tenaciously retaining the program notion while acknowledging its inadequacy. In Chapter 6 (p. 181) I will talk about gold standards in health care (Law, 2004) where it is not the standard that could be wrong but the patient and here is an instance of it which could be researched further.

There has been programmatic standardisation in Australian government organisations for decades through a form of strategic/corporate planning applied to regional planning strategies. This planning can be summarised as a sequence of vision, issues (opportunities and threats), objectives, targets, actions, and outcomes evaluated with reference to pre-established performance indicators. 'Program logic' refers to the total sequence from program activities to expected consequences. These plans or programs do indeed provide a recognised set of process instructions which 'perform according to some predefined structure with a view to solving problems' (Hernes & Weik, 2007, p. 256). However, the operative word is 'perform'.

The ANAO (2004-05) found considerable variation in arrangements for NAP. Some regional plans were started from scratch by inexperienced regional groups ranging in size from 3-35 staff. Access to reliable data was very mixed and the ANAO noted program impairment because of lack of a knowledge support system and inadequate links between on-ground managers and research providers. For these and other reasons, including tense Commonwealth/state relations, only 62 percent of regional plans were accredited in 2004, with the remainder due half-way through the life of the program. Indeed it may be asked what actually constituted the program and when did it become this entity.

NHT2/NAP became 'standardized and categorized under [a label] allowing [it] to travel' but with missed connections, long waits, and lost luggage rather than 'the coherent actions leading to promised outcomes' (see Hernes & Weik, 2007, Table 1, p. 261) of a program. The originating constitutive activities comprising NHT2/NAP were rudimentary consisting of bilateral and other agreements of the federation. In Western Australia, community based bodies were contracted for the delivery of 'challenging outcomes' (State Natural Resource Management Office, 2010, p. 19) and managed substantial funds through regional strategies which they first had to develop, usually with little or no experience of planning, and scarce training and back up. Commonwealth agencies experienced difficulties too: 'The delivery of the program through regional bodies is a new and evolving process for [Commonwealth] agencies' (ANAO, 2004-05 p. 18) with program delays and contentious intergovernmental relations making progress 'a challenge for agencies' (p. 92). Subsequently the ANAO found substantial shortcomings in plan quality, promoted by unclear instructions; different expectations between states; and acceptance of plans which didn't meet stated criteria amongst other 'significant limitations' (2007-08, pp. 61), including lack of good quality data.

On balance in my view, the NHT2/NAP program applied in Western Australia is better considered as endogenous connectivity by members of strategic alliances between Commonwealth and state, and state and regional bodies. NHT2/NAP was stable enough to be labelled but its travel was generative and discontinuous, more ALD-like, a flickering fire object: these are discussed in Chapter 6.

Taking into account, amongst other evaluations, the ANAO's inability to find sound reform program results because of multiple failings, it could be asked why programs like this one continue to be undertaken. NHT2/NAP was well thought out, and considered national lessons learned including concern that scattergun grant funding in NHT1 would not result in the

concerted effort required to make large scale landscape changes. The rationale for the program was well supported by research, evaluations, broad consultation, and the support of Australian and State/Territory Ministers at the time for regional NRM program delivery (ANAO, 2007-08). There is no quick answer but a start could be made by looking at programs first as the answers to dilemmas and second as subject to the ineluctable dialectical forces of strategic alliances (de Rond & Bouchikhi, 2004).

Last, the quotation from Todes (2001) heading Chapter 1 speaks to a research and existential stance applicable to programs/connectivity. ‘We need a new way or ways of looking quite different from those we already embody [...] to discover what it “is” that we want to get’. There is a difference between ‘deriving something unknown from an array of data already known’ (Shotter, 2009, p 233) and being oriented enough so that the ‘data relevant to achieving our goal can be brought to light (and then, be applied to solving the problem)’ (p. 233). Much of the data was not ‘ready known’, and participants were often quite simply *mapping*²⁰ as will be demonstrated.

Wayfinding employs no directional sequence of plotted positions, as in navigating step by step through say, a method, but ‘coming-into-sight and passing-out-of-sight’ (Chia & Holt, 2009, p. 164). The strategy-in-practice or research-in-practice or, to an extent, policy-in practice, is ‘not a process of locating positions using pre-established reference points but is a [...] dynamic, evolving and self-referential process of discovery and self-clarification that is never complete because things are always turning away [from the just seen] (p. 164). My notes on case study show too well its ‘turning away’ as a known set of firm positions which I could use to do one. As an objecting object which did not fit my preconceptions it made me keep looking, searching for wholeness.

As wayfinding is repeated, some regularities start to be ‘mappable’ and *cartography*, usually textual and relatively more universal, is born. Then it is but a step to *navigation* between expected regularities, ‘landmarks’. Navigation requires ‘knowing *before* we go’ (Chia & Holt, 2009, p. 164, emphasis in text) while wayfinding involves ‘knowing *as we go*’ (p. 164, emphasis in text). Like Todes, Chia and Holt observe too that the answer to ‘where am I’ in wayfinding is

²⁰ This mapping is performative and not inscriptive, quite different from cognitive mapping. As a personal response to a terrain, it relies on the ‘painstaking task of noting, internalizing, and memorizing each little success in wayfinding’ (Chia & Holt, 2009, p. 166). Latour (2005) would approve of this one-step-at-a-time behaviour as quintessentially ANT-like.

not locational but ‘the sense of familiarity and comfort that we feel in knowing where we are’ (p. 164)²¹.

Law (2004, 2007) and Law and Singleton (2005) make the contrast clear between navigating and wayfinding in their story of ALD. They wanted to be methodological navigators, imposing preconceptions and forcing reality to comply, but their proposed single ALD was a multiplicity which they had to *follow*. While starting as inscriptive mappers of ALD, reality refused to be mapped inscriptively so *they* had to change. Bricolage is an asset in wayfinding and that is what Law and Singleton used to encompass unanticipated novelty by using allegory and a proposed fire object to resolve a navigational impasse

These metaphors precisely state my initial dissertational wayfinding. What I ultimately realised I was doing was moving stepwise using something more or less certain as a platform for the next move. Wayfinding is but one way of alluding to a study of endogenous connectivity. ‘The process becomes itself [sic] own rationale. In the absence of exogenous factors, the process interacts with itself, with its own past, carried forward as a basis for further processes’ (Hernes & Weik, 2007, p. 258). Each little wayfinding success is foundational for the next.

CONCLUSION

‘Methodologically speaking [...] a study always develops in ways unforeseen at the beginning [...]. The story of methodology *is* the story of the study’ (Agar, 2004 cited in Sandelowski, 2010, emphasis in text). In this chapter I have outlined the emergence of the research through encounters with ‘objecting objects’, discussed in the next. Objects and their single and multiple location have been examined with the aid of the fallacy of simple location, a gale, a multidisciplinary government expert committee, and a water pump.

The researcher influences the research and in actor-network theory, is regarded as part of the network (Ruming, 2009). The bootstrapping of process as connectivity requires indication of the researcher’s participation but not too much. Some events must be ‘black boxed’ a Latourian term used to describe sequences of events which have been stabilised and now count as one fact

²¹ Regional participants in a study of NHT2/NAP talked about ‘comfort’ rather a lot (Johnston et al., 2006). They were ‘feeling uncomfortable’ (p. 17) talking about certain issues; wanted ‘increasing community “comfortableness”’ (p. 21), and envisaged a ‘comfortable future’ (p. 92) in which ‘we know where we want to go and everyone is comfortable with where we are going’ (p. 180). I thought that this was a legacy of a former Prime Minister who wanted everyone to be ‘relaxed and comfortable’ citizens in a domesticated nation but realise now there is more to it. They were quite simply *mapping*.

(see 1987 for the story of the Dissenter who tries to unpack some). 'Case study' is one of these until it is questioned.

In the next chapter, problems posed for the emergent design of the study are examined with the help of another handy classification (Weik, 2006). Methodological choices are outlined and the first three of Kvale and Brinkman's seven stages of interviewing (2009) are traversed.

Chapter 4: Research Methodology I

INTRODUCTION

In this first chapter on method, the research purpose and reasons for adoption of actor–network theory, chiefly Latour (2005), and the advantages and disadvantages for the research are outlined. Whitehead’s neglected metaphysics is situated in relation to the Cartesian metaphysics usually encountered in social science, which divides the reality of science from the reality of human experience. This division is, to paraphrase Stenger’s observation cited earlier, radically incoherent and endemic in modern thought unnecessarily causing problems (2008), especially when meaning and objects need to be studied together as in the practice disciplines.

Interviewing as the principle method proceeded in four of the seven stages outlined by Kvale and Brinkman (2009). It is methodologically consistent with actor-network theory although with some qualifications (Ruming, 2009). These stages follow the chronology of the conventional form of a thesis or article and expeditiously cover expected procedures in interviewing.

Stage 1, Thematising of this research has been described in Chapters 1-3 and is briefly recapitulated below. Stages 2-4 (Designing, Interviewing and Transcribing) are outlined below. The ethics of interviewing are integral at every stage, as will be discussed, and are not simply an adjunct to ensure compliance with institutional ethical requirements.

Procedures for Stages 5-7, Analysis, Verification and Reporting, are described in Chapter 5. A branch point occurs at Stage 5, Analysis, in which analysis and method are unified as description (Latour, 2005). Kvale and Brinkman state that eclectic analysis of interviews is common and unexceptionable in an exploratory interview study. Bricolage which they include as a form of analysis, is discussed.

Their main emphasis is on the semi-structured life world interview drawing on phenomenology, said by some to be a near relation to actor-network theory (Ihde, 2009). Not near enough according to Latour (2005) as it excludes nonhumans. Kvale and Brinkman unintentionally provide examples by citing Latour (2000, 2005) but erasing nonhuman objects (see also Kvale, 1992).

Sandelowski developed ‘qualitative description’ (2000, 2010) in response to a need in the health disciplines to enable field studies with some, but not much, interpretation. Determining the extent of interpretation is difficult and is touched on. It is important in actor-network theory as the researcher takes care not to interpret participants’ metaphysics. It is also a precursor to using abstraction as a method to condense pages of interview answers from the question on adaptive management in order to translate the data into something more easily compared.

Some unusual analytical techniques from qualitative research have been used in the analysis, together with a model based on Latour (1999a). These are outlined at the end Chapter 5. Stage 6, Verification is described through each stage. Stage 7, Reporting has special status in actor-network theory as the report is the actor which will connect with others, making it more real—or not.

Research purpose and adoption of actor-network theory

The *research objective* of this exploratory study was to describe how two levels of government and an incorporated catchment body (Perth Region NRM) implemented adaptive management in an environmental collaboration. The purpose was to understand how state and Commonwealth governments and Perth Region NRM, a non-statutory catchment group, interacted in effecting NHT2/NAP. Why is this important?

Lockie (2007) identifies ‘a large gap’ between innovative environmental social theory such as actor-network theory and their practical application to ‘environmental decision-making’ (p. 786). He examines the utility of actor network-theory in overcoming the dualism between nature and society and ‘facilitate discourse’ (p. 797) and concludes that it posits a spokesperson for creatures and ecosystems in sustainable NRM. Facilitating discourse is as Dugdale (1999) suggests, not a negligible accomplishment. Lockie’s ultimate aim is transformation of the ‘relationship between humans and their environment’ (p. 785), however the environment is no longer ‘out there’ but ‘in here’ as an increasingly explicit mediator rather than passive intermediary. The difficulties of the relationship have been well rehearsed.

The *research question* was: ‘How do the theories of action between government and regional bodies influence their relationships’?

The *evolution* of the method/methodology has been discussed and alterations to it and the reasons for them have been outlined as arising from relations between actants material to the

research. ‘Objecting objects’ challenged the researcher’s assumptions about the world and necessitated decisions about whether to accommodate the difference into a current routine or change her understanding of the world.

Nonetheless, the *aims* have remained the same, a study of relations using exploratory research. The methodology has changed to an extent for the reasons discussed, namely a change in ontology allowing for relations as processes occurring between humans and nonhumans, in which the nonhumans are essential to the action. Agency results from an assemblage of both in which the nonhumans may be decisive. For example a ‘speed hump’ used to slow down traffic physically retards drivers while a ‘Slow’ sign *makes* one a chooser (Latour, 2005).

The problems of the practice disciplines: Nature and Culture

Sandelowski (2000, 2010) developed ‘qualitative description’ because of difficulty *defining* qualitative research methods in her field, health studies, specifically nursing, and the significance of *naming* them, with research papers uniformly produced and presented regardless of ‘the stated or implied frame of reference or method’ (Sandelowski & Barroso, 2003, p. 905). What constitutes adherence to method/methodology is a ‘hotly debated’ (p. 906) in qualitative research.

‘Qualitative description’ differs from other kinds of qualitative, that is, descriptive research, chiefly because it is less interpretive while still naturalistic (in the field) characterised by ‘emergent design, purposeful sampling, minimally structured and open-ended modes of data collection, and textual analyses’ (Sandelowski, 2010, p. 81, see also Lincoln & Guba, 1985). Less interpretation was appealing, distancing qualitative description from phenomenology, which as stated previously is primarily concerned with human lived experience.

As with all qualitative research there is a preparedness to declare a research starting point in the literature review, for example, but an ability to move away from it if required by later investigation. Sandelowski refers to the inevitability of methodological border crossing, the dynamic nature of methods and the “‘intellectual craftsmanship” (Mills, 1959/1975²²) and care involved in bending methods to our will’ (2010, p. 82).

²² A page was not cited.

Sandelowski's move occurred against a background of *quantitative* description which was not exploratory because the study variables were predefined, and researchers were able to 'insulate themselves from data' (Becker, 1996, p. 56 cited in Sandelowski, 2000, p. 336). Qualitative description allows more room for the unanticipated, and descriptions are thicker than from quantitative description directed at a common data set such as surveys.

While qualitative description was one of the most frequently used methodological approaches in the health practice disciplines, Sandelowski (2010) found that it did not have the same standing as other qualitative methods and she regarded it as an unacknowledged method that already existed. In this paper she also observed that her 2000 article was one of the most downloaded and frequently cited in the journal *Research in Nursing and Health* suggesting that it met a need in the health practice disciplines where humans and nonhumans need to be researched jointly. There are signs in social science more generally, of the need to investigate and where appropriate, reconcile both human and nonhuman agency (Weik, 2006).

Recognition of investigative alternatives is indicated by references to Law (2004), Haraway (1991), Mol (2002) and Mol and Law (2002) in Sandelowski (2000), and Law (2004) in Sandelowski (2010). She situates the data for qualitative description as 'more or less accurate and truthful indexes of reality "out there"' (Sandelowski, 2010, p. 80). There is a nod both to 'stuff' and to interpretation but without further engagement with the ontology or metaphysics as discussed by these authors.

However, in the early days of this dissertation, when ontological and methodological choices appeared limited, her work was most welcome. Law contrasts 'the most common version of Euro-American metaphysics—the sense that the real is relatively stable, determinate, and therefore knowable and predictable' (2004, p 144) with that which is practised in its methods. The assumptions of one reality, 'independent and prior to an observer [and] 'definite in shape and form' are 'systematically breached and [...] the fact that this is happening is repressed or displaced into Otherness' (p. 145)

The relationship between metaphysics, ontology and methodology/method

The ontological arguments in social science research and academia devolve around the distinction between qualitative and quantitative research and category arguments. This doctoral research was started in community psychology where attempts have been made to differentiate it from 'the sterile research world of mainstream psychology' (Bishop, 2007, p. 11 citing Hayes,

2002), with quantitative methods predominating in the latter and efforts to introduce qualitative methods in the former. Bishop—a community psychologist—summarises intrusions from positivist research, such as preoccupations with sample size, validity, neglect of the influence of context because of the need for experimental control of variables, and so on. He describes an alternative world of individuals as sense-makers, and researchers as audacious participants in social change and in the creation of knowledge conceived as a social process, but matter is missing.

Sense-makers and matter are separated. As someone with biophysical science credentials but no particular attachment to the ‘hard’ sciences, and strong environmental convictions, I have pondered this for decades in my work life. For example, the organisational arrangements in the Department of Water (Western Australia) and CSIRO placed the comparatively few social scientists (including economists) in one group and biophysical scientists in others. Latour (1993) discusses the swings between nature and culture and a need to purify each from contamination by the other which this seems to exemplify.

He suggests that ‘nature’ and ‘society’ as ‘collecting statements’ (2005, p. 231) have disappeared and that ‘all *matters of fact* have become *matters of concern*—or philosophically, that *objects* have become *things* that is, issues, gatherings, assemblies of some sort’ (2007, p. 5, emphasis in text). The cosmological split between nature and culture may be continued as a contradictory oscillation or exploration started of another cosmology altogether.

Referring to Pepper’s four world views (1942/1970, 1966), Bishop (2007) argues for the need to recognise that qualitative and quantitative methods are incompatible because they are embedded in different epistemologies and ontologies with entailment between these. Assuming that constructivism is appropriate for qualitative research leads to perspectivism, namely that people see things from their own viewpoints, of which he approves.

But it may be asked what it is that they have a perspective of. As with the IUD:

It is the thing itself which has been allowed to be deployed as multiple and thus allowed to be grasped through different viewpoints, before being possibly unified at some later stage depending on the abilities of the collective to unify them. (Latour, 2005, p. 116, emphasis in text).

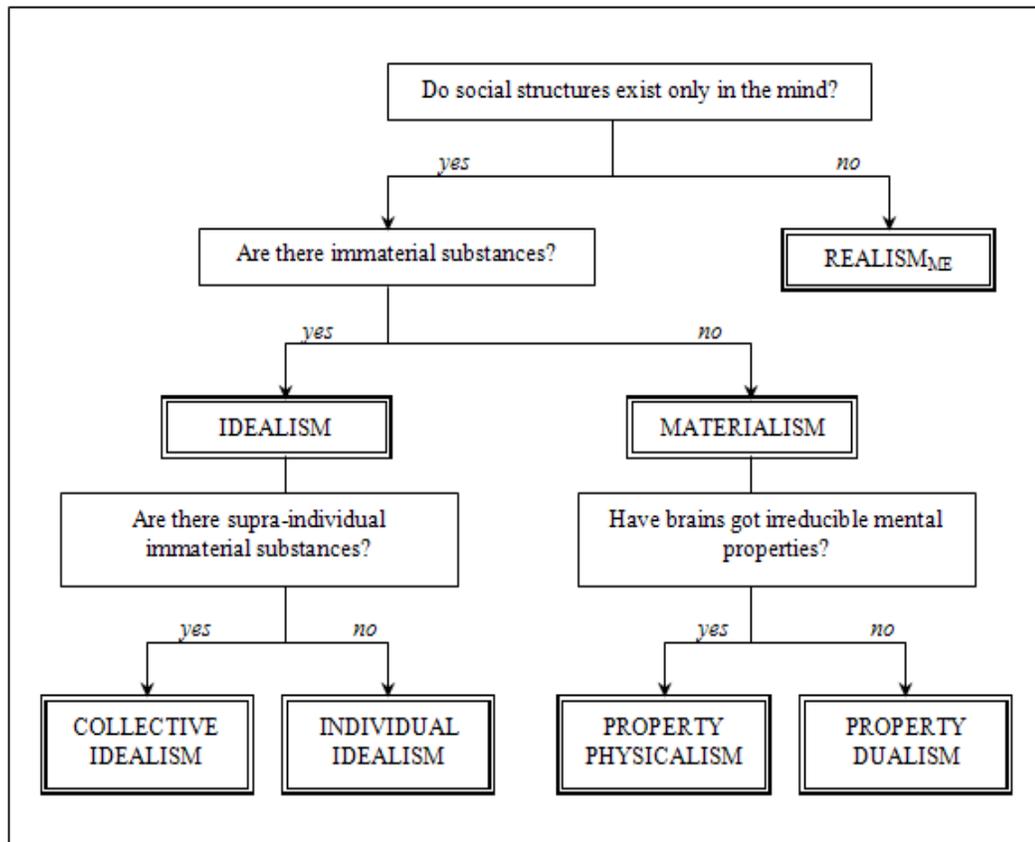
There are two messages here. Once again there are the two realities, one studied by scientific methods and the other *experienced* by humans. Division into ‘sterile’ and ‘productive’ depends

on which group you are in. But recall too that the IUD committee unified these and all the researchers and participants in Robins et al. (2011) did too, signified by willingness to use a shared language.

Finding a means of unifying them for this research was made easier by a schematic from Weik (2006)—Figure 1 below—which shows five metaphysics and their relation to each other, a boon to a non-philosopher like me. Each of these has its advantages and disadvantages, which Weik describes and demystifies. Rather than marking territories, as ‘sterile’ or ‘productive’, the classification points to the advantages and disadvantages of each allowing for productive comparison. These kinds of typologies—Table 2 based on Hernes and Weik (2007) is another—assist practitioners to make informed choices about what they are doing and why.

FIGURE 1

Five Metaphysical Positions on the Concept of Social Structure



Source: Weik (2006, p. 3) reproduced by permission of the author.

With respect to structure and agency, Weik suggests that the choice of metaphysics²³ determines the social theories derived from them as conclusions depend on premises. There are long-standing problems involved in whichever choice is made which she develops. I have not discussed these further as the main point is the distinction which puts metaphysics associated with Descartes on one side and what she terms 'realism ME', that is, medieval universalist realism, on the other. She states that her argument depends on logic because metaphysics cannot be proved or disproved.

For most theories, the metaphysics [...] is rather clear: when we refer to "agent" we mean a human being who has a body and a mind and/or brain, and the major debate centres on the extent to which this agent in his/her choice of actions and to what extent he/she is determined by social forces. This presents of course, the classic divide between "subjective" and "objective" theories [...] and the origin of the structure agency debate. However both sides agree on the image of a human being as "consisting of" body and mind, thus reproducing the classical Cartesian division. (p. 1)

The primary branch point in the metaphysical tree (Figure 1) responds to her first question: 'Do social structures exist only in the mind?' If, for example, universals such as social structures have an existence independent of the human mind, then Weik refers to Realism ME.

If the answer is 'yes', then the next is: 'are there immaterial substances?' 'Yes' leads to idealism and 'no' to materialism. Constructivism responds 'yes' to the question of whether there are 'supra-individual, immaterial substances' with social structure as 'something inherent in or emanating from a supra-individual immaterial substance' (p. 1) that is, some kind of spiritual entity social or divine. This puts the social before the individual as with Durkheim and is the position of social psychology with Bishop's reference to the 'macro context' (2007, p. 11) a supra-individual immaterial substance, and a macroculture as remedy for the grudging cooperation in Robins et al. (2011).

Weik examines two comparatively contemporary philosophers, Heidegger and Whitehead. Neither accepts that the ultimate building blocks of reality, whether immaterial substances or material, are unchanging and nor are they self-sufficient as discrete entities. 'For these reasons, their points of departure are notions that are temporal, historical, situated, relational and most

²³ Weik uses "'ontology" as a sub-concept to "metaphysics" with the former 'traditionally limited to the study of the most general attributes of being' (n. 1) which she does not inquire into. She states that 'metaphysics' is more appropriate for her paper. For Latour (2005): 'ontology is the same thing as metaphysics, to which the question of truth and unification have been added' (p. 117, n. 166). That is more real—I think. Extended definitions are given in Appendix III.

difficult of all—not a thing or object in the traditional sense’ (2006, p. 4). Whitehead’s ‘actual occasions’ are processual bundles of any relations, not simply those involving people.

As mentioned, Whitehead uses a ‘sort of naïve realism in which he more or less accepts things as they present themselves to the observer’ (p. 5)—or better, experiencer. Smells, tastes, sights and sounds are part of the strawberry, or the bird’s song, and are not ‘something constructed by the observer’s mind’ (p. 5). They are propositions, what each offers the other, or ‘the capacity to connect to one another through events’ (Latour, 1999a, p. 309). Whitehead rejects a bifurcation of nature which separates nature into its objective content studied by science, and human subjective perception. Otherwise, ‘Nature is a dull affair, soundless scentless, colourless: merely the hurrying of material, endlessly, meaninglessly’ (Whitehead, 1925/1993, pp. 68-9, cited in Weik, 2006, p. 5). Consequently matter such as animals and stones, are no longer mere ‘stuff’ which is ‘senseless, purposeless and valueless’ (p. 5). The consequences for relations between humans and nonhumans are enormous.

Weik observes that Whitehead has been neglected in the social sciences. Some of his concepts have been adopted in research on processes and becoming but not his metaphysics. She suggests that this is first because of the difficulty of reconceptualising longstanding ways of thinking which I found difficult, and still do. Finding the language required to avoid confusion (see Callon, 1981) and not mistaking the same term used for both organising actions, and the actions which are organised, such as ‘society’ (Latour, 2005), is another hurdle. Mistaking an abstraction for the thing, Whitehead’s fallacy of misplaced concreteness, leads to the bifurcation of nature. Weik refers to Heidegger and Whitehead’s objection to ‘observational sloppiness’ (p. 5) in which it is inferred habit obscures insight.

Second, traditional empirical research follows from the Cartesian distinction and is not meaningfully applied to metaphysics. Rather than the usual oscillations between quantitative and qualitative social scientific research, something else altogether is needed.

Designing

Actor-network theory *may* be defined, but rather more it is ‘grounded in a collection of empirical case studies’ (Law, 2007a, p. 2). Despite its name—Law suggests ‘material semiotics’ as an alternative—it is not a theory as an explanation why something happens.

Actor-network theory is descriptive rather than foundational in explanatory terms, which means that it is a disappointment for those seeking strong accounts. Instead it

tells stories about ‘how’ relations assemble or don’t [...] More profoundly, it is a sensibility to the messy practices of relationality and materiality of the world. Along with this sensibility comes a wariness of the large-scale claims common in social theory: these usually seem too simple. (p. 2)

Law emphasises the tentativeness, disparateness and dispersion of actor-network theory. Each text, this text, is a link in a chain of a network and does not represent the whole.

Methodological alternatives in social research to encompass materiality are hard to find because they don’t just add or subtract a little at the periphery but entail a rethink of the ‘standard package of common sense realism’ (Law, 2007b, p. 601, 2004). Latour (2005) outlines description and fidelity ethnomethodological principles. The researcher must *learn* from the actors the what, why and how they do what they do. His instructions on how to do an actor-network theory description or account, plus other principles are at first almost impenetrable (2005).

Recent articles underline the absence of a well-trodden methodological path for studies based on Whitehead in sociology (Halewood & Michael, 2008). In organisational studies, methodologies are also emergent (Czarniawska & Hernes, 2005; Hernes & Weik, 2007; Weik, 2006, 2011). Czarniawska (2004b, 2008) has developed ‘work nets’ as a more human and organisationally sympathetic counter to actor-network theory. Lindberg and Czarniawska (2006) used grounded theory, not necessarily inclusive of nonhumans, although they used boundary objects, and Dugdale (1999) ethnography. Weik (2011) proposes ‘relationality’ and ‘activity’ as the two aspects which characterise ontology of change and which should shape empirical research on organisational change. There are different modes of relationality, the ‘retaining capacity in the process’ (p. 668) of which process as connectivity, including actor-network theory, is one.

Actor-network theory provides many advantages. For this thesis relations are primary and it provided an innovative alternative to these as solely human which allowed for connectivity more generally, interesting in environmental studies. While constructivism also emphasises them, it is lopsided without objects, a well-rehearsed argument in the Science Wars (Latour, 2005, pp. 100-101). Emphasis is on ‘articulation’ as ‘an ontological property of the universe’ and ontologically ‘what an actor offers to other actors’ (Latour, 1999a, p. 309). The offer itself is a proposition, ‘the capacity to connect to one another through events’ (p. 309), a kind of negotiation. Articulation is the relation established between propositions, ‘not that of a correspondence across a yawning gap’ (p. 142). This translation/transformation gives

connectivity an advantage in discussion of relations doing away with the need for links, ties and other forms to connect entities. Stability is now what has to be explained.

Second, insights proliferate because there is much new in the emergent repertoire. For example, Latour gives some instances of the empirical metaphysics mapped out by actors which endow nonhumans with agency and movement.

‘You are thinking like your whole generation’; ‘Social structure is an empty term, there is only individual action’; ‘God is not talking to you, imams are talking in His place’; ‘Market forces are much wiser than bureaucrats’; ‘Your unconscious has betrayed itself through this clever slip of the tongue’; ‘I prefer wild salmon to mankind’. (Gramaglia, 2005, cited in Latour, 2005, n. 57, p. 56).

‘Your generation’, ‘market forces’ and the others are all agents. Notice how these ordinary sounding phrases contain that little bit more than at first sight.

Similarly a front line manager of a metropolitan hospital said: ‘My world is dirty’ (Sturgess, 2012, p. 2). Sturgess interprets this dirty world as a metaphor for contact with human frailty and inability to execute the envisaged world of the policy framework. However it is more a statement of empirical metaphysics which would benefit from more precise attention. How did the manager do dirtiness and how was dirtiness done to him? Sturgess’ later analysis opposes the two worlds but they are not oppositional, and not perspectives, but reality for each (Law 2004; 2007b; Law and Singleton; 2005; Mol, 1999; Dugdale, 1999).

Social scientists and planners need to be alert. As a result of reading Latour I learned to be much more attentive to the little instances when my expectations of what the world was *really* like were frustrated, and reconsider them, if and when I remember, as experiments or negotiations with the world, done on the trot.

Naïve realism goes against the grain of contemporary Western thinking which is still Cartesian, with the dissolution of matter in modern physics a negligible influence. Consequently Latour’s work is hard to understand until one’s own thinking is rearranged. Indeed, Whitehead requires it, being concerned with not what we think but *how* we think, the form of forms. ‘You cannot think without abstractions; accordingly it is of the utmost importance to be vigilant in critically revising your modes of abstraction...’ (Whitehead, 1925/1967, p. 59, cited in Stengers, 2008, p. 97).

PROCEDURES

Introduction

Interviewing as the main methodology discussed here is based primarily on Kvale and Brinkman (2009). The authors cover the ontological and epistemological aspects of interviewing concerned primarily with a semi-structured interview about the life world using phenomenology. Advice is provided on alternative forms of interviewing, and analysis such as bricolage.

Unlike the standard textbooks for questionnaire survey, they note the lack of standard procedures and conventions for interviewing, especially as a craft. The difference is in the researcher's attention to detail in each stage of the interview process. Their exposition is comprehensive, easy to follow and reference for particular points, and well-reasoned. It is a check list for good practice with reasons given for the items' significance as an ensemble, which is satisfying and enables a procedural change to be made with an understanding of the impact it will have on the rest of the research. I also found it useful when developing an understanding of if and where actor-network theory was compatible.

I attended a two hour seminar on interviewing offered by Curtin University, and had a practical appreciation of it from conducting semi-structured interviews in my career. However interviewing as a craft, which I support, is a work in progress and I learned while doing. The following sets out Kvale and Brinkman's procedures together with how they were implemented.

SEVEN STAGES OF QUALITATIVE INTERVIEW RESEARCH

Stage 1. Thematising

The purpose of the investigation, the *why*, that is the research question and objectives, and the theme to be investigated, the *what* should be formulated before the method is decided on. The latter refers to obtaining an appreciation of the subject matter. *How* is learning about the different interviewing and analysis techniques to be able to glean the required knowledge required. These have been set out for the research in Chapters 1-3. Some observations follow on the 'why' and 'what' of interviewing the Kvale and Brinkman way as a method.

They contrast their idealized and rather prescriptive description with a more responsive design, in which questions are open-ended, and in which changes in circumstances are taken into account, resulting perhaps in changed or modified subjects, questions and hypotheses on the way. The seven stage sequence was aimed at helping new researchers, and indeed it provided a structure and a sense of control which got me started and enabled a more discerning take on each

stage. Their approach is detailed and thorough and through their attention to craft, as open to circumstances and learning by the practitioner, an advantage in process thinking.

Qualitative interviewing as craft. Kvale and Brinkman note the paradox of describing a craft approach in a text book on interviewing as a method, but consider it offset by an emphasis on skills rather than methods, particularly the involvement and reflexivity of the practitioner. Research interviewing may be understood as falling somewhere between ‘semiskilled labour’, that is a repetitive and routinised process of obtaining data in the skilled profession of survey research, and ‘art’, involving ‘intuition, creativity, improvisation and breaking the rules’ (p. 86). In between is ‘interviewing as a skilled craft’ and ‘interviewing as requiring professional expertise’. The researcher as craftsman has a tool box of techniques and rules of thumb, a knowledge of the topic, a repertoire of specialised skills, and judgement. Exercise of professional expertise requires practical skills and mastery of the topic, but also incorporates the exercise of practical wisdom (*phronesis*) in every aspect of the interview, that is, it is ethical. ‘Craft’ may also refer to *techne*, that is, whether the object is good for its proposed use.

Qualitative interviewing is contrasted with methodological positivism—unexceptionally—in which, according to their reading of it, research follows steps and predetermined rules which enable replication. This as ‘one of the dominant and relatively unexamined assumptions behind the natural and social sciences’ (Chia,1999, p. 219) which relies on the assumption (and ontology), to repeat, that ‘things and events are unproblematically given to us as fully present and self identical through the immediacy of our experiences’ (p. 219).

Hence Kvale and Brinkman are concerned that qualitative interviewing as a product of the people involved and the knowledge of the topic, technique and judgement of the interviewer, is considered to be less reliable than survey interviewing which they regard as a method rather than a craft. Paradoxically, they note, the less skilled the interviewers and the more mechanical the method, the more highly regarded is the result as social science, while the more expertise required in interviewing, the less its credibility. While this may be true for social science, it is not of interviews in psychiatry for example.

In my view they are confronting a straw man common in qualitative research which seeks to distance itself from biophysical science conceptualised in a particular way with intellectual deduction the logic of scientists using facts. However, Latour and Woolgar (1979/1986) conclude that *craftwork*, ‘practical operations’ (p. 236) is the basis of the fact construction of

biophysical science. The logic of scientists was ‘the craft practice of a group of discussants attempting to eliminate as many alternatives as they could envisage’ (p. 166) for an observation, by anticipating and raising objections to it, reviewing the possibility of contamination, reconsidering their interpretations of statements and techniques, and so on, which the authors term ‘micro-processes’. The different preoccupations of this conversation are already constructed facts, the individual makers of these facts, the set of assertions in the process of fabrication as potential facts, and the practices and inscription devices (see Figure 4.1, p. 167). This supports craft interviewing through the particular attention to the practical operations entailed, and also, by analogy with the recalcitrance of objects, encouragement of assertion by the interviewee discussed further below as ‘objects objecting’.

Latour and Woolgar suggest that the laboratory discussion is not so different from those used to ‘muddle through daily life encounters’ (p. 166, 1979) or I suggest, other situations such as policy making (Hummel, 1991; Lindblom, 1959, 1979), sensemaking (Weick, 1995) or social research (Law, 2004, 2007b; Law & Singleton, 2005), or in Bateson’s learning (1972).

The interviewer craftsman’s micro-processes appear similar to the negotiations between the laboratory discussants. The interviewer craftsman:

- structures the interview;
- is clear;
- is usually gentle—but not in a confrontational style of interview—and allows the participant to finish what they were saying and gives them time to think;
- sensitive to the nuances of what was said;
- is open;
- is critical to check what was said;
- steers the interview to avoid digressions and stay on topic; and
- remembers and reflects what the interviewee said back to him/her for clarification (see Kvale & Brinkman, 2009, Box 9.2, pp. 166-167).

In actor-network terms the interviewer *negotiates* with the interviewee, to connect with one another through events –actual occasions— in the same way that scientists negotiate with the Large Hadron Collider to perform its part of the chain of translations. Harman (2009) refers to engineers negotiating with mountains when tunnelling, and Callon (1986) to researchers with the scallops of St Brieuc and scallops with researchers for that matter. All have a purpose.

These practices may lead to ‘good interviews in the sense of producing rich knowledge and creating a beneficial situation for the subjects’ (Kvale & Brinkman, 2009, p. 167). The beneficial outcome in a negotiation with fish could mean sustainability as intended for the scallops.

Facts are not entities which may be discovered by the appropriate method but the end product of an extensive *process of assembly* (Latour & Woolgar, 1979/1986; Latour, 1999a, 2005). The interviewer as craftsman makes an assemblage together with each participant: ‘The research process is not a mapping of some objective social reality; research involves a co-constitution of the very objects investigated, with a negotiation and interaction with the very objects studied’ (Kvale, 1992, p. 13). Objects here means people as minds, a trope continuing into the 2009 work in which Latour (2000, 2005) is used selectively to mean only human acts. However if objects *were* quasi-objects, then this is Latour speaking.

Objects objecting. Objectivity is not from repetition of the technical but through ‘acts that frustrate the researcher’s preconceived ideas’ (Kvale & Brinkman, p. 243) about the world. The idea is derived from Dewey’s definition of an object as ‘that which objects, that to which frustration is due’ (1925/1958, p. 239, also cited on p. 243) and Latour (2000). In my research these included the proposed three research groups based on organisational affiliation which overlapped with volunteering, and Perth Region NRM being a larger group. ‘*Allowing the object to object*’ (p. 243, emphasis in text) encourages trials or negotiations with them, resulting in increased objectivity.

Kvale and Brinkman, and Latour argue that in the social sciences the human object is malleable and predictable, but should be encouraged to object and upset the researcher’s preconceptions in order to enhance objectivity. ‘This might be the only real difference between the hard and the soft sciences: you can never stifle the voice of nonhumans but you can do it to humans’ (Latour, 2000, p. 125).

Establishment of trust is highlighted in order to encourage interviewees to contest the question and correct the interviewer’s understanding (Tinggaard, 2008, see also Latour, 2005, pp. 122-127). Tinggaard kept talking past her interviewee because she simply could not recognise the significance of what he was saying but he kept bringing her back to it. Subtly different is the interviewing skill required to tease out respectfully something you think is outrageous or threatening because of your own involvement. Both are keys to the actor-network theory of

action as objecting objects. Thus: 'An actor or actant is *'any thing* that does modify a state of affairs by making a difference' (Latour, 2005, p. 71, emphasis in text). The taken-for-granted object then becomes a 'matter of concern' (Latour, 2005, n. 80, p. 70) and the focus of attention rather than a fact or intermediary.

In discussion of agency, Latour relates how the pull of the marionette's strings on the fingers of the puppeteer furthers its movements (see 2005, pp. 213-218). Of course the marionette is bound by its strings but it is not only the strings that enable the puppets' performances. That they do is shown by cutting them. How well the puppeteer makes the puppet move creates a good performance, but a good puppeteer's fingers also respond at the direction of the puppet. 'The only way to liberate the puppets is for the puppeteer to be a good puppeteer' (p. 215). Similarly with interviewing: just saying that the interviewer should be responsive is insufficient and Kvale and Brinkman's directions, although comprehensive, even unwittingly including object relations, don't give them agency.

Later in the thesis 'figuration' (Latour, 2005) will be used and it is mentioned here using an example from Kvale and Brinkman to show the difference between an *actant* and an *actor*. In discussion of school grades (pp. 124-127) a participant remembered her merit star's colour and its shininess and the celebrations of her achievement in what she interpreted as stratification produced by grades and becoming teacher's pet. Stratification and favouritism were treated solely as the social effects of grading and potential evidence of one of the three psychological hypotheses tested derived from Freud, Skinner, and Rogers. The actants, particularly the star, were ignored as intermediaries. Questioning about the star may have elicited a description of its significance as a boundary object (Star & Griesemer, 1989) given flexible meaning by both the smart and not so smart to shape transactions between them. Or the star could be seen as a quasi-object *only* because it could be detected through the network of relations, as a badge of honour, an object of envy, or a stigma. That it was a star rather than say, an elephant stamp, makes no difference in each example; the agency is the same. This is the object's 'figuration' (Latour, 2005, p. 55) and as elephant stamp, star, or even a book prize, the agency of this *actor* is the same. The figuration can only be deduced by comparing different repertoires of moves. By analogy with chess, it doesn't matter if the pieces are made of plastic or wood, it is their unique movements which are important. An *actant* has agency but no figuration (see p. 71), that is, it is a lower logical type with no cluster of like instances.

Law (2004) suggests that what is present is always read allegorically for what it tells us about absence, and I think he is alluding to figuration. Allegory is ‘denied but it is ubiquitous’ (p. 97) and ‘generative’ (p. 97). A figuration expressed allegorically usefully allows for envisaging repetitive transient processes as one movement, easy mathematically but not verbally, and I have used it to describe an oscillation in Chapter 8.

By excluding the agency of actors as objects, Kvale and Brinkman miss the point when they question the superiority of survey interviews. The interviewer craftsman’s micro-processes described above are all behaviours to be used in what is largely a one shot process which owes its longevity to a recorder or two, a computer and a report. The routinisation or black boxing of a survey interview, produces *objectivity*, that is, it treats as solid and reliable, a step in a chain of transformations which passes forces reliably from one location to another through information technology, routinised coding and data entry and so on. Latour and Woolgar (1979/1986) use the metaphor of the laboratory as an assembly line for facts, which is what the survey interview resembles. The more particular, local and material, is translated and transformed through successive stages to the relatively universal and less material in a kind of industrial process (Latour, 1999a, 2005) which employs the ‘tacit skills or material equipment of another laboratory’ (Latour & Woolgar, 1979, p. 238). The same applies to survey interviews. In actor-network terms, the survey interviews have more allies, that is, are more real, more *stabilised* (Latour, 2005). The craft interview is by this account, not less scientific or objective, but less real, less of an object, and less stable, unless with a celebrity for example, who is particular but brings her own alliances, the laboratory of fame, with her. However, as Latour (2005, p. 120) also reminds us, big systems are frail so there may be a counter through the relative compactness and simplicity of the craft interview. The survey interview navigates while the craft interview is quite simply *mapping*, and cartography.

In survey interviewing the interviewee is largely unable to object to the questions as the sense has already been made elsewhere in other laboratories through pre-testing, and black boxed in the translation/transformation to become the mobile, stable and recombinable. Viewed thus, qualitative interviews are not so much inferior as at an earlier, less established *phase* retaining more of the local and particular, which is what I wanted in interviewing senior people, namely access to unique and privileged information.

Objecting objects change research

Some examples are now given of how objecting objects changed research emphasis if the interviewer recognises that an aspect of the research doesn't meet expectations.

In a study of municipal reform, Czarniawska (2004a) asked what she thought was a simple question about when it started. The answers ranged from the 1930's to the 1970's. The question was not objected to in the sense of taking issue with it, but the response indicated to her that people not only may have had memory lapses but that when they said the 1930's this may have been what they acted on. The 1930's reform was different to the 1970's reform and people were implementing different reforms. Her research world was rearranged too.

Messy mapping of ALD. Research on alcoholic liver disease (ALD) did not go according to plan because the researchers realised that they were not dealing with one thing, the tacitly hypothesised ALD (Law, 2004, 2007b; Law & Singleton, 2005). Mapping what they thought would be a typical trajectory of patients through the health system, was impossible because there was not one typical trajectory and different trajectories didn't map onto each other either. For example people were counselled in an alcohol advice centre in the middle of the city if they had an appointment and were sober. Some people in the hospital knew this and some thought the facility was a drop in centre: 'Trajectories imagined and enacted in the hospital were inconsistent with those imagined and enacted in the advice centre' (Law, 2007b, p. 598). The authors conclude that this, amongst dozens of instances, was: 'impossible to map because it *was* a mess. And somewhat strangely in a way, our instinct was to ask reality to adjust itself so that it could indeed be properly mapped' (p. 598, emphasis in text) and also managed. If objections are ignored, the researcher is asking precisely this. The consequences for objectivity and validity of research are discussed in Stage 6, Verifying.

Second, ALD was not a thing but a collection of related things, such as alcoholic cirrhosis, alcohol abuse, alcoholism, liver disease, and even quality of life. It was vague and multiple. It *could* have been construed as different perspectives of one thing. The proposed mapping didn't work because the object was 'shape shifting' (p. 340). They concluded that this was not a technical failure on their part because ALD is a difficult, generative object which 'creates the unknowable and unexpected' (p. 349): 'If the world is messy we cannot know it by insisting that it is clear' (p. 350). They wanted to navigate rather than quite simply *mapping* objects such as ALD which do not stay put but are 'coming-into-sight and passing-out-of-sight' (Chia & Holt, 2009, p. 164).

Latour objects to researcher interpretation which vitiates what the agent says or does by knowing more than it does about itself, leading to amongst other things, repetitive and unadventurous research. The researcher goes beyond description of the evidence into interpretation of it: 'no jumping' says Latour. What *makes* the actor act, including their metaphysics, no matter how baroque, may not be interpreted away by the researcher as preconceiver. The analyst's job is to 'retrace the many different worlds actors are elaborating for one another' (Latour, 2005, p. 49, see also pp. 43-62) which Law and Singleton do.

Dockside dilemma. Another example is provided by a study of industrial relations on the Australian waterfront. Whiteley (2004) describes some apprehension about research which blurred 'the boundaries of the constructivist and positivist ontologies' (p. 36). A new business research option 'grounded research' was developed which resolved the need to use some quantitative research procedures as well as the intended constructivist grounded theory. Whiteley provides a nuanced account of how this occurred and I hope I have done it justice in the following.

The historically highly structured and externally imposed rule-driven industrial relations procedures of the waterfront frustrated research using grounded theory. A century of these had resulted in social interaction being formally structured according to stated organisational norms and functions for managers, and union members functioned according to membership demarcations. Formal structures of meaning were thoroughly embedded in union and employer procedures and practices which the researchers then had to observe in the research design. A new Enterprise Bargaining Agreement (EBA) threw these into relief and, for example, enabled managers to chat socially to union members.

The machine bureaucratic aspect of the waterfront encouraged a *structured* view of self. However socially there was great camaraderie of '*unstructured* selves' (p. 30, emphasis in text).

In one instance it emerged that participants preferred to respond to set questions and issues. Consequently the researchers had to use a structured questionnaire which forced data into ready-made categories rather than the explicitly required emergent categories of grounded theory. Hence questioning until saturation was reached was not possible either. The new grounded research was still respondent-directed, and closely connected to constructivist and interpretive research, but did not really resolve the ontological differences.

Where these formal structures of meaning existed is an interesting question which Weik (2006) helps to tease out. She asks where do social structures exist? ‘We simply cannot grasp an idea completely if we cannot imagine how or where it exists’ (p. 2). The formal structures of meaning derived from imposed rules and regulations and were ‘built into union and employer procedures of interaction’ (Whiteley, 2004, p. 29). Via constructivism, ultimately they were attributed to immaterial substances (idealism collective or individual) rather than brains²⁴. The actual connectivity to materiality as rules, regulations, the new EBA, as well as the sheer physicality of the docks, was not addressed specifically and nor could it be²⁵. Empirical research in the traditional way depends on the Cartesian distinction and the problems Whiteley encountered are to be expected, plaguing research.

Conclusion. Objecting objects are a powerful force for discovery but only if they are noticed which, unlike car breakdown, may not be the case in qualitative research where nonhumans don’t count and people may be too nice or timid when interviewed. Information as the ‘*difference that makes a difference in some later event*’ (Bateson, 1972, p. 381, emphasis in text) has to be allowed or even encouraged by a trial and may even not be noticed by researchers because of emphasis on research conformity, and success, time pressures, or not realising the significance of what was said.

Objecting objects have been a knotty problem in this thesis and have resulted in my taking some different directions. I have taken nonconforming data or applications or classifications to indicate that my conjecture about what the real world was really like, in sampling for example, was misconceived. I have learned to be on the watch for anomalies and differences rather than assimilating them which in my view is the essence of both actor-network theory and the craft approach to interviewing. In actor-network terms, the researcher has to decide just how far she is going to rummage in those research black boxes.

²⁴ In Swan River governance it seemed that the structures were lacking in the mind/brain and could be topped up with shared values, beliefs and teamwork (Robins et al., 2011). However the problem could lie exogenously in legislative inadequacies and inconsistencies including departmental purpose and responsibility; policy and regulations on accountability for chief executive officer’s performance (see Mullin & Daley, 2009); and budgetary competitiveness to ensure that my department’s core business is regarded as more important than yours.

²⁵ Whiteley encountered the distinction made by Hernes and Weik (2007) between *exogenous process* in which external entities such as the new industrial agreement, stabilise the organisation and its predecessor arrangements, and *endogenous process* in which stabilisation of entities resides in the process itself signalled in Whiteley’s text by reference to Weick (1977, 1979, 2001). Hernes and Weik regard the two as probably exclusive and it would be of research interest to consider Whiteley’s work as an example.

Australian statisticians use 'NEI' 'Not Elsewhere Included' for residual observations that don't fit into the main classification. Tucked away in NEI are objecting objects, challenging this classification of the world. There is a:

Persistent problem in qualitative research of naming and thereby differentiating methods. Names, such as qualitative description, grounded theory, and phenomenology, signal boundaries within which well-defined entities clearly differentiated from each other are supposed to reside. These names signal a classification system that, like all such systems, tends to be treated as if it were a fixed way of ordering the world of inquiry. (Sandelowski, 2010, p. 80)

Case study is an example. Moreover, in qualitative research the 'very classification of methods is highly idiosyncratic' (p. 80) with no one classification system used, for disciplinary and other reasons. 'Qualitative description' is a 'distributed residual category' (Sandelowski, 2010, p. 82 citing Bowker & Star, 2000, p. 149). Bowker and Star describe these as '(far from being mere) garbage categories . . . where things get put that you do not know what to do with, (distributed residual categories) signal uncertainty . . . under conditions where forcing a more precise designation could give a false impression (of certainty)' (cited in Sandelowski, 2010, p. 82, insertions in text). They challenge the taxonomy because they can't be made to fit becoming a prime source of potential innovation by exploratory research.

Uncertain categories question the practices which produce them by drawing attention to the riskiness involved in negotiating with:

The vast outside to which every course of action has to appeal in order to be carried out. [...] Hermeneutics is not a privilege of humans but, so to speak, a property of the world itself. The world is not a solid continent of facts sprinkled by a few lakes of uncertainties, but a vast ocean of uncertainties speckled by a few islands of calibrated and stabilized forms. (Latour, 2005, p. 245)

Stage 2. Designing the interview study

For the next six stages I have described Kvale and Brinkman's proposals for interview as method, what I did, any differences in application, and what I learned from these. I have used their prescriptions as a recipe but followed up objections. I have also drawn on Sandelowski's qualitative description as appropriate.

Site and participants. The difficulties of NRM in Australia and Western Australia and the implementation of Australia's largest ever NRM program have been outlined. Perth Region NRM was initially chosen as the study site because its peri-urban location was a requirement for

grant funding. There were only two of these in six regional bodies in Western Australia and it was the most accessible. The notion of 'peri-urban' itself is unclear (Marshall, Waldman, MacGregor, Mehta & Randhawa, 2009) and poses different conditions for NRM (Darbas, Smith & Jakku, 2009). Second it was regarded as a competent group by Professor Geoff Syme who was then co-supervisor and who I considered to be knowledgeable and validating about it and NRM more generally.

Kinds of interviews. Interviews may test hypotheses or be exploratory as observed above. In the former, hypotheses to be tested are formulated in advance from the literature. In the grading study mentioned previously, teachers and pupils were asked about their grading experiences (Kvale & Brinkman, 2009). Previously mentioned were the hypotheses derived from the literature about possible influential factors in grading which provided a schema for questioning. For example, when a student mentioned mixed feelings, a question was asked about the parental role reflecting a Freudian psychoanalytic approach. Hence the research had already entered a well theorised stage in which the questioning, while not directed, anticipated a class of response and capitalised on further questions using induction. Using this ideal approach, the research is completed when the recorder is turned off for the last time as the answers have been obtained and verified and the researcher has largely written the report during the interviewing process. In this study, ad hoc statistical analysis of the time taken for each student interview against another variable, talking time in class, enabled further insight.

Exploratory interviews are usually open with little pre-planned structure, that is, the research is emergent. The interviewer follows up the participant's answers and seeks new information and new aspects of the topic in the interview. Unlike the hypothesis-driven interview, there is less opportunity for researcher imposition and interpretation for categorical 'fit'. These interviews may also be primarily descriptive and develop a few key aspects of the lived world, or they may be used as background information for another presentation such as a book. Researchers should still have a sound grasp of the theory beforehand, and familiarity with what their interviewees will be talking about. How the interviewing study is conceptualised determines the other stages in an emergent design.

Exploratory interviews are consistent with actor-network theory in that there is a preparedness to question and follow apparent anomalies. The semi-structured format while not as exploratory as completely open-ended interviews, enabled me as a competent but not professional interviewer,

to keep the interview on track, that is, be more interventionist, while retaining flexibility to follow up on matters of interest during the interview.

Getting started. The interviewer is the key research instrument as the relation between the interviewer and the participant is the means by which the knowledge is produced. ‘The first few minutes of an interview are decisive’ (p. 128). *Every* point of interaction from interview guide design, Participant Interview Information Sheet, electronic mail address—Curtin University—and all aspects of contact between a potential participant and the interviewer contribute to the relationship by initiating and furthering rapport, some before the interview. A few interviewees knew who I was from snowball sampling that is, through referral, or from previous contact and I believe this affected the decision to be interviewed.

Finally personal contact and the handshake decide what will be said and enable an interview which is successful and rewarding for both people. Articles on ‘How to win the job you want’ are crammed with this kind of information, including the time for assessment of suitability (under a minute) but it is not addressed except for demeanour. The text books don’t mention dress but I wore day to day business clothes as more formal when appropriate.

Where was it to take place? Interviews were held in the homes of two people and at 6.00 am in a suburban hotel sitting room in order that an interviewee could catch a plane. I think that to an extent there had already been some acceptance of me. In my view this escalated confidentiality requirements through reciprocity.

Considering the topic I also felt that I was on show as instantiating (or not) both a productive collaboration for the task at hand and to an extent, an official from Western Australia. Three interviewees commented on the hotel I was staying at in Canberra as either not of the moment or just awful. A four star at off-season rates lake-side was all right to me but could have signalled provincialism and not being in the know, a minor difference, discussed in Chapter 8.

The interview guide or script. A guide structures and sequences the interview, depending on whether it is structured, semi-structured or unstructured. Structured interview guides are useful for pre-circulation to participants enabling reflection. I wanted to elicit the in-depth knowledge and experience of these unique employees and consultants in a unique one-on-one situation. Without reflection and the little bit of rapport developed by it, the purpose of the interview would be weakened.

The questionnaire is an emissary, signalling intent and tone. It allows participants to decide if they want to participate. While explicitly advised that they may withdraw at any time, receipt of the questions potentially limits this tendency and may also defuse suspicion that an aim is to elicit information by surprise or pressure, especially at a time of sensitive change from NHT2/NAP to something as yet unknown.

Most of the people I intended to interview were senior enough to be capable of staying on message indefinitely and probably had media training, so pre-circulation possibly acknowledged the inevitable. The most senior person I interviewed largely ignored it while presenting a considered response. It was not a conversation and there was no doubt who was the supplicant.

Do participants given a guide in advance give different answers? In actor-network theory terms, is it an actant which makes people do something? One person had written answers on it. Most gave evidence of having read it and/or had a copy in front of them.

In interviews a guide provides something tangible and may be used as a prop and to maintain dynamics through mutual familiarity with what will happen next. Numbers and counting signal control; 'We have already done Question 5 in what you said before about X and Y'. Is that right?' (researcher in interview). It also previewed to the participant the order of what could have been a tricky juggle for the interviewer. Some participants helped by affirming what was next as they tracked the guide: 'Anyway how are we doing? Are we sticking to your questions enough' (interview)? Joint construction of interviews is referred to in the literature (Gubrium & Holstein, 2009; Kvale & Brinkman 2009) but the *help* given to the interviewer by the interviewee strangely was not, perhaps because the interviewer is either the expert on doing interviews or being patronised.

A guide overcomes hesitation until the researcher becomes confident enough to allow for more spontaneity while still gaining the information required. It helps with timing. Finally it is useful in getting started with analysis.

Three guides were prepared, each of which was slightly different, consistent with my theory of the situation, that is, as interaction between a member of each of two of three separate groups and relations, if any, with the other. In the next section, I describe how this, based on seniority of employment and/or involvement status in three groups overlooked the potential for multiple

roles. This was not disastrous by any means but a lesson for the future is to be aware of the possibility of these category distinctions even if they may not be clear from the start.

Questions were used based on a series developed for scenario planning over many years, (van der Heijden, 1996; Ringland, 2002). Scenario planning may seem remote, however the *data* for scenario construction is obtained from interviews. These questions or variations of them are clear, thought provoking, and follow naturally so that participants draw fully on their expertise and experience in answering. They encourage people to reflect and talk about what they have learned in their work and to an extent, themselves, as well as unearthing issues and concerns related to the focus question adjusted for affiliation: 'I am interested in finding out about the relationships between Perth Region NRM and government in the administration of the Natural Heritage Trust and Caring for Our Country. How do you see the relationship from your position with (Perth Region NRM) first at the State level and then at the Commonwealth level?'

In previous research some participants have made comments such as, 'good questions'. One participant in this research said that the interview was like 'a strategic planning session when you have the opportunity to work through your thoughts'. Very few people provide sparse and speedy responses, or take over. I felt confident that these questions were intermediaries, alliances that wouldn't give trouble.

Table 3 below shows one of three interview guides suitable for a member of a regional body, the others being suitable for either a member of the state government or the Commonwealth government. The three questionnaires, which were spaced widely to allow for writing notes, are given in Appendix II.

Issues and events are asked about and so may register frustrations, controversies, groups and anti-groups, suitable for use in an actor-network study. The questions are all neutral or positive. I was not necessarily asking for critique or problems: issues connote problems or sticking points but could equally refer to positive opportunities that could be missed.

Had the federal government been returned, the answers probably would have been more positive and anticipatory of reaping the fruits of previous work. Asking them at a time of rupture and reassessment would likely produce nascent 'matters of concern' that are not yet facts.

Each question has a role. Questions 1 and 2 are ‘warm up’ questions which get the interviewee started. Question 2 asks for an opinion. Van der Heijden (1996) suggests an alternative; ‘how did you come to be in your present position?’ (p. 145).

Question 3 accesses a past temporal orientation and opens the opportunity for reflection on past events and changed circumstances because of them. What has happened to date? What was stable?

Question 4 was an opportunity to express hopes and fears about impending new circumstances. It also potentially focussed participants on thinking about past achievements and what adjustments they would need to make, that is, what did they learn and how were they going to respond.

Question 5 asks about the relationships specifically.

Question 6 reverts to specifics of Question 3 by asking about the specific *events* in the relationships. This question is weighted by reliance on memory as what is important gets remembered.

Table 3

Discussion with a member of a regional body

I am interested in finding out about the relationships between Perth Region NRM and government. I would like to talk to you first about the Commonwealth government and then about the state government with the same set of questions.

1. Do you have direct dealings with the Commonwealth Government? If so is this with ministerial staff or public servants? If not, describe your general impressions.
2. How do you see the relationship from your position with Perth Region NRM?
3. How has this changed over time? Why do you say that?
4. If things go well, how do you think that this will evolve in the future with ‘Caring for our Country’?
5. What are the key issues in your view that influence the relationships between you and government? Are they different for the state and Commonwealth?
6. Thinking back what were the significant events in the relationship?

7. How did these influence your work? How did you respond?
8. If you could have done something differently, what would it have been and why? Was there anything which would have prevented this?
9. Once you have left this position, what would you like to be remembered for?
10. Using your own understanding of adaptive management, how do you think that it is occurring?

Question 7 asks participants about their work response to these events to gain a feel for workplace adjustments and again, learning.

Question 8 asks about learning and/or innovation and barriers to it.

Question 9 asks about the participant's hoped for legacy which could amplify *Question 7* and finishes on a positive note about what was important to them.

As some people dealt with more than one organisation, I commenced by saying that we would talk about the questions on relations with their counterpart(s) in one organisation and then in the other, finishing with *Question 10*.

Question 10 was not a 'scenario' question but asked about adaptive management. The term was largely disregarded in 13 Australian evaluations of NHT2/NAP despite being a principle of the bilateral agreements and I wanted to know more about why this was. In the interview introduction I signalled to the participant that there would be an outlier question at the end and fitted it into the interview as either the second last or last question depending on the flow.

Participants were not expected to talk about their personal experience but about their business activities, except for the 'legacy' *Question 9* which provided a good winding down and an opportunity to reflect on what was personally important. It surprised me when some spoke cautiously about their feelings, discussed below.

How suitable for process analysis are these questions? Scenarios are about the potentialities of the world, subtle changes and the noticing of them which the questions are designed to prompt. These 'noticings' are then collated into patterns (scenarios) through abstraction. The inquiry is about that with which we think we may have to grapple including relationships, or in Whitehead's term, prehensions. Chia (2000) mentions 'vagueness or undifferentiatedness as the

“aboriginal stuff” of reality’ (p. 515) and similarly Latour’s hermeneutics of the world, tapped by scenario questions.

Chia argues in the field of organisational studies that: ‘Discourse works to create some sense of stability, order and predictability and to thereby produce a sustainable, functioning and liveable world from what would otherwise be an amorphous, fluxing and undifferentiated reality indifferent to our causes’ (2000, p. 514). In this case while participants were asked about entities (relationships, government, state, Commonwealth), they were also asked about the changes they experienced and how they responded. As mentioned, the questions are more prompts to encourage reflection and participants were free to talk widely.

Sampling. Kvale and Brinkman do not discuss sampling at length because of the emphasis on qualitative interviewing and more extensive analysis rather than larger numbers. In one of Kvale’s study of school grades there were 30 students and six teachers, a compromise between a representative sample and resources. It depends on what the researcher is interested in finding out about but in common interview studies, the number of interviews is about 15+/-10 (p. 113).

The network of relationships between government departments at three levels of government (including local government which was not studied), a regional body and subregional groups for environmental management involves thousands of people. The problem was to limit the number of respondents as it could easily balloon. It was decided to interview senior people in Commonwealth and state government and the regional group to limit numbers and for their intrinsic interest.

Notably in my candidacy proposals to the Department of Psychology and the Division of Health, I grouped all public servants *en bloc* as contrasted with ‘regional people’ reflecting I think, the prevalent on-ground predominance in the NRM literature on collaboration. People more generally also lump public servants together as bureaucrats (see note 26, p. 105). I have described the reconceptualisation into a network.

Other governments were opaque to me despite my employment and in this I was no different to the public generally. With regard to NHT2/NAP, Johnston, Green, Stephens, Syme and Nancarrow (2006) and Johnston (C. Johnston, personal communication, September 28, 2007) had the clear impression that an undifferentiated government dominated the two regional groups studied, one nonstatutory and West Australian and the other statutory and Victorian.

Commonwealth public service participants were selected from a relatively small group of officials (recent past and present) using snowball sampling (Patton, 1990) that is, respondent driven sampling used when members of a special group are difficult to locate. The goal of this purposeful sampling is to find ‘information-rich cases for the purposes of the study’ (Sandelowski, 2000, p. 338). This is a version of Latour’s ‘follow the actors’ (2005, p. 12, Ruming, 2009). For completeness, I would have interviewed two politicians mentioned by the others, who in any event, had long since moved on. A limitation was the number of senior people who were knowledgeable about relations between at least two of the three groups, itself indicative of a small pool of people.

I already knew three key informants professionally, one in each of the three groups, and through these obtained the names of people who were knowledgeable about dealings between the State, Commonwealth and Perth Region NRM. Two others I knew professionally but not about their involvement with Perth Region NRM in which role they were recommended.

When contacting people I gave the name of the person who referred them. In total I interviewed 21 people in this semi-structured format where they were recorded, and another five (three in a group interview) were interviewed for background information during which I took notes. Two people recommended declined to be interviewed, one through pressure of work; one participant subtly suggested that there was a shared view with the other. One person I cold-called did not respond and I did not interview two other people recommended. Most people interviewed were recommendations.

The first three interviews were used as a pilot and indicated that the questions and general approach was working (Yanow, 2000). Two of these went very well and the participants commented on it. In the first interview I was a little nervous. Two co-supervisors reading the transcript thought that answers in one interview had been well-prepared and I noticed that the participant referred a few times to the interview being recorded, implying uncertainty at this time of political sensitivity.

A suggestion was made to interview in turn one of each group (Commonwealth, state, regional body) in order to avoid swings in interpretation from group to group through continuous comparison in a generative approach (Bishop, Sonn, Drew & Cantos, 2002). While good

inductive interviewing, in my mind I wasn't interviewing inductively but as someone interested in a participant's specific views on a topic, more like a journalist.

I mentioned previously that there was a relatively small group of people involved which I did not anticipate. In asking key informants for their recommendations of people who were relatively senior and dealt with the other group(s), I was in effect asking them for their professional network. The consequences were first a need for greater care with confidentiality as not only could people be guessed (abduced) but they could also be wrongly guessed.

Government officials predominated. Of the 21 recorded interviewees, 19 were government or ex-government employees with seven having gained knowledge of Perth Region NRM through volunteering, consulting, or representation/observer status on the board. Of the three people who declined to be interviewed, two were government officials and one nongovernment. The balance of government/nongovernment is supported by Robins et al. (2011).

The 'three group' interview guide based on my theory of the situation was not quite right, although it worked well enough. Late in the interviewing I realised that one participant had been a member of all three within the last four years causing on-the-spot confusion about which guide to use. Another round of unanticipated objections was opened which amazingly I had not appreciated, namely that people could be a member of more than one group, questioning the initial categorisation. Like the ALD study (Law & Singleton, 2005) my map of a typical participant trajectory didn't match the situation which was in itself contradictory. Affiliation thought to be obvious was circumstantial (Law, 2007b).

Sampling was based on the assumption that there were three geographic locations and three kinds of employer within them making three groups for comparative purposes but these overlapped. Senior people and retired professionals provide unpaid expertise to Perth Region NRM. Officials participated in multiple roles as employees, *ex officio* on boards and committees, and as volunteers: two participants said they had worked as government 'volunteers' in extensive after-hours work as part of the job. I decided not to omit interviewees with more than one affiliation when it was more numerous affiliations which made the actor more real. I treated the three groups as one large group.

'Small worlds' aren't necessarily spatial but spatiality was important. In the background was the influence of site—Midland, Perth and Canberra—from which simply located clean, sampling

categories would emerge. Desmond (2004) also found that 'defining the field of research, in marking off a localized physical space for a period of time, stems from the very artificiality of such boundary construction' (p. 263). She found that separation of sectors into economic, scientific or state seemed artificial 'as they emerged in and out of each other in confusing messiness, leading me at times to wonder where exactly was the field, only to find myself smack in the middle of it. (p. 263)

All research findings are the product of networks *created* by the researcher (Ruming, 2009) through, first, the objectives and framing of a research project and, second, the methods used to create and follow the research network with purposeful snowball sampling a means to 'follow the actors'. The interviewees were members of a fluctuating actor-network with sites also as actants, that is, they made them and me do things such as move meetings to a more prestigious address and attribute size to an organisation based on its location and comparatively humble office.

Another actant was 'peri-urban Perth Region NRM' which on a scale of local to global was relatively more global with access to urban expertise which it used for its purposes, and metropolitan population of 1.6 million from which to draw volunteers. Most other Western Australian regional groups were less well favoured for expertise and volunteers although better funded.

Enlisting participants. Participants were contacted first by phone if possible and then electronic mail in which I stated who I was, how I obtained their name and requesting an interview which would take about an hour, at a time and place at their convenience. I offered to send the questions and a Participant Information Sheet (Appendix I) if the person was interested in being interviewed, together with my phone number and an invitation to call me if they wished to discuss it further. Further contact was by phone or electronic mail.

My tone was 'government informal' using a first name in the salutation and a Curtin University post graduate address. I inquired again if they would be willing to be interviewed and enclosed the Participant Information Sheet outlining the purpose of the study and providing information on the research, supervisory contact details, a statement of ethical approval, and expressing willingness to talk further with them if they required further details. These provided bona fides. An interview would be at a time and place convenient for them. I stated that the interview would take about an hour although some were up to three hours.

In the Participant Information Sheet it was stated that the interview would be recorded unless the participant did not want to. All interviewees agreed. It was also stated that copies of the transcript would be available if required.

Stage 3. The interview situation

Preparation for a confident and empathetic impression often included an initial chat about a general topic, a step not mentioned in Kvale and Brinkman. It enables people to assess you further and business practice is to make a little bit of small talk, terminated by the senior party in my experience, before getting down to the matter at hand. Apart from assessment, it also enables some settling of nerves, development of focus and the interviewer to put the participant at ease, necessary once (Dunn, 2010).

Dunn cites Gardner, Neville and Snell (1983) that interview success, measured by ease of conversation and degree of relaxation, depends on the amount of warm up, chit chat, and introductions. These interviews were with Vietnamese Australians in Melbourne, implying that this may be cultural but I have found that it is customary with the time spent tacitly negotiated. Familiarisation may include being offered a beverage or going together to a pantry or café to get one as a shared task. Later translations will be described of which this is an example. The interview in this instance becomes stabilised a little bit, more real, through a mimetic (copying) translation (Lindberg & Czarniawska, 2006).

Some interviewees asked questions about my project and background. Three suggested that we have coffee first with the opportunity to talk about matters of mutual interest. One I had previously interviewed by phone at her suggestion, useful for follow up questions in the next interview.

Warm up conversations were not recorded in most cases because there was a tacit arrangement about when the recorder should be switched on as signalling on the record. After the initial introductions, some warm up, and business such as shutting the door, checking the recorder and general settling in, there was a *briefing* in which I outlined what was to occur, asked if the interviewee had any questions or concerns and answered them. Interviewing began officially with the turning on of the recorder, which some people looked at, and stopped when it was turned off. Subsequent discussion with eight participants was off the record.

Participants were asked about their dealings with each of the other two groups in turn. I first enquired if the interviewee had dealings with either of the other two organisations and depending on the response then stated that I would first ask questions about one and then ask the same questions about the other. I was concerned that I showed confidence that I could negotiate with the participant the two sequences of questions. Consequently my confidence in the ability of the questions to engender 'flow' (Csikszentmihalyi, 1999), that is a shared state of participation or even collaboration, was important so that there would be no interruptions to the train(s) of thought. This was not always easy: hotel Muzak, wedding photography nearby, traffic noise, a telephone on call back, people coming and going in a lunch/conference room, and an attention-seeking cat were all co(a)gents (Michael, 2004), encroaching on the interview, touched on in Chapter 6.

At first I carefully followed the script but as I grew in confidence I allowed or encouraged the person to follow their train of thought in answering the questions. When there was an appropriate pause, I checked the script with the participant to see if we both thought all the questions had been covered. The questions were open and the topic, 'relations', meant that it was almost impossible for the interviewee not to have something of interest to say.

After the interview, Kvale and Brinkman suggest a *debriefing* when the participant is asked: 'Would you like to add anything before we finish the interview?' allowing them to air any concerns. A second debriefing occurred once the recorder had been turned off when some participants were more candid and amplified their discussion. One said that he was going to amplify the views of a cautious interview. Kvale & Brinkman suggest that the participant's permission be asked to include this later material as implicitly it is not part of the interview: I would say explicitly. Some people flagged a discontinuity by stating something like 'now that the recorder has been turned off' and/or gesturing towards it.

After the interview I wrote up notes including the 'off the record' which shaped thinking but was not reproduced. People were candid and some said 'I hope you don't quote me on this', which I didn't.

Note taking instead of recording interviews is a distraction. Even if the interviewer can keep up with the participant, mentally organising responsive questions, noting gestures and tone, while attempting to maintain rapport is difficult. More data reduction is occurring at an even earlier stage as the interviewer selects the gist and so recording is preferable if detail is needed.

Interviewing elites. Interviewing elites raises issues of access; power and stance of the interviewer; and assumptions about them. Concern about access to some of the participants was unfounded as discussed but I was not able to study people's behaviour in the field through participant observation in government offices. I also requested permission to be able to attend board meetings of Perth Region NRM which while not refused was not forthcoming either.

My own experience as an official was helpful but the influence of my socialisation on this research is unknown. I was already 'native'. There is a substantial literature on interviewing elites although overwhelmingly most interviewing is 'down' the 'prevailing asymmetry' (Kvale & Brinkman, 2009, p. 147) who seem to consider status as an entity rather than a flow or microphysics that requires constant attention for its production. 'The idea that elites can be neatly defined and treated as consistently powerful is a view that relies on the simplistic idea that there is a dichotomy between powerful elites and powerless others [...]' (Smith, 2006, p. 645 cited on p. 695, Neal & McLaughlin, 2009, Morris 2009).

The theoretical situation of interviewers when the situation is uncongenial to reciprocity because of a more powerful interviewee is unclear or unhelpful (Neal & McLaughlin, 2009). Power is 'nuanced and shifting' (Desmond, 2009, p. 266) and does not consistently flow in one direction (Neal & McLaughlin, 2009). Desmond addresses supplicant status induced by 'interviewing up' and found that the relationship was mostly asymmetrical and that she relied on the cooperation of the participant. There were ambiguities when her disadvantage could also be read as a threat to the interviewee who proceeded to inconvenience her in obvious ways such as making her wait. Similarly, patronising offers to arrange transport could also be taken as an attempt at co-option.

Some of the difference may be due to Neal and McLaughlin interviewing as a team with more people and a male on it. Desmond, a woman, interviewed solo. Neal and McLaughlin cite Neal (1995) and Duke (2002) both women interviewing solo, that power lay with the participants. Even here there may be changing gradations. Did being a short, middle aged, female official have any effect on the production of this knowledge with mostly middle aged men, by putting me in a supplicant category, like it or not?

That these questions make a difference is undoubted but what and how much is subtle. Two people contacted for interviews with the usual formal electronic mail, both declined saying that

they were not concerned with day-to-day business and assumed that I was: no one else did. One referred me to the other for the day-to-day and both to their direct reports. I wondered what this was about and what the trigger was as my name is gender neutral.

On the whole I felt nervous sometimes but not patronised or intimidated. Moreover there is a tradition of officer level contact in the state public service and I felt more at home what I took to be officer level. How these effects were produced is a topic for another day.

Morris (2009) talks about honest and dishonest interviewers and participants. Interviewers may develop strategies for asking hard questions and position themselves to optimise the chances of response. She cites Herod (1999) who used 'employee' rather than 'worker' when talking to managers as more consistent with their way of thinking and 'worker' when he talked to unions.

I took the position that whatever I was told would be regarded as true because while I felt comfortable asking 'second questions' and clarifying statements, I did not wish to be confrontational and wanted interviewees to keep talking, which they did.

Dishonest participants may employ tactics to obfuscate, selectively omit or include, and justify (Morris, 2009). I expected that participants wouldn't tell all, even if they knew it. I also expected a Rashomon effect, that is, that people at the same event for example, would remember and relate different aspects of it. Hence I did not have a theory of the substantive that is, topic, situation against which to *judge* what was said but I concentrated on trying to make sure I *understood* what was said and was open minded about it, although even so, with one interview I really had to work at it, and only during transcription did I realise what a gem it was. On the few occasions when I stated my views they were of no interest and I was quickly brought back to listening (see Czarniawska, 2004a, p. 48). She considered that as actors they were committed to their own view of the situation: they spoke and she listened. Only one person directly asked for my opinion, in this instance about the effectiveness of program expenditure on salinity in Western Australia. A conversation developed with a former colleague.

Neal and McLaughlin ask how to bring a 'more "mobile" interpretation of power to the research interview' rather than make a 'consistently powerful' assumption (2009, p. 695). I suspect that some participants did not waste an opportunity to influence or put the record straight but for other motives too. One person took me to lunch and insisted on paying and another took me to

the airport and when I suggested that he was going out of his way, he said that he was ‘just being kind’. In other circumstances both actions could have been seen as influencing.

Interviewing public servants. Public servants occupy a distinctive position in the work world. The objective view of self in business settings described by Whiteley (2004) as due to rules, regulations and prescribed jobs and tasks reaches its apogee in the public service where it is an obligation. The impact is profound. For instance in my employment I have heard: ‘I am only a Level 6’ or ‘You are only a Level 6’ with reference to hierarchical job classifications, making the person a hybrid of self and circumstance, a quasi-object. One participant in the research first thought they were not senior enough to be interviewed, and another referred to the CEOs of the regional bodies as ‘low level public servants, sort of Level, 5, Level 6 type public servants’ (interview).

There is an analogy with Whiteley’s (2004) structured and unstructured self and Hoggett’s anxious official (2006). Du Gay (2006) refers to the separation of person and persona and use of different personae for different purposes. Public officials are personae, that is, they wear a mask, and were described and describe themselves in interviews as ‘faceless’, ‘suits’, ‘bureaucrats’ and ‘shiny bums’, also the name of a public servant choir. These names imply that they are not individuals but homogeneous, or a kind (Hacking, 1995), or objects²⁶.

²⁶ The following is an excerpt from an interview on national radio between journalist Fran Kelly (2010) and the then Deputy Prime Minister, Julia Gillard.

Julia Gillard: Well the Prime Minister has been very clear this reform is to be achieved with no net increase in bureaucrats and if we look at the way the system runs now, we’ve got bureaucrats in Canberra, bureaucrats in state administrations, then of course often those state bureaucrats are making decisions very distant from where hospitals are. And many of these bureaucrats Fran spend a lot of their time working out how to game the system so if you’re in a state bureaucracy how can I shove this cost onto the Commonwealth. If you’re in a Commonwealth bureaucracy how can I shove this cost onto the state.

‘No net increase in bureaucrats’ implies some standardised and dispensable unit, a description which would not be used about nurses, or politicians themselves, all on the public payroll. Anecdotally Ms Gillard was well regarded by public servants in her department.

The substance of the interview is a Commonwealth proposal to exercise powers in state jurisdictions in a similar move to national NRM programs. Government cost and blame shifting is endemic.

Consequently I was not sure what to expect from interviewing officials and how much personal experience (self 1) could be expected as against the statements of office (self 2). Czarniawska (2008) refers to this distinction as the logic of experience and the logic of representation, that is, making yourself look good or expression of the party line. This question was more central than initially envisaged when some people expected to tell me about their experience, invited by the questions about relations.

Neal and McLaughlin (2009) discuss the pain of policy making and were surprised by the emotion felt by some elite officials when their expert report was publically denigrated. When policies don't work out because they have conflicting aims or for other reasons, public officials experience it as failure. 'It is as if they internalize the flaws and faults of reality and make them their own thereby taking on responsibility for what is irreconcilable in their world' (Hoggett, 2006, p. 186). I did not expect the depth of feeling and openness expressed by some participants and their expressed emotional attachment to the policy NHT2/NAP.

I could find little on public servants' feeling relations. In Whitehead's philosophy of organism, although not in Latour's work, feelings, prehension and experience are foundational to his metaphysics as connectivity, between humans, nonhumans or both. We would say 'I was touched' using both senses. Even stones have feelings of the warmth of the sun. More precisely 'each Actual Occasion is capable of feeling and purposes however dim and vague they may be' (Weik, 2006, p. 5).

The extent to which separation into two selves affects relations between officials and citizens was alluded to in interviews. Another aspect is the extent to which the relatively universal language of the state, for instance the language of responsibility used in discussion of Swan River governance, may be opaque to citizens expecting more locality and particularity. A 'language of performance' referred to 'service delivery' to 'customers' or 'clients' (Paton, 2003, p. 29 cited in du Gay, 2006, p. 15) terms in general administrative use. NAP/NHT2 projects used 'investment' rather than say 'funds' or 'money'. Citizens may be expecting the millennial language of morality such as 'trust', perhaps implying partiality to bureaucratic ears.

Ethical Aspects of Interviewing

Ethical concerns arise at each stage of the study and are listed in Table 4. This constant concern is appealing contrasted with a more limited approach directed at meeting institutional requirements.

Table 4

Ethical Aspects of Interviewing

Thematising	In addition to the knowledge sought, the study should consider its potential for improving the situation investigated.
Designing	Participants' informed consent should be obtained, confidentiality secured and the consequences of the study for participants considered.
Interview situation	Consequences for participants including stress and their own understanding.
Transcribing	Protection of participants' confidentiality. Fidelity of the transcribed text to the participant's statements.
Analysing	How interpretively will the interviews be analysed and will participants contribute to the interpretation of their statements?
Verifying	Reporting of the knowledge should be verified as much as possible. It also depends on the style of interviewing and the extent to which the interviewee is prepared to confront the participant.
Reporting	Will the published report adversely impact participants and their organisations or groups?

Source: Based on Kvale and Brinkman (2009) Box 4.1, p. 63. Direct quotations are shown.

Thematising. Social research on NRM in Australia has principally been concerned with on-ground while acknowledging that government plays a major part. I initially subscribed to Davidson and Lockwood's (2009) neo-liberal position of control and command government with an eye to redressing the community balance. However Perth Region NRM didn't see itself as oppressed as indicated in interviews, and Robins et al. (2011).

Actor-network theory was used to determine what, if any, new insights were offered on the research question of relations by treating them as between humans and nonhumans as well as

solely interhuman. A future question would be directed at a more comprehensive understanding of how these connections were made governmentally and the impact of governance.

As mentioned before there is a large gap between innovative social theory and environmental application of it (Lockie, 2007). However, ‘the environment’ is no longer ‘out there’ but ‘in here’: no longer an implicit intermediary but an explicit mediator. Latour asks if our history of ‘*modernization and emancipation*’ (2007, p. 3, emphasis in text) ‘always had another meaning: the slow explicitation²⁷ of all of the attachments necessary for the sustenance of our fragile spheres of existence?’ (p. 3). These are becoming more explicit, unfit for life. Latour continues:

What I am saying, to put it too bluntly, is that while we might have had social sciences for modernizing and emancipating *humans*, we have not the faintest idea of what sort of social science is needed for *Earthlings* buried in the task of explicitating their newly discovered attachments. (p. 3, emphasis in text).

This is my concern.

Designing. Confidentiality was a major consideration. In Western Australia, Section 9 (Principles of conduct by public sector bodies) of the *Public Sector Management Act 1994*, and consequential Administrative Instructions, oblige public servants not to disclose to any person any information relating to the business of the public service or other Crown business obtained by them. Personal opinions must be flagged as such, for example in conference presentations, but these must not dispute the policy of the government of the day²⁸, or for prudential reasons, any government.

The *Criminal Code Compilation Act 1913* s 81, Disclosing Official Secrets, forbids unauthorised disclosure of official information which comes into the possession of a person who is a public servant and applies in Western Australia after ceasing to be a public servant. One interviewee drew my attention to his contract of employment to this effect.

Commonwealth public servants must comply with the *Public Service Act 1999*. Section 70 of the *Crimes Act 1914*, prohibits unauthorised disclosure. A recent book, no exposé, by a former employee in the Department of Prime Minister and Cabinet, jeopardised the culture of trust in

²⁷ Latour uses Sloterdijk’s ‘explicitation’ (2004) whose example was the replacement of air by gas in World War I.

²⁸ Ken Henry, former Secretary of the Commonwealth Treasury, in a private in-house briefing criticised the federal government’s water policy and policy-making. His comments were leaked, straining his relations with the Prime Minister and his performance pay was cut (Clark, 2009, p. 35).

which professional conversations between public servants and ministers—especially the Prime Ministerial staffers and other officials, are considered sacrosanct (Burgess, 2012, 4 May).

I asked three public sector colleagues about the circumstances under which they would be interviewed and followed their advice. They agreed that if there was the slightest possibility of an official being identified then I should not expect any criticism of government policy and only safe comments. Anyone who wanted to stay a senior public servant would not want comments to be identifiable and this could be achieved by not using names, perhaps naming the agency but a non-specific role, if any, and aggregation of comments with others. In this research it is *likely* that an agency could be identified and *possibly* a member. The quotations used are not attributed in any way and their use complies with the undertakings given in the Participant Information Sheet (Appendix I). Where made, they reflect favourably on the person making them and their organisation, should either be identified. Furthermore, nine people that I know of, have left the particular organisation, making identification a little bit harder and some of the ethical issues in this study have been blunted with the decreasing immediacy of NHT2/NAP. For confidentiality reasons interviews have not been numbered in the text and the reader will not know which anonymous participant made which comment. A possibility was to have a few ‘wild cards’.

When designing the project, I had no idea how rich the discussions would be which posed a problem of whether to amalgamate data further to enable it to be used. The sampling and design meant that senior people could be referring to peers and colleagues, an argument for data aggregation of some sort in analysis. Original speech has an unmatched immediacy and freshness, lost when translated into the more general. Dugdale (1999) aggregated for reporting. She used an actor–network technique to analyse ‘each snippet of talk as an arrangement of words and silences which performs an IUD as a particular object’ (p. 124) and synthesised reported conversations.

Timing and confidentiality. As a state public servant in a related area I was not sure how my request for interviews would be regarded at a sensitive time of transition from NHT2/NAP to Caring for our Country. I surmise that one interview was declined because of ‘temporal variation[s] in the *mode of entry*’ (Ward and Jones 1999, p. 306, cited in Desmond, 2004, p. 266, emphasis in text). She found that while she was advised that ‘policymakers are not inclined to speak openly on newly constructed positions’ (p. 267) access was not denied. She attributes declining to be interviewed as atypical because it is an opportunity to disseminate a position. I also found it atypical.

Interview situation. Different forms of interviews serve different purposes, so for example, journalistic interviews inquire about events. The research interview for their purposes is ‘based on the conversations of daily life and is a “professional conversation”’ (Kvale & Brinkman, 2009, p. 2). Usually the interviewer controls the situation and the topic but it was clear that these participants knew more about it than I did and any exposition on my part wasted interview time. I have discussed the implications above.

Ruming (2009) identified initial informants as powerful or key actors in the industry when he invited others to participate in his research on the assumption that they would then be more likely to participate. Data from initial interactions was used to underline his expertise and standing to later participants in order to enter the network (see p. 460). Beyond mentioning the name of the person doing the referring, I did not mention who the others were, or what they had said in order to maintain confidentiality. I made an exception, noted in the analysis, when one person referred in a heartfelt way to his good relations with another which were crucial in overcoming some difficulties and maintaining their esprit. I mentioned it to the other who agreed, although I noticed what I read as slight drawing back when I did so.

Transcription. Transcripts were labelled with an interview number on a face sheet which also included the time, date and place of interview. Background information on the interviewee, initials or any other information on them was not included for confidentiality reasons. Statements which could be readily attributed or adverse were deleted. Conventionally initials are used to identify the speaker at the beginning of each conversational turn. I used plain text to indicate the participant’s speech and italics for mine as dummy initials are a distraction. Transcripts are kept in a locked cabinet for five years under Curtin University’s ethical policy on the conduct of research. Recordings were erased after transcription.

Analysis. Elements of contestation were important for understanding. Acrimony was an open secret and in some past and isolated instances was pronounced enough to be remembered. Conflict is important in the conduct of relations between governments, between public servants and the public, in adaptive management, and in actor-network theory as indicative of a matter of concern. Moreover while remarked on, it was not emphasised and seems to have diminished over time.

A decision has to be made as to how penetratingly should interviews be analysed. Individual psychology was not my aim so personal exposure was not a concern. Second: 'The expected outcome of qualitative descriptive studies is a straight descriptive summary of the informational contents of data organized in a way that best fits the data (Sandelowski, 2000, p. 338). While still interpretations, there were the 'readings *of* lines as opposed to *into, between, over, or beyond* lines' (pp. 335-336, emphasis in text). Qualitative description is data near that is, without the interpretive transformation of data in for example grounded theory, and less interpretive than phenomenological descriptions (Sandelowski, 2010).

Kvale (1996) contrasts reading between the lines 'the meaning level' (p. 11) with the factual level, easier to obtain as an everyday conversation. In the example given the factual question 'What grades did you get?' is compared with a meaning question; 'You feel that the grades are not an adequate measure of your competence?' Probably there is no such thing as an interview without meaning unless perhaps at a customs official's desk. Whitehead would agree. 'If you wish to locate an experience devoid of interpretation, you may as well ask a stone to write its autobiography' (Whitehead, 1929/1978, cited in Stengers, 2008, p. 15).

Verification. I asked participants to enlarge on their statements if I did not quite understand anything and verified it as far as possible with alternative documentary sources. Kvale and Brinkman regard the researcher's preparedness to critically question participants as an ethical matter, which may result in more precise knowledge but in my view could antagonise the participant and disrupt the interview. Their expert interviewer is more concerned with allowing the interview to continue fruitfully. They also propose that the interviewer should maintain 'an attitude of maximum openness to what appears' (p. 138). In my view there is choice between hard questioning versus more excursive questioning which could reveal insights quite new to the researcher and possibly to the participant who has started to think in a 'flow' mode (Csikszentmihalyi, 1990).

'Second questioning' for example 'was that the same as before?' keeps the ball rolling while verifying. The interviewer's questions are shown in italics and will be in all subsequent quotations of dialogue.

Who was the one [representative] you have on Organisation A?

I haven't seen them for a long while. I'm not sure who the latest one is. [...] Q is the one in Organisation B. He's there all the time but the one for Organisation A, I'm not sure who it is now because they don't show very often.

Oh so what would you infer from that that they don't show very often? Is it that important or what?

Interesting one. I don't know whether it is left to the individuals at officer level [...] as to whether they go or not or whether the councils make them feel welcome or not. Organisation B has always had an approach of they're quite open and happy to have [officials] at the table being ready to contribute.

Organisation A have said: 'Oh, you can sit over there as an observer', so they deal with them quite differently on the board which I felt a bit strange but that's the way, the CEO influenced the Chair, I think, to have it that way.

Why do you think? Do you want to speculate on that?

I'm not sure... It's never been one that has been discussed. They've been quite clear that those at the table are the board members and anyone else sits as an observer in the back rows if you like.

So it is more formal?

Yeah, well. A lot less formal than Organisation B in the way they do business but that formality is enforced. Strange one. [...] None of us have seen it as an issue to debate or anything.

I triangulated what was said against secondary sources. Potential existed for conflict of interest of officials as board members of regional bodies and it was recommended that their constitutions be amended to remove them from 'deliberative, governing or decision-making roles within the Groups' (Hicks, 2006, p. 75).

While removing some statements in the above, I have left sections implying that board membership was regarded by the participant and more widely I would surmise, as a matter of personal influence and organisational tone which affected relations and seemed unwelcoming. It could also be read as yet another way that government dominates a collaboration by enforcing the law that a board member's overriding duty is to put the interest of the board first rather than theirs as representatives of another organisation, or worse, their own. Another participant referred to these observer officials as 'clams' who didn't contribute.

Reporting. I had proposed to combine comments from several people in the same organisation, or into a non-specific role across organisations, to obscure identity. As outlined before, categorisation of interviewees was difficult so I decided to use any quotations as being from a member of the 21 interviewee network. My main concerns were that there would be no repercussions and that NRM would not be hindered.

There were five women of the 21 interviewed and recorded reflecting a gender imbalance. Gender was randomly assigned to preserve anonymity and to indicate gender balance rather than use the text alternative of 'he/she', both resulting in losing of some expressive value.

At the time of interview I stated that my then supervisor, Associate Prof Brian Bishop would be the only other person to have access to the participant's name and the interview. In the event names were not mentioned to anybody. Before I changed supervisor to Dr Michele Willson all names had been deleted from transcripts and names initials or organisational affiliation were not mentioned. I also stated that information from interviews would be used in my dissertation and also potentially academic papers. The research conformed to Curtin University's policy on ethical conduct in research involving humans which makes confidentiality a prime consideration.

Personal consequences of interview interaction, stress and changes in self-understanding. Changes in self-understanding from interview interaction *per se* were limited. The interviewer talks too much perhaps and fills in silences. There is a subtle art of silence in interviews and a fine line between tactfully waiting a little longer to allow someone to consider a response, and manipulatively using silence or not taking a conversational turn to pressure someone into speaking. On another project, interviewing jointly with a colleague who said little but the essentials, I thought she lacked rapport and finding a medium would be my goal for any future interviewing.

My experience has often been as the 'soft' member of a 'hard' bio-physical science or engineering group. Over the years I have had varying degrees of involvement with the social construction of reality as a counter to positivism but this project made me realise how hard core I *really* was because reality isn't socially constructed, it isn't all in the mind, but it is not all 'out there' either. Actor-network theory unveiled a new, shared, continent.

The most stressful part of these interviews came from objects for example the five hour flight across Australia to Canberra. The practicality of making numerous trips for one interview at a

time was daunting. Australians call this ‘the tyranny of distance’ by which the relevant landmass as the ‘obligatory passage point’ (Callon, 1986) exacts an energetic toll.

The new recorder had vexing settings and propensities which needed to be overcome both on the day and particularly when transcribing from it because of losing the place for example. Transcription software shifted the energetic toll from instruction manual to my body when I pressed the wrong button, endured too tight earphones, swore at an unresponsive microphone which came with the speech transcription package, and deciphered what it really meant as it was hard to train to reproduce what it heard as instructed (see Latour, 1988). I probably didn’t measure up to its script.

In Chapter 5, I will describe further how a little bit of a particular, local, and material person, their speech, is siphoned off as Harman’s ‘nectar’ (2009) with the aid of a digital device enabling compression of the *material* sounds into a *form*. This form is matter for the next step, and the translation of *this* matter into another form, an inscription, will be described. Through the remaining four of Kvale and Brinkman’s seven stage interview process, these translations will become a text, combinable with other interview texts, able to be conveyed to a distant reader at now remote times. The texts will become Latour’s ‘immutable mobiles’, ‘mobile but stable objects which won’t corrupt or decay, and which are combinable’ (Latour, 1987, p. 223), that is, they can be shuffled and compared in the analysis.

Chapter 5: Research Methodology II

INTRODUCTION

In what follows, what I will now call the translation/transformation of the seven interview stages is finalised. Choices will be made such as whether to remove the local and particular ‘ums’ and ‘ahs’ from the participant’s speech and consign them to oblivion as dead digital matter, or not. If these material effects are translated, transcribed and included in the more circulatory textual inscription, could they give offence? Should quotations be separated from their fellow text or left with residual links such as initials? Each choice of form becomes matter for the next.

Notice that, at every stage, each element belongs to matter by its origin and to form by its destination: it is abstracted from a too-concrete domain before it becomes, at the next stage, too concrete again. We never detect the rupture between things and signs, and we never face the imposition of arbitrary and discrete signs on shapeless and continuous matter. (Latour, 1999a, p. 56)

Latour is describing a logic of events in which ‘events at each point along the pathway [are considered] as a transform [...] of events at any previous point (Bateson, 1972, p.410). Each step from the more particular to the more universal is a transform with the more particular and local providing the basis of aggregation or ‘context’ of the next and then the next—or the reverse sequence—in a series of overlapping sets as abstraction. Latour’s example of the Boa Vista forest (1999a) was used as an ordering device for description and other techniques are discussed.

SEVEN STAGES OF INTERVIEW RESEARCH CONTINUED

Stage 4. Transcription

Transcription is an abstraction, that is, a method which will enable action at a distance, by transformation of an interview event in one place at one time, into a script or actant which is able to be moved around through *inscription* into other places and times.

Thanks to inscription, we are able to oversee and control a situation in which we are submerged, we become superior to that which is greater than us, and we are able to gather synoptically all the actions that occurred over many days and that we have since forgotten. (Latour, 1999a, p. 65)

Transcription makes the actual occasion of the interview event, stable, mobile and combinable. A transcription is mobile because it needs to be moved around, stabilised because once transcribed it is unlikely to change, and combinable because it has features compatible with others to which it will be linked, such as a computer file. The event of the interview is able to be

transported into this dissertation and the world by having a small portion of its circumstances abstracted or siphoned off with which it encounters other small portions of events, me fiddling with it for example (see Harman, 2009, Latour, 1999a, pp. 126-127). The more this ‘noise’ is eliminated, the greater the intelligibility of the transcription, as there is less and less novelty in it. It also *replaces* the original event where for instance, it was also accompanied by kinesics and paralinguistic communication. Analysis abstracts it a little more.

As a *metaphysical* encounter, abstraction occurs between actants as connectivity. There is no need for links and ties between entities, but there are rather more or less stable processes depending on the stage of the process of concrescence. Concrescence has two elements namely actual occasions (Latour’s mediators) which are the active principle, and eternal objects, as a pure potential. This difficult notion explains in Whitehead’s scheme ‘how potentiality inhabits actuality without being reduced to it and without having to posit a separate realm of abstract, yet existing potentials (Halewood, 2011, p. 73).

For example, when young we are taught helpfulness and notice kinds of helpful actions which we can do and which others will recognise. We draw on the potential of helpfulness, to actualise it, by say, feeding the family cat, in an actual occasion. Helpfulness would not exist if we did not *do* it. We were told that we had been ‘really good’: objects make relations. By doing helpfulness we made it more real: relations make objects. Note that there is no helpfulness waiting in the wings somewhere. It *becomes* by ingression into an actual entity.

Helpfulness is both single and multiple. The same principle applied as the expert committee abstracted or translated the IUD. Some of helpfulness (or IUDness) is siphoned off or abstracted from previous actual occasions by use on this occasion. Abstraction in *this* sense is not epistemological but, to repeat, ‘the very stuff of relation itself’ (Harman, 2009, p. 55) connecting all existence.

Thus: ‘The philosophy of organism is mainly devoted to the task of making clear the notion of being present in another entity’ (Whitehead, 1929/1978, p. 30, cited in Halewood and Michael, 2008, p. 39). In an example, Latour (2005) points to the provenance of each component of a lecture room, which has been assembled (that is, abstracted) over time from quarries and forests through innumerable processes and now enables teaching. Transcription is now discussed in this light.

Kvale and Brinkman suggest that transcription quality is rarely addressed in the literature of

qualitative research (see p. 177). I suggest that consideration of it as an abstraction supplies a novel means to do so. While not actor-network theorists they refer to the ‘conversational interaction [...] becoming abstracted and fixed in a written form’ (p. 177, my emphasis), and the completed transcripts become ‘*the* solid rock bottom data’ (p. 177, emphasis in text) of the project, a ‘black box’ (p. 270). In actor-network theory a black box is a stable, taken for granted actant which doesn’t need to be investigated further. Metaphysically these replace substance as usually understood (Harman, 2009).

Continuous decisions are made about what to exclude in distilling the research. Latour uses an ‘industrial metaphor’ (p. 77) to describe the journey of oil from wells in Saudi Arabia to the petrol station in Jaligny, the French village where he buys fuel. The fuel does not ‘resemble’ the Arabian oil; ‘it has merely retained something of that oil, a kind of *nectar* of the oil expressed in terms comprehensible to the internal combustion engine’ (p.79, emphasis in text).

Transcription of audio-recorded interviews obviously involves translation from hearing and looking at another, in a situation with its own noises, smells and sights, to looking at a page of text in silence. It is the difference between eating a plate of food and looking at a picture of one but which is taken as conveying the original occasion. The transcript retains something of the original occasion but recipients are not uniform like internal combustion engines. Sending a copy of the transcript to the interviewee may be fraught for this reason. Speech has characteristics which are not conveyed in writing and the more conversational the transcription, the less likely is it to be acceptable if sent to the interviewee for review as it may not be the fluent exposition which he/she thought (see Dunn, 2010, Box 6.13, p. 123). Kvale and Brinkman suggest deciding before transcribing what to do, and using a more formal style or sending an explanatory note if interviews are to be sent to participants. Fidelity to the interviewee becomes a difficult proposition and giving a copy may not solve the problem as a text is simply not the same as speech (Czarniawska, 2004a).

Transformation of the data has unknown effects. I transcribed the interviews verbatim. Repeated listening enabled me to grasp patterns and connections but it was also an education in listening as what I thought I heard was not necessarily what was said. What was described as a matter of mechanics, cost and research hygiene to Kvale and Brinkman was an existential moment for me as I realised on checking that I had misheard the same statements over and over, from a recorder and by inference in life, where the replay options are limited. Here is an example. The different word is shown in italics.

Initial: 'I think it was \$12 million over three or four years working with...we put together five or six partners in WA and a whole lot of other people'.

Corrected: 'I think it was \$12 million over three or four years working with...we put together five or six partners, UWA and a whole lot of other people'.

Voice recognition software (Dragon Systems' Naturally Speaking) was used for about half of the interviews which improved typing efficiency once the software had been trained to recognise my speech. This took some time and the software sneaked in its own versions of what was said which required rechecking and typing to get the text to verbatim. Here is an example.

Initial: 'So from that viewpoint it hasn't really changed very much'.

Corrected: 'So to that extent it hasn't really changed very much'.

The first is about perspective and the second about dimension, just a nuance, but it could be telling. It got bolder.

Initial: 'What governments like to do is they look to solve their problems by making big amounts of balls about lots of dollars'.

Corrected: 'What governments like to do is they look to solve their problems by making big announceables about lots of dollars'.

Accuracy varies from 95 percent post training to every third word wrong (Dunn, 2010 p. 121). Without it, an hour interview took about two days to the final transcript: Dunn suggests four hours of typing; Kvale and Brinkman's experienced secretary took five hours; and Fazakerley (2005) ten hours per 40 minutes of interview. It depends on speed of speech, recording clarity, speed of typing, indicators of conversation included in the transcription text, and so on.

Translation to another sense is irretrievable. Specificity is lost at every step of the way including the artificial layout on the page which aids scanning at a speed much faster than the ear can hear the spoken words.

The transcription style whether more formal verbatim as here, or one which reflects the oral style of the speaker, can vary considerably neither being more accurate than the other. I annotated some non-verbal aspects such as long pauses; where I overrode the interviewee; laughter; and tics such as using 'say' as an introduction to a story.

Interviews were transcribed or written up as soon as practicable.

Transcription is in itself an analytic technique enabling transformation of digital data into something else which enables further actions, while retaining the interview's nectar. Once transcribed, scripts were arranged in order of interview and then read through to remind myself of the scope, the location of information, and any obvious connections. I estimated that, including analysis, I would have read each completed interview at least six or seven times and some sections of each more often. They became the stable, incorruptible black boxes, matter for the next steps.

I use electronic mail extensively which provided a log of contacts and events.

What did I learn in transcription? I had painstakingly transcribed a specific interview the previous afternoon (7 May, 2009) and simply did not notice or transcribe any of the pauses and affirmations shown in the following interview extract. I read Gubrium and Holstein (2009) on collaborative interviewing in the evening and next day discovered a new world of co-agency, where the narrative was advanced by each side in affirmation and fed back as a joint effort.

In the following, interviewer and participant were talking together quickly which might not be obvious from the transcript which implies that each waits for a conversational turn. The participant was talking about the difficulties of working in a three way partnership when the relationship between two of the three had 'gone off a bit' and how it affected the capacity to implement the program effectively.

26.25²⁹. It makes it more difficult to do some of those, I mean, it probably doesn't implement, ah affect the day to day operations.

No.

But what it does do it affects the ability to get to ah, a point on some of the stickier things ah more easily.

Yeah. I s'pose because you have to back track.

Yeah. Yeah.

²⁹ Elapsed time of interview shown on recorder.

and all that stuff and there's no shared understanding of what you're there for.

Yep.

26.45 Um I think we've talked about how did these things influence your work?

Mm. Mm.

And how did you respond. I think we've talked about that.

Yeah. Yep.

Having for example having to ah be a bit more cautious in what you do.

Yeah, yeah.

to cover more bases

Oh yeah.

to ensure that if there is discord between them that you don't transmit something that is not going to work.

Yeah. Yeah. That's right. It certainly, it certainly impacts on your ability to get stuff done.

Mmm.

And happily, and ah to get stuff done and get done well.

27.17 Yeah. Yep. Mmm. Mmm.

The interview is collaborative with both contributing to the sense of it 'going right'. It is an example of relationship as double description (Bateson, 1972, 1979/1988). Each party to the interaction has a monocular view of it and I first transcribed in this vein, before I realised the collaborative double view. 'The double view *is* the relationship' (1979/1988, p. 142, emphasis in text) which is of a higher logical type. The two people instantiate an interview by responding in fairly predictable or habit-like ways. Bateson describes the double interaction as 'learning the contexts of life' (p. 142).

The participant confirms and encourages the interviewer, tacitly endorsing her as an interviewer. Bateson refers to this individual learning in a more particular sense as: 'That genus of *receipt of information* (or call it *learning*) which is learning about the "self" in a way that may result in some "change" in the "self"' (p. 142, emphasis in text). This 'self' has changing boundaries, if indeed there are any, or even if it has a centre at all. Bateson's notion of a fluid self which changes with more information resembles Latour's self which becomes more real through 'plug ins' (2005). These mediating, intertwining interactions, are not so different from Latour's 'trials'³⁰ or Whitehead's prehension.

More profoundly, I also now suspect that transcription as a Latourian black box is bottomless and incapable of being totally right or it would be the interview. It is a mystery that the event of an interview is simulated by pages of text and it is described in more detail as an instance of Latourian translation later in this chapter.

Stage 5. Analysis

Two main methods of analysis, namely bricolage, and then abstraction are outlined. The first follows, and then the remainder of Kvale and Brinkman's sequence of stages. As mentioned, abstraction or translation, together with other analytical techniques used, then follow.

Bricolage. While acknowledging that the semi-structured life world interview, influenced partly by phenomenology is their focus, Kvale and Brinkman state that their approach may be used for research such as hermeneutics, inspired by other philosophies. Some non-interpretive approaches are touched on as eclectic or 'bricolage' from the French which corresponds to fixing or do it yourself in home improvements. France is full of retail barns called 'Mr Bricolage'. '*Bricolage* is something put together using whatever tools happen to be available, even if the tools were not designed for the task at hand' (p. 233, emphasis in text). It is improvisatory and, indeed, innovative. They contrast these more eclectic modes of interview analysis with more systematic ones and observe that they are quite common. A researcher in the practice disciplines is not exactly precluded by their emphasis on human agency but needs to do more work.

Levi-Strauss' bricoleur is a 'Jack of all trades or a kind of professional do-it-yourself person' (1966, p. 17 cited in Denzin & Lincoln, 2003, p. 5). Unlike this down to earth researcher, in qualitative research Denzin and Lincoln compare bricolage to quilt making and montage and

³⁰ These various experiments define emerging actors by eliciting new performances. An interview is a trial. This text is a trial, a negotiation with a resistant reality.

conclude: 'In the interpretive *bricoleur's* world, *invention is not simply the child of necessity, it is the demand of restless art*' (p. 635, emphasis in text).

For my purposes bricolage is *emergent*. Tension arises between deciding in advance what will be noticed in and having notice attracted, between over-riding and responsiveness. 'Bricoleurs accept their condition without trying to impose an alternate condition from outside, as it were' (Chia & Holt, 2009, p. 171). They don't decide in advance what will be noticed but go more with the grain of things.

In research and implementation of wind turbines in Denmark, Garud and Karnøe (2003) refer to 'emergent co-shaping' (p. 284), the continual adjustment of learning by doing. Bricolage 'preserves [these] emergent properties' (p. 296). Advances in Denmark were not predicated on 'grand plans shaping the emergence of the path' (p. 295) but adaptiveness through small and continuous improvements. By contrast, in the United States a search for breakthroughs and dramatic outcomes was less successful. In other words reality was shaped gradually and not attempted to be imposed exogenously as an alternate condition.

Craft interviewers respond to objecting objects in their encounter with Latour's 'hermeneutics of the world' (2005, p. 245) that 'vast ocean of uncertainties' (p. 245). The encounter with the thing is through life itself, circumstances, that which stands around the bricoleur as the next part of the translation. The researcher has to be on the ball.

The craftsperson/interviewer can overrule an objector by imposing a routine on it, turning it into an obedient intermediary, rather than a mediator which makes the researcher act. Thus transcription by the researcher rather than a third party increases validity, strangely as a third party would be thought to be more objective. The researcher's encounter, crucially through hearing, but also touch as well as sight, comprises an event where first hand is not only better than, but different from, second hand, as it is more particular and material. Hearing provided tone as well as content. So I committed to new trials, that is, encounters with the resistant world, to get it right whether in transcription, or elsewhere. There was 'no jumping' as Latour (2005) emphasises.

Kvale and Brinkman are parsimonious with advice on bricolage and refer to techniques from Miles and Huberman (1994), to generate meaning in their terms, but equally to order. Interviewing as bricolage still requires 'rich description and well-controlled information' (Kvale & Brinkman, p. 235).

Abstraction and meaning. Description is a key technique in actor–network theory and is discussed further in Stage 7, Reporting. Finding out *how* to do rich description other than ethnographically was surprisingly hard. I asked a well-read qualitative researcher who could shed no light and found very few examples other than Sandelowski (2000, 2010), Latour (2005, see pp. 141-156 for principles on how to write an account), Latour (1988, p. 306) and Bateson (1979/1988).

Sandelowski suggests qualitative description ‘as *basic* or *fundamental* qualitative description’ (2000, p. 334, emphasis in text) to formalise an often used and distinguishable method which is frequently rebadged with an epistemologically more prestigious title such as grounded theory or ethnography. Qualitative description presents the facts using everyday language with low inference interpretation by contrast with these other methods which ‘re-present events in other terms.’ (p. 336). In it, ‘concerns remained concerns and perceptions remained perceptions’ (p. 338) rather than signs of something else.

Sandelowski situates qualitative description in naturalistic inquiry following Lincoln and Guba (1985). I have mentioned before that ‘naturalistic’ could imply something environmental and I was initially perplexed by it. Sandelowski provides a clarifying statement.

Naturalistic inquiry is a generic orientation to inquiry that includes not only qualitative research, but also forms of behavioral research involving humans and animals, such as ethological observation. Naturalistic inquiry implies only a commitment to studying something in its natural state, or as it is, to the extent that this is possible in a research enterprise (Lincoln & Guba, 1985; Willems, 1967). That is, in any naturalistic study, there is no pre-selection of variables to study, no manipulation of variables, and no a priori commitment to any one theoretical view of a target phenomenon. (Sandelowski, 2000, p. 337).

A sticking point is the extent of interpretation, which divides more interpretive methods such as grounded theory from less, such as qualitative description. However: ‘All inquiry entails description and all description entails interpretation’ (Sandelowski, 2000, p. 335). However, how to draw the line was unclear and I went into it more thoroughly, together with the implications for method and analysis.

Analysis for Kvale and Brinkman is used to generate meaning, which, objects don’t do, by definition, privileging humans. However in animal experiments Bateson (1972) used learning to describe how these created order, not meaning, for themselves. Latour and Woolgar (1979/1986) head a chapter ‘Creating Order out of Disorder’, apt for quite simply *mapping*, so

analysis was thought of as ordering which also provided philosophical consistency with actor-network theory.

Description and interpretation. Kvale and Brinkman cite Giorgi (1975, 1992), and Sandelowski (2000) cites Giorgi (1992) but for different reasons. The former note his contribution to phenomenology and his distinction between interpretation and description which do not preclude each other, but may serve as signs for, in their terms, the separation of the human world of meaning from the realist world of things. Sandelowski refers to the 1992 work in which the describer chooses what to describe.

The distinction between description and interpretation in qualitative research rests upon what the researcher decides to do when the data is ambiguous (Giorgi, 1992). Giorgi gives the example of a therapeutic situation when the client was not sure whether ‘the tears’ or ‘the telling insight’ came first. A description regards this as interesting but further data would be needed to find out the answer rather than depart from the evidence. An interpretive approach would find a source for ordering the tears from outside the data, such as common sense or theory. ‘To stay strictly with the evidentiary “givenness” of any research situation is to describe: to depart from it [...] means to engage in interpretation’ (p. 134). The researcher ‘describes what presents itself precisely as it presents itself, neither adding nor subtracting from it’ (p. 121). If the data do not answer a question then the researcher must seek more for the answer or go no further. In summary the conditions for the use of either are determined by the type of evidence and the ‘motivation’ (p. 135) for staying within or going beyond it. In actor-network theory this is important because the process *is* the description. Latour refers to being ‘obsessively literal’ (2005, p. 103).

Giorgi (1975) uses a thematic method in which the researcher restates participant statements as simply as possible without altering their meaning. A careful reading of some of his examples shows care to be literal and not introduce new interpretations (see Appendix IV). His methodological purpose was to show systematic and rigorous analysis of ordinary language data which do not need to be transformed into quantitative expressions.

Kvale and Brinkman refer to this method as ‘meaning condensation’ (p. 205) in which the sense of long statements is expressed in briefer statements or themes. In my view this could equally be called abstraction. However themes are subtly different from an abstract as they don’t seek to represent a larger whole by a smaller one. It is a difficult point but in for example, the abstract

of a journal article, it may or may not be its theme, but it should only include what was already there and be minimally interpretive.

Kvale and Brinkman describe a five step process in interview analysis.

- Read all the interviews to ‘get a sense of the whole’ (p. 205).
- Choose the natural meaning units of the texts as expressed by the participant from his /her viewpoint as the researcher understands it.
- Restate these as simply as possible (as themes) which may be further interpreted, or not.
- Consider these in the light of the research purpose.
- The essential themes are then ‘tied together into a descriptive statement’ (p. 207).

In other words, meaning is obtained by abstraction but it is not quite the same as Latour’s abstraction, in turn based on Whitehead’s Method of Extensive Abstraction (1929/1960)—‘Extensive Abstraction’ henceforth. The difference is the emphasis placed on retaining the part/whole relation as for example, in a nested series of Russian dolls. Latour uses ‘abstraction’ in the sense of re-sizing a larger body while maintaining its form.

If by ‘abstraction’ is meant the process by which each stage extracts elements out of the stage below so as to gather in one place as many resources as possible, very well, we have studied [...] the process of abstraction exactly as we would examine a refinery in which raw oil is cracked into purer and purer oils. (1987, p. 241)

The purest oil, or Kvale and Brinkman’s final descriptive statement, is the black box or summation of the abstraction but a more interpretive one.

‘Abstract’ rather than *précis*, summary, segment, meaning condensation or theme will be used because to abstract means to siphon off the part of a whole maintaining the relations between the two with nothing new added. An abstract is usual at the beginning of an academic article with the expectation that it will represent and stand for the article, and not introduce anything new.³¹ Giorgi’s rule of no new information as the criterion of description, holds because more information would change the abstractive hierarchy. The abstract provides an overview and so enables the mass of material in many articles to be shuffled and compared conveniently as well as being a relatively more general and standardised account of the entire article. It is a Latourian immutable mobile.

³¹ These abstractions should not be understood to be a *more truthful* version of the original statement. Analogously the abstract of a journal article is not a more truthful version of the original article and it can’t be because there is nothing more in it than was in the article.

Abstraction is used as a technique to analyse the research question on adaptive management as some answers ran to four pages of transcript, making comparison difficult. A more interpretive alternative would be to extract themes and then analyse them.

As mentioned above, the choice was made at this point to continue with description of the interviewing stages. Other techniques applicable to actor-network theory follow at the end of this chapter, including Latour's description of the abstraction of the Boa Vista forest.

Stage 6. Verification

In this section validation, that is, the philosophy of valid knowledge, its application in social science, and the practical issues of interview research verification are briefly outlined and discussed.

Validity. Kvale and Brinkman propose that the answer to the question of what is valid knowledge involves the philosophical question of 'what is truth?' They take from philosophy three criteria of truth, namely:

- *correspondence* with an objective reality;
- *coherence* as consistency and internal logic within a statement, that is the 'constitution of truth through dialogue' (p. 247); and
- *pragmatic* or practical consequences.

The three are discussed leading in the first to a conception of validity as quality of craftsmanship. They note a shift from verification, as the correspondence theory of truth to falsification, or the ability of a proposition to defeat alternatives: the more it has defeated, the more trustworthy the knowledge, obtained by constantly checking sources of invalidity and questioning.

The second criterion as communication to others about the knowledge and their involvement, and the third as pragmatic action, are together with falsification, consistent with Latour's position. The stronger form of pragmatic validation is when an intervention based on the researched knowledge may '*instigate* changes in behaviour' (p. 258 emphasis in text). In actor-network theory it makes someone or something act, which extends the chain of translation making it more real.

Kvale and Brinkman argue for the incorporation of validity into every step of the research but without overemphasising legitimation. Ideally the research craftsmanship is so good that it is convincing in its own right, the knowledge claims carrying 'the validation with them like a

strong piece of art' (p. 260). It is well articulated (Latour, 1999a), that is, it is a proposition, or actual occasion enabling entities to come into contact, modify their relations and become unified—or not.

The finished object will conceal at least some of the work that preceded it as mistakes are painted over. Chia (1998) in discussion of Bryson (1982) describes Oriental art, especially Chinese brush-painting and calligraphy, which shows all its history in the brush strokes. The viewer will appreciate these as well or poorly articulated, a craft virtue, rather than gaze directly at the finished picture. The viewer's translation/transformation continues the event of the picture which is thus made more real but not necessarily more indisputable, which is what Kvale and Brinkman want.

Latour's work is a triumph of style and rhetoric but ironically the labour is largely erased. Reality is as unified and as indisputable as he can make it, and as the famous victor, he has taken if not all, quite a lot. By contrast Law (2004) and Law and Singleton (2005) are at pains to convince us that they are a different kind of researcher, who want to show us the brushstrokes for us to follow, in a reality which is messy not unified, to which I am obviously sympathetic. They add to the chain of reality by being good at this reality research and getting cited.

Kvale and Brinkman's discussion of validity begins with an appraisal of how *objectivity* pertains to interview research, by reference to five key meanings of it. However when objects are referred to, they do not mean matter. 'In the interview conversation the object speaks' (p. 243).

'Objective may also mean reflecting the nature of the object researched, letting the object speak, being *adequate to the object* investigated, an expression of fidelity to the phenomenon, expressing the real nature of the object studied' (p. 243, emphasis in text).

One of these five meanings of objectivity, discussed previously, was obtained by '*allowing the object to object*' (p. 243, emphasis in text). In their terms, 'subjects' that is, people, may accommodate the researcher, especially if less powerful, and should be encouraged to object and ask questions. A virtue of craft interviewing is that there *can* be an interaction and the researcher can test what the participants say directly by reflecting it back to them. In my research participants were sent the questionnaire before interview, and invited to ask questions, providing an opportunity to object from inception. I was asked about my background, affiliations and intentions, in the interview warm up chat phase, and in telephone conversations.

Kvale and Brinkman divide their human world into two. One exists in numbers from which it follows that objectivity and validity are naturally restricted to measurement. Consequently ‘only quantitative methods then reflect the real nature of the social objects investigated’ (p. 243). They consider that for the other interpersonal and linguistic interview social world, qualitative research interviews best produce objective knowledge of it.

Four other meanings of objectivity are listed.

- *Freedom from bias.* As well as being reasonable, the researcher is obliged to take care in cross checking and verifying the research through triangulation, for example. Stated like this, it seems rather prosaic but in biophysical science triangulation entails adjudicating about the toughness of several data strands which have survived to date.

Unlike Kvale and Brinkman’s assessment of quantitative science: ‘The practices of science are quite obsessively textual. Labelling, naming, writing down, noting—they are fixated on the business of keeping tabs on things. And if this fails then the work of the laboratory fails’ (Law, 2004, p. 30, Latour, 2005). This is because the scientific practices not only make relations ‘*they also make realities*’ (Law, 2004, p. 29, emphasis in text): they are not discovering some reality out there but enacting one, the same one if it is the same assay (see Latour & Woolgar, 1979, p. 183).

This is particularly relevant to individual research where pet theories are unchecked by group process, unlike in a laboratory. A possible advantage is that the individual is not socialised into what *should* be, and more open to innovation as occurred for example, in the discovery of pulsars (Latour & Woolgar, 1979 pp. 32-33).

Latour’s freedom from bias also relates to learning from the actors what makes them act and which groups make up the world. Actors are *events*. They are:

Any entity that modifies another entity in a trial; of actors it can only be said that they act; their competence is deduced from their performances; the action, in turn, is always recorded in the course of a trial and by an experimental protocol, elementary or not. (Latour, 2004, p. 237)

The researcher’s job then is to ‘build the artificial experiment—a report, a story, a narrative, an account—where this diversity might be deployed to the full’ (2005, p. 184). Even so, the researcher chooses which data strands will survive, become more real but others decide their continuation—or not.

- *Reflexive objectivity* as awareness of your own biases and stating these as and if required and to the extent that you know them. The reader can then judge their influence on the research. So for example I received a scholarship from CSIRO and was a Western Australian public servant for some of the duration of this research. It may be inferred that I soft pedalled or over-emphasised some findings. For example conflict may not reflect well on the participants, but as it was reported by Robins et al. (2011), and also some participants, it seemed a legitimate inclusion.

Actor-network theory goes a bit further as the result depends on ‘the reflexive processes pursued by the researcher’ (Hernes, 2005, p. 118). The researcher is present as an actor, shaping the interview situation and being shaped by it.

- *Intersubjective consensus* as either numerical, such as agreement on the *numerical* reliability of coding; or *dialogical*, between researchers or between researchers and participants. Interviews allow face-to-face discussion, unlike a survey questionnaire designed from inception to channel the answer. If the interviewer is more powerful, face-to-face negotiation of understanding may counter an imbalance.

There are three issues. Kvale and Brinkman regard an interview as a conversation, but Czarniawska considers that it is just what it is and not an exchange of views, especially with elites. ‘An interview is an interaction that becomes recorded or inscribed and that is what it stands for’ (2004a, p. 49). For instance, conversational turns are regulated by the interview script.

Second, Latour (2005) lists the deficiencies of face-to-face interaction as privileged intersubjectivity which he considers depends largely on inter-objectivity. These interactions are *enabled* by a multitude of actors from other places and other times such as a receptionist’s computerised appointment schedule and the omnipresent conference/café/lunchroom tables. Participants in an interaction are not synoptic: for example the receptionist’s appointments schedule and the participant are not on view at the same point. They cannot be counted, not so much because there are so many of them but some appear when others don’t (see Mol, 2002). Interactions are not homogenous but occur through translations and transformations. They are not isobaric as some participants (mediators) are more pressing than others (intermediaries). Thus the actor-network researcher is not satisfied with answers as ‘meaning without object’ (Latour, 2005, p. 206).

Third, as mentioned isolation creates bias. In Latour's terms, the more alliances which can be brought to bear, such as well-credentialed experts, stakeholder consultation, precedent and legislation, the better. Yin (1984/2003, 1993/2003) uses the same approach with case studies. Latour (2005) has a lot to say about validity (see pp. 121-128, 141-156) in actor-network theory, some of which applies directly here. Objectivity can be obtained 'by the presence of many *objectors*' (p. 125) human and nonhuman. Attending to this required constant self-questioning about what I was actually doing and why.

Dualism is the crux of the matter for Kvale and Brinkman and qualitative research more generally. Gergen and Gergen refer to a 'crisis of validity' (2003, p. 576) if there is 'no way of correctly matching word to world' (p. 577). Corbin and Strauss (2008) are concerned that 'objectivity in qualitative research is a myth' (p. 32) and propose increased sensitivity to the data, rather than the participants, to replace objectivity.

This big question could be downsized by considering the fidelity and extent of the translation. Latour's study of the Boa Vista forest was undertaken to clinch the matching of word to world as will be outlined. The crisis of validity results from 'jumping' or the 'salto mortale' or death leap of James [1907] 1975 (pp. 247-248, cited in Latour, 1999a, p. 74).

Reading between the lines a little, the seven stage approach addresses jumping through the everyday practice of scientific research as continuous craftsmanship, that is, as a translation. Validity is not a state but a process developed throughout the research as a constant concern (see Box 15.1, p. 248). In Table 5, Kvale and Brinkman's advice on the practical application of validity, or verification, is paraphrased and shown in plain text. My actions are shown in italics.

Table 5
Validation at Seven Stages of Interviews

Thematising	<p>'The validity of an investigation rests upon the soundness of the theoretical presuppositions of a study and upon the logic of the derivations from theory to the research questions of the study.'</p> <p><i>The theoretical presuppositions were challenged by events and were changed to deal with them and to enhance the understanding of relations, the central research question. The chain of abstraction has been described.</i></p>
Designing	<p>The design and methods are adequate for the knowledge produced.</p> <p><i>Pre-circulated, semi-structured interviews based on variation of a well validated</i></p>

	<i>suite of questions were designed to produce reflective answers. Sampling was appropriate. Effort was made to ensure that procedures were consistent with actor-network theory.</i>
Interviewing	Honesty of participant answers, interviewing craft, and on the spot questioning to check understanding and meaning of what participants said. <i>It was expected that I would be dealing with sophisticated participants who would stay on message. Second questions clarified what was said, and answers were often recounted for assurance.</i>
Transcribing	Choice of linguistic style in translation from speech to text. <i>All interviews were personally transcribed verbatim. A few conventions were used to indicate pauses and discussants' simultaneous or overlapping speech. 'Collaborative feedback' (Gubrium & Holstein, 2009) was discovered as construction and collaboration between participants and interviewer.</i>
Analysing	Are 'questions put to a text' valid and is 'the logic of the interpretations' sound. <i>Attention paid to objectors (e.g. data which didn't fit) signalled unexpected turns, acknowledged and followed. Wayfinding was a principle (Ingold, 2000) and Latour's obsessive literalism guided interpretations.</i>
Validating	Consideration of the appropriate forms of validation for the study, 'application of the correct procedures of validation' and decision on an 'appropriate community for a dialogue on validity'. <i>As a translation/transformation, the research is simply a longer or shorter chain with more or less alliances, the acid test being whether the report is taken up by another actor, enlarging the network and making the report and research more real.</i>
Reporting	Is the report a 'valid account of the main findings' and has the role of the report's readers in validation been considered <i>The report is a laboratory in which a network is or isn't traced by describing the state of affairs as completely as possible. The findings were to an extent emergent depending on directional choices made by the researcher. For example two actants (regional strategies and NRM) were selected from participant reports as the basis of particular accounts.</i>

Source: Text in plain type is a citation of, or based on Kvale and Brinkman, (2009) 'Box 15.1 Validation of Seven Stages', pp. 248-249.

Reporting. Validation and generalisation of interview findings includes reporting to readers who, hopefully, 'can see *new relations* and answer *new but relevant questions*' (House, 1980, cited in Kvale & Brinkman, p. 253, my emphasis). They learn from the text and their relation to it is changed by their learning, that is, it functions as a quasi-object.

Rather than conceptualising the reporting as another step, Latour regards the text as a laboratory and so previous stages and reporting are intertwined. Either the report produces an actor and traces a network or it doesn't. Reliability results from being attentive to, and then describing the

state of affairs at hand as completely as possible by finding ‘the uniquely adequate account of a given situation’ (2005, p. 144).

For qualitative description, Sandelowski, following Maxwell (1992) defines descriptive validity as ‘an accurate accounting of events that most people (including researchers and participants) observing the same event would agree is accurate, and interpretive validity, [...] an accurate accounting of the meanings participants attributed to those events that those participants would agree is accurate’ (2000, p. 336). While member checking is useful, the Rashomon effect, named after a film, refers to witnesses’ differing accounts of the same event, a problem in law courts and for researchers, as mentioned before when participants disagree with the transcribed text of the interview.

Generalising from interview studies. A primary argument against interview studies is that by comparison with survey studies, they may include too few participants to enable generalisation. Kvale and Brinkman (p. 262) rest their arguments on Stake (2005) who provides three types.

- *naturalistic generalisation* occurs when the knowledge produced in an interview (or interviews) may be transferred to other situations through the personal experience of the reader³² and leads to expectations rather than formal predictions;
- *statistical generalisation* which is unlikely to apply in interview studies as it requires larger numbers than are practicable in semi-structured or unstructured interviews; and
- *analytical generalisation* where the researcher, in addition to rich descriptions, also argues for the generality of the finding. The reader may also generalise from the rich descriptions in the study. Both of these are consistent with Latour (2005).

Stake (1994) and his scientifically dubious naturalistic generalisation from case studies (Platt, 2007) is now recuperated.

Stage 7. Reporting.

Interviewing is a neglected method/methodology for two reasons. In practice interview studies don’t follow formal procedures and ‘much is left to improvisation and the intuition of the interviewer and interpreter’ (Kvale & Brinkman p. 271). There are no established common conventions for reporting qualitative studies either.

The report must be rigorous but like art, ‘carries its own message, it convinces us with its expression and style’ (p. 269) but this is easier said than done and how to do it is not the authors’

³² Or even a participant; one thought the interview had been a good opportunity to order his thoughts.

strong point and I turned to Latour, discussed below. Kvale and Brinkman's advice that the report's style and nature and the story the researcher wants to tell should be considered from inception is good, but implies more navigating than way finding to use Ingold's metaphors (2000). A standard scientific set of headings is used here to order the report but the actuality resembled Serre's metaphor of time as a crumpled handkerchief with adjacencies not necessarily contemporaneous clock-wise (Serres & Latour, 1995). Dissertation plots, like the seven stages, are ordered along a temporal straight line, ironed flat, unlike the experience of doing them where last year's mistake may be as fresh as today's commute (see also Czarniawska, 2004b).

Reporting the Latourian way. In a biophysical laboratory: 'The production of papers is acknowledged by participants as the main objective of their activity' (Latour & Woolgar, 1979 p. 70, see also pp. 72-88)³³. Instead of being 'convinced by the facts', these authors were able to show that laboratory work was primarily 'the organisation of persuasion through literary inscription' (p. 88). Latour advises actor-network researchers to keep good records which will enable them to write excellent accounts.

Latour and Woolgar, like the scientists, had to discriminate and create order out of 'noise, and more noise' (p. 254)³⁴. Both scientists and observers were engaged in craft work with the difference that the first had a laboratory, access to the object under construction, contacts, resources and precedent, while the observers had some notebooks. Both slowly constructed an account of 'the construction of order out of disorder at a cost and without recourse to any pre-existing order' (p. 257). They were quite simply *mapping* with observation of regularities following as inscription/cartography.

'The text in our discipline, is not a story, a nice story. Rather, it's the functional equivalent of a laboratory. It's a place for trials, experiments and simulations' (2005, p. 149). A good text is a mediator and interests the reader in Callon's sense of being lured ('*interessement*') into doing something such as generalising from it. The reader acts as the next link in a chain of translation.

³³ Law (2004) following Latour and Woolgar (1979/1986) suggests that:

It is not possible to separate out (a) the making of particular *realities*, (b) the making of particular *statements* about these realities, and (c) the creation of *instrumental, technical and human configurations and practices*, the inscription devices that produce these realities and statements. Instead *all are produced together*. Scientific realities only come along with inscription devices. Without inscription devices, and the inscriptions and statements that these produce, there are no realities. (p. 31)

³⁴ The similarities between their scientific/literary approach 'make it difficult to maintain the fundamental difference between the methods of the "hard" and "soft" sciences' (p. 256).

Reporting amplifies the aim and method/methodology. I used Latour's account of the Boa Vista forest expedition (1999a) as an example of his sociological method and how to write an account. He observed the scientific research in order to find out 'how the sciences can be at the same time realist and constructivist, immediate and intermediary, reliable and fragile, near and far' (p. 30). His other aim was to bring:

Before your eyes dear reader, a small part of the forest of Boa Vista; I will show you some traits of my scientists' intelligence; and I will strive to make you aware of the labor required for this transport and that reference. (p. 26)

My aim was to bring to you a small part of the NHT2/NAP jungle of governance, the perseverance and humour of those negotiating it, and the work which was done to make this transport and that reference.

The *objectivity* of his research is elicited by a finely detailed, engrossing account and photographs representative of each stage: sleight of lens as there are twenty covering two weeks of observation. These add to his story of how erasure of any of them would make it more likely for the reader to think that his world—to—word translation, like that of the scientists, could fail at any time. They encourage us to see it a frame at a time—'no jumping'. For his research he captures sequentially what his scientific colleagues are doing and its significance but I wondered how much Serres' temporal handkerchief had been ironed.

Unlike his scientific colleagues, he does not have clever stabilising devices such as a pedocomparator which both conveys and provides a classificatory system for soils. The analogue for interviews is survey interviews by which a chain of scoping studies and questionnaire field tests has compressed uncertain opinion into short, sharp and comparable answers. 'The more connected a science, the more accurate it may become' (p. 97)³⁵ The more stabilisers, that is, black boxes or intermediaries, the better.

Description. We don't have a good description of anything, 'of what a computer, a piece of software, a formal system, a theorem, a company, a market is. We know next to nothing of what [...] an *organization*, is' (Latour, 2005, p. 146, emphasis in text). I still find description

³⁵ Latour continues: 'The quality of a science's reference does not come from some *salto mortale* out of discourse and society in order to access things, but depends rather on the extent of its transformations, the safety of its connections, the progressive accumulation of its meditations, the number of interlocutors it engages, its ability to make nonhumans accessible to words, its capacity to interest and to convince others, and its routine institutionalization of these flows' (p. 97). It is not positivism that is the challenge for qualitative research, but short chainism.

puzzling. Latour's uniquely adequate account captures the entire network without need for further explanation. If a factor is relevant then it should be included in the description as part of its reality (see 2005, p. 147), requiring great researcher discernment.

A network is not what is described in the report but 'an expression to check how much energy, movement, and specificity our own reports are able to capture' (2005, p. 131). This is done by ensuring that agencies are never presented as matters of fact but always as 'matters of concern with their mode of fabrication and their stabilizing mechanisms clearly visible' (p. 120). In the analysis, some matters of concern—adaptive management, regional strategies, NRM, targets and policy—are outlined showing how these became, and what maintained them

How diligently are objections observed and relayed? People are more likely to acquiesce and behave like matters of fact than recalcitrant bio-physical objects according to Latour. Consequently a good account is more important in the social than in the natural sciences. Social scientists should consider the effect of reproducing the informant's precise vocabulary rather than using 'an all purpose meta-language' (p. 125) or adopting a biophysical science style. Is the account just a story, or is it 'accurate, faithful, interesting or objective' (p. 127) with 'a strong empirical grasp' (p. 120)? I aimed for 'faithful'. Finally, if the preceding is not hard enough, the researcher is attentive to *how* the 'multiplicity of reality--metaphysics—can be distinguished from its progressive unification—ontology' (p. 120).

The *difference between a good text and a bad one* is the presence of many objectors congregating at the matters of concern. A good text:

'Qualifies its objectivity, that is, the ability of each actor to *make* other actors do unexpected things. [It] elicits networks of actors when it allows the writer to trace a set of relations defined as so many translations. (p. 129 emphasis in text)

There may be masses of social agents in an account but the reader needs to know how they were assembled, and how they got bigger, otherwise, 'it's as if nothing is happening' (p. 131). The most decisive proposition of actor-network theory is that 'scale is the actor's own achievement' (p. 185). In the Swan River SNA, the CTG had more ties, but we don't know how it got bigger. I did not specifically ask Dr Hamilton, and speculated that it traded on its role as a potential operational scapegoat.

A good text *gives proof* that actors have traced a set of relations. Here we are from simply located Perth Region NRM which the researcher amongst others, had wrongly scaled and located. What's more, I (at least) had acted on it, raising the possibility that more network

actors, such as officials, had too. It was said to be too big, judged by the number of employees. If the researcher had been more on the ball she would have asked a few 'how many' questions. I suspect that its total size, including volunteers, was widely underestimated.

In a bad text nothing happens as action is simply carried through them as intermediaries. Recall Whiteley's (2004) account of the difficulties of researching waterfront industrial relations and the objections in the account. By carefully listening to what people actually said and did, she *learned* from them about their concerns, different to hers, and accommodated her methodology to be adequate to these objects.

The aim is not to create findings but to produce continuous connections through forms which are able to be moved around and transported: stable, so that they will remain uncorrupted: and combinable so that they can be shuffled and compared with forms from somewhere else (Latour, 1987). If something at one site is to act on something at others (an actor-network), then these immutable mobiles need to be activated.

Kvale and Brinkman appeal to dominant conventions which don't quite fit, for example in a social construction text they suggest using standard scientific report headings namely, introduction, method, results, and discussion. These are derived from the classic thesis as a formal oration in Greek rhetoric with the method section imported from positivism (Czarniawska, 2004a). It is an *argument* designed to persuade but research doesn't proceed like an argument. 'It is well known that research seldom goes as planned' (p. 124), not only in the Salk laboratories examined by Latour and Woolgar. I was advised to use them because they *are* a standard framework, including for academic papers in psychology and the social sciences. Yet mess intruded and reality did not fit my preconceptions of it.

Once in print the report is experimentation continued by other means in yet another trial on the way to becoming a fact, or not. The difficulty lies in what to take for granted as orthodox but responding to inconsistencies is possibly more rewarding than attempting to make something fit which doesn't.

There is an in principle aim 'to replicate the investigation' (Kvale & Brinkman, 2009, Box 16.2, p. 277). Relations in this research *could* be reproduced in another study which I doubt, not because of sloppy method but because of different circumstances including the researcher as part of the network. 'The laboratory' which produced the statements is different (Law, 2004, pp. 30-31, 2007, Latour & Woolgar, 1979 pp. 182-183) and the researcher gets wiser. In biophysical

science novelty is excluded as much as possible by scientific instruments and procedures enabling repetition of measurements particularly. Latour (1999a) details these devices which enable the researchers to retrace their steps but *his* devices are rudimentary.

Allied is reversibility of actor-networks, important in translations. Thus, a data base is a fully reversible assembly ‘of actor and network [...] or that of substance and attributes’ (Latour, 2011, p. 806). The plunge into the Boa Vista Forest, discussed below, is underwritten by stabilisers such as a protocol book, map scale, and numbered sections in a field site, not to mention the four wheel drive and the plane to France. However, Hernes (2005) doubts whether actor-networks *are* reversible because the order of actor appearance was important in his research. The problem is not simply verbal, as Latour means ‘reversible’ not ‘retrievable’ or ‘reproducible’.

The problem could be logical typing of the some and the any. University appointment routines are reversible ontologically from the local/material to the relatively universal in a gradient of logical types and back again. The local/material applicants are translated into file entries in a way which can be reversed into *any* applicant at *any* time and aren’t expected to fail, hence expectations of correct procedures. This doesn’t change even if *some* instances fail, traced through these self-same files.

Latour instances the abstraction of a particular vote through the French electoral system to the centres of calculation, tally rooms and so on, then to the final count and winners (2005, pp. 224-225). It is reversible insofar as votes may be re-counted right back to *any* individual voter but may not necessarily apply to *some* individual voter, as mistakes happen. Moreover as Latour notes, the system’s reliability was developed over two centuries, suggesting that, to repeat, this ‘progressive unification—(ontology)’ is not easy to achieve and maintain.

Other analytical techniques

In the following, the translation of the Boa Vista forest from its material presence in Brazil to an academic publication is outlined together with its use in my research. Techniques from qualitative research are introduced and, in passing, terminology is clarified.

Translation of the Boa Vista forest. At some point Latour stopped using ‘abstraction’ and started using ‘transformation’ or ‘translation’ which he describes as follows.

In its linguistic and material connotations, it refers to all the displacements through other actors whose mediation is indispensable for any action to occur. In place of a rigid opposition between context and content, chains of translation refer to the work through which actors modify, displace, and translate their various and contradictory interests. (1999a, p. 311).

The terms are near enough to use interchangeably as they are based in Latour's use of Extensive Abstraction. The *how* of abstraction, crucially important in Whitehead (1929/1960) is evinced by translation. In Whitehead's metaphysics, during concrescence actual entities exchange physical and mental feelings in their becoming, captured by translation or transformation as an exchange. 'Feelings' apply in the ordinary language sense.

It is important not to confuse translation with instances of it. Thus, Lindberg and Czarniawska (2006) relate the micro-processes of translation to what they accomplish, namely the chain of care, and the model of cooperation. Neither of the latter are lost sight of in the focus on emotional, mimetic and cognitive forms of translation.

Translation /transformation will be used to emphasise this recursion of subject and superject now described. Figure 2 overleaf reproduces Latour's Figure 2.22 (p. 71) from the account of the Boa Vista forest and cleverly shows this relation of successive stages to the entire transformation/translation.

There are multiple examples in Latour's work of translation/transformation but the description of the translation /transformation of the plants and soil of the Brazilian Boa Vista jungle into an internationally published research paper (1999a, pp. 24-79) is paradigmatic. His objective is clear: 'My friends want to discover whether the forest advances or recedes, and I want to know how the sciences can be at the same time realist and constructivist, immediate and intermediary, reliable and fragile, near and far' (p. 30).

The transformation/translation of the forest biota and soil into an international journal paper required multiple sequential translations, each of which abstracted a little of the preceding *matter* and transformed it into *form* for the next step using instruments as stabilisers. The pedocomparator is a suitcase containing rows of little boxes into which soil samples are arranged by soil horizon and map location. These then travel to Paris in this ordered array for analysis. One of these, the pedocomparator, is an ontological hybrid being at once matter, the dirt, and form, the arrangement of samples. Each clod extracted is fitted into its place and at that moment is translated from dirt to sign, or form, which can travel. The array of dirt-filled boxes translates/transforms *the entire pedology*, now on its way to France. It is a *referent* as are the plant specimens where one leaf pressed and dried, represents all. Further translations produce a diagram of soil types (see 1999a, Figure 2.15, p. 57). 'It is not realistic; it does not take the place of anything. It does more than resemble. *It takes the place of the original situation*' (p.

67, emphasis in text). Translation/transformation as the entire chain of events is notated in Figure 2 (see over) from the *more local, particular, material, multiple and continuous*, to the *more compatible, textual, standardised, calculated, circulatory and relatively universal*, reciprocally decreasing or increasing in terms of the other. I have abbreviated these descriptors to 'locality/materiality' for the first and 'relative universality' for the second.

In the jungle he hoped to find science in the raw but he realises that science was already there, a botanist for example. There is no primeval confrontation with the world, just the sequence of translation from matter to form to matter to form and so on (see 1999a, Figure 2.21, p. 70) through transmission of minor differences. This occurs within an increasing/decreasing 'sphere of relevance' (Bateson, 1979/1988, p. 215). Each translation produces a change of logical type or form, just like Kvale and Brinkman's model of interview stages.

In this essay Latour first nails a philosophical point, namely the separation of word and world is overcome incrementally. Second, he applies Extensive Abstraction to structure overlapping events, in for example, the series of measurements made by various objects. The overlap between sets or logical types, (see Figure 2.21, p. 70) is undertaken by the observers whether human or nonhuman. Note too, the many juxtapositions, for example by the botanist comparing leaf specimens (pp. 36-38), which enable new insights from double description (Bateson, 1972, 1979/88) as each new part of/whole relationship in the transition to a more abstract logical type.

The significance for my research is that after a time, I realised that participants were telling me something similar about the translation/transformation of biophysical and other data as part of NHT2/NAP policy implementation. In the question on adaptive management they were essentially doing the same thing, but the realisation came rather late.

Latour emphasises that these translations/transformations are fragile with ever-threatening disorder kept at bay with difficulty. 'Circulating reference' refers to the 'clever alignment' (Latour, 1999a, p. 307) of inscriptions of each and every process, including mapping and aerial photography, by which soil samples and plant specimens for example, are transmitted as inscriptions to France and then elsewhere in the published paper. It depends on continuous chains of actions, each fragile link of which occurs once and once only, if at all. The chain's fragile durability depends on the strength of its alliances with others, which it must *keep maintaining* with the aid of stabilisers which enable it to be reversible, that is, traceable.

The jump from world to words is not done at once, from dirt to discourse, but in the translation

of one reality into another one which can be passed on more easily down the line a little bit at a time by making ‘matter cross the gap that separated it from form’ (p. 57). There is never a resemblance between two stages but a transformation which is an abstraction of a little bit of each reality, transferred to the next. Entrenched as I am in what Law calls ‘Euro-American common sense realism’ (2007b, p. 599), ‘out there’, beyond and largely independent of us, I found this reality hopping was, and still is somewhat, hard to get.

In Latour’s analogy, a length of flex between the lamp and the plug in the wall translates the current between them (1999a). ‘Truth is nothing but a chain of translations without resemblance from one actor to the next’ (Harman, 2009, p. 76) and not a jump from lamp to plug.

The significance of Figure 2.22, p. 71. Figure 2 below reproduces this diagram. It shows two overlapping decision trees on their sides with the convergent apex of one lying on the ‘big end’ of the other, that is, each is present in the other. Whitehead himself refers to ‘the big end’ as the start of an Extensive Abstraction (1929/1960, p. 455), and of theoretical rather than practical significance. But the big end is too big and the relations of interest are those which ‘continue throughout the remainder of the infinite series’ (p. 455). Consequently in Extensive Abstraction, the ‘tip’ (Latour, 1999a, p. 70) or vertex of the one end will also always be present in the big end of the other, not quite clear in the diagram. A decreasing locality/materiality is still present within the relative universality and vice versa, unthinkable in a material world with interstitial space between objects.

Resemblances between Latour and Bateson, most probably via Whitehead, were a subsidiary but important interest in my research, as I used one to understand the other and both to approach Whitehead. Bateson too describes a ‘zigzag ladder of dialectic between form and process’ (1979/1988, p. 210, emphasis in text) in communication and Figure 10 ‘Levels of analysis of Iatmul culture’ (p. 210, my emphasis) depicts a translation from description of specific actions to a more general typology of processes. Importantly, Bateson regards this zigzag ladder as paradigmatic for perception, learning, social status and aspects of evolution amongst other things, including continuity and discontinuity, and regards it as ‘a relationship that will resolve a very large number of ancient puzzles and controversies in the fields of ethics, education and evolutionary theory’ (p. 211).

Figure 2

Translation of the Boa Vista Forest

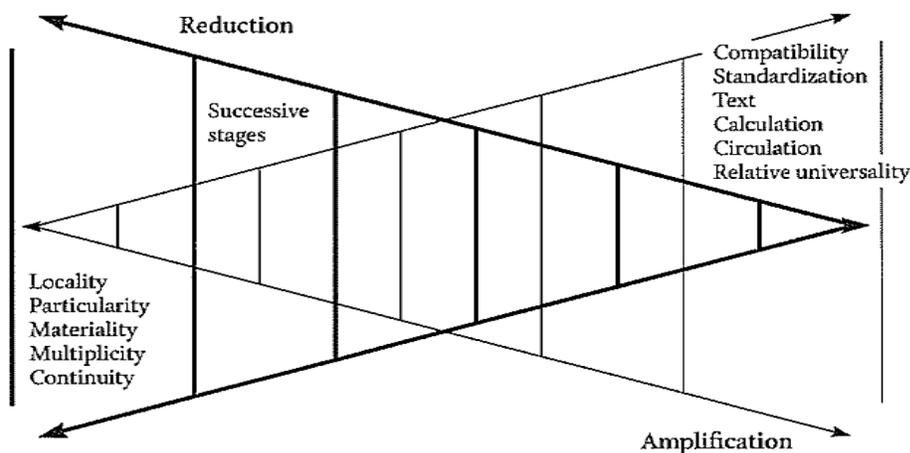


Figure 2.22 The transformation at each step of the reference (see Figure 2.21) may be pictured as a trade-off between what is gained (amplification) and what is lost (reduction) at each information-producing step.

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Latour's masterful description is slightly different and less sketchy than Bateson's. He has used logical typing, able to be inferred from his Figures 2.21, 2.22 and 2.24 but unmentioned, and neither is Whitehead's Extensive Abstraction on which it relies.

Application in this research. During transcription, I went over and over interviews. A participant had said: 'We can amplify what they can do', referring to the potential impact of both facilitated actions and NHT2/NAP funding on small on-ground groups. After about two days, 'amplification' rang a bell. Latour's Figure 2.22 shown in my Figure 2 is captioned, 'The transformation at each step of the reference [which] may be pictured as a trade-off between what is gained (amplification) and what is lost (reduction) at each information-producing step'. 'Amplification' is also shown as the directionality of the relatively universal in Figure 2. One day this made no impression, the next it did through intuition, or 'a freeze frame'³⁶. The context, used in Bateson's sense of pattern, had changed and changed everything (Latour, 2011).

³⁶ Whitehead uses the wonderful metaphor of two trains running alongside each other where for a short time, train and passengers seem stationary to those in them (1920/1964). Stengers (2008) writes about Whitehead's intuition: 'There is a difference between 'having understood' and these occasions when you

The participant had given a nuanced description of what I *now* realised was one phase of the translation/transformation of plants and river littoral fencing, amongst other things, from one side of Australia or part of the state to the other, to the centres of calculation and accountability and, in the reverse direction, policy. This journey was not by ark cargo but through the agency of computer data bases, local people’s long term residence in an area, the influence of personalities and rank on the interviewee’s ability to amplify translations—or not—and so on. It was not a collection of related but disconnected facts but a chain. The participant spoke about breaks in the chain, for example ‘brilliant work left to rot’ because scientists worked independently and did not write up their work, or use what he termed the ‘retentive structure of bureaucracy’.

I used this interview as a pilot and charted what was said onto locality/materiality and relative universality at the academic paper or policy end. Table 6 shows two examples, with the first showing amplification from the more material to ‘active or adaptive management’. The second alludes to the reverse, the loss of relative universality, textuality, and calculation through unconnected action.

Table 6

Translation/Transformation of Interview Data

Materiality	Can look at plants slowly dying	Or take the extra money and use it to do weeding and build fences, active or adaptive management. ‘We can amplify what they do’.	Relative universality
Particularity	They set up their own data bases, know what to do and just go ahead and do it.	Efficiencies get lost. The data bases get lost.	Calculation

feel the precariousness of your grasp, its readiness to disintegrate, or the beginning of new intuition, or something that was not there before’ (p. 106). A fragile new intuition may ‘elicit a novel communion of intuition’ (p. 107)—something like the two trains—or fade away. She describes the ‘settled ground which permits the communion of intuition that we call meaning’ (p. 108). Latour avoids ‘intuition’ but Bateson’s levels of learning correspond to these phases of it, with habit (*Zero Learning*) this settled ground. To learn means to risk and be attentive. It took about a year of seeking connections from something new, namely process metaphysics, to understanding, with an interim period of knowing it but not quite getting it.

I doubt whether I would have realised the significance of ‘amplification’ without what I felt was an obligation to get the transcript right combined with a more fluent and coherent understanding of Latour’s paper. These actants, transcription and paper, enrolled me.

Like Latour and his graph in the Salk Laboratories, this little pilot study made me feel more confident. I was modelling what he had to do, namely work it out for himself, a key moment in quite simply *mapping* and researcher reflexivity.

As Latour says often enough, researchers learn from actors by concentrating on what they say, 'the work they have to do to *establish* connections' (Latour, 2005, p. 220, emphasis in text). Order is an achievement for both the actors and the researcher.

In this sense, learning, or apprehending, is following them. Ruming (2009) 'followed the actors' (Law, 2000, cited on p. 464), as an actor-network technique which other techniques my neglect or ignore. From such a:

Relatively straightforward methodological premise, this research moves beyond the identification and tracking of actors, to position actor-network research as the product of situated relations, where the ability to identify, access and follow network relations is dependent on both the agency of the researcher and the context in which investigation is initiated. (p. 465)

In my research I followed regional strategy, NRM and NHT2/NAP policy. Others, initially overlooked, included a pencil, paper, table and a diagram.

Actors are events. Latour uses 'event' in Whitehead's sense of concrescence rather than as something more dramatic. Hence '*an experiment is an event*' (Latour, 1999a, p. 126, emphasis in text) because the ingredients are brought together and acquire their characteristics and meaning by their participation. This thesis is an experiment/event as I have written it, people have participated in it, you are reading it, information technology has transmitted it, and so on. Now they are all going on their way again slightly changed, having gained in our 'definitions through this event, through the very trials of the experiment' (p. 126).

In the interviews one significant event mentioned by most participants was the regional strategies³⁷. Regional strategies are more abstract than squirrels, as is another actor, NRM. Like the IUD, this was something that everybody knew about but which was performed in

³⁷ Counting is an 'analytic device' like coding and 'tabulating and diagramming [which serve] as a way to think about and interact with data' (Sandelowski, Voils & Knafl, 2009, p. 219). It is a 'simplifying device' (Mol & Law, 2002, p. 4) to order data. Quantitising is defensible when used 'creatively, critically, and reflexively' (Sandelowski et al., 2009, p. 219). By so doing it 'can show the complexity of qualitative data and, thereby, the "multivariate nature" of the experiential worlds researchers seek to understand (Tufte, 2006, p. 129)' (cited on p. 219).

different ways. Both these ‘followings’ rely on a technique from qualitative research, namely juxtaposition (Shank, 2006a) in the event of this text, for their appearance. These additional techniques are now outlined.

Techniques from qualitative research. Shank (2006a,b) provides innovative techniques for qualitative research. Those in the later paper were developed as ontologically more acceptable alternatives to mixed methods used to overcome the dualism of qualitative and quantitative research, which he regards as being at cross purposes. Burke, Johnson, Onwuegbuzie and Turner (2007) offer mixed methods themselves, as what they term a ‘third paradigm’ with qualitative and quantitative research the other two, which doesn’t overcome dualism. These could be regarded as interference between practices which ‘depend on separation while also insisting that they are joined’ (Law, 2004, p. 82). Latour would regard the need to use them as yet as another example of the persistence of the failed modernist attempt to separate subjects from objects and nature from society. Regardless, comparative descriptive techniques which make links are useful in qualitative research.

- *Systematic comparison* yields the bonus of new insights (see Latour, 1999, p. 38). Shank (2006b) proposes juxtaposing which contrasts two areas of understanding arbitrarily to see how one may inform the other. A familiar metaphor may be used to push understanding into new areas. As double description Bateson uses an analogy of the impression of each eye combining to make one new binocular vision (1979/1988). Comparison of instances results in a different logical type, and sequences of comparison are the basis of translation/transformation or Bateson’s ‘zigzag’ of form and process.
- Through *prospecting* Shank finds data that are worthwhile without any other methodological justification. These are ‘nuggets’ which ‘open our eyes to things in a whole new way’ (2006b, p. 351). One chance prospecting discovery may enable development of a new understanding. They may not be obvious at first, and may be discarded by coding processes or not even be part of data collection proper. Examples in my research included:
 - The event of diagramming of the sequence of accounts (Analysis I, pp. 148-187);
 - the moment of concrescence (Analysis III, pp. 207-214); and
 - ‘amplification’ which resulted in Analysis IV, when combined with ‘appropriating’, the next technique.

- *Appropriating* other systems of data transformation, for example choreography, may be used to chart an empirical inquiry. Latour's Boa Vista forest translation was appropriated to model a translation of policy in Analysis IV.
- *Facets* are distinguished from themes which are used to determine causes whereas facets provide 'new angles for seeing' (p. 157), or better, understanding and ordering. Each facet provides a separate way to examine and understand a diamond while retaining wholeness. There is a part/whole relation between facet and diamond or subject/superject³⁸. Diamond facets are cut to be symmetrical but real-life facets may show unique characteristics when re-aligned. Public servants were quasi-objects showing formal and informal selves which could not be seen simultaneously.

The facet metaphor invokes Chia and Holt's process of 'coming-into-sight and passing-out-of-sight' (2009, p. 164). The other facets turn away. They are oblique and indirect and can only be seen 'from a side glance' (Chia, 2000, p. 516). Occasional instances of successful side glances, more like intuition, have been noted, for example, a participant referred to 'the inertia of change' (see p. 250). 'When thoughts have been absorbed words stop' (Chuang Tzu, in Chang, 1963: 43, cited in Chia, 2000, p. 516).

Facets enable consideration of different standpoints, useful in an actor-network approach, taking into account limitation of interpretation and distinguishing between performance and perspective. The ability to adopt different standpoints is one of Latour's principles.

All of the sciences have been inventing ways to *move* from one standpoint to the next, from one frame of reference to the next, for God's sake: that's called relativity [...] If I want to be a scientist and reach objectivity, I have to be able to travel from one frame of reference to the next, from one standpoint to the next. Without those displacements, I would be limited to my own narrow point of view for good. (2005, p. 146)

Other techniques used. Basic computer facilities were used to find sections of text, for manifest searches of words and phrases and for counting instances. Early discussion about the benefits and drawbacks of computer techniques such as Nvivo suggested that they came between the

³⁸ To repeat: 'An actual entity is at once the subject experiencing and the superject of its experiences. It is subject-superject and neither half of this description can for a moment be lost sight of.' (Whitehead, 1929/1960, p. 43).

researcher and the data. Suffice to say I was immersed in it from transcription's reading and rereading. The analysis would likely have been a different if Nvivo had been used.

Summary remarks

To enable evaluation of the 'quality, validity and transferability of the findings' (p. 276) Kvale and Brinkman require precise descriptions of the 'steps, procedures, and decisions of the specific study' (p. 276). Details of this transformation /translation have been given. Accepted procedures for actor-network theory and application of Whitehead's work are neither plentiful nor straightforward, and interviewing and procedures from qualitative research have been adapted.

The standpoint for this research has been demonstrated using Ingold's allegory of three phases in existence, quite simply *mapping*, cartography and navigating, applicable to actor-network theory, endogenous connectivity (Hernes & Weik, 2007), and bricolage.

Actor network theory is a negative method which I understood to be something like Serres' quasi-object: the game *discloses* 'the ball'. In what follows some of the performances—facets—of the NHT2/NAP game are assembled. The ball was obscure as a potential combination of federation, decision-making and government amongst other things. What *was* clear, even from the two actants, 'regional strategies' and 'NRM', was that policy was not made by policy makers or decision makers alone but was negotiated at each information-producing step of the translation/transformation.

There were expectations of Latour's 'clever alignments' in NHT2/NAP in for example the translation/transformation of biophysical data into financial accounts which were aggregated into quarterly reports from each regional body to the Commonwealth and then further with other regional bodies. These ultimately enabled a relatively universal Commonwealth ministerial announcement about whether the NAP/NHT2 was value for money or not. A small but critical part of the translation from money to results is related in Analysis I (see pp. 172-173). The regional strategies were another referent related in Analysis II.

However as Latour emphasises, translations are fragile. The work done by officials and others to stabilise them, performing bureaucracy into being, will be described. Despite this, performance audits of NHT2/NAP expected programs and plans to result unfailingly in expected outcomes. Program shortfalls were regarded as impairments to achievement of an investment

model, rather than as almost inevitable. It is tempting to consider this as one more instance of:

[...] The impossible attempt to create a radical split between objective natural fact and arbitrary human perspective. Moreover, the modernist tries to purify objects by assigning them solely to one side or the other of this artificial divide, denying the existence of anything lying in the middle. (Harman 2009, p.31)

In the next chapter analysis commences with the question on adaptive management. I started with it because I had envisaged a discrete answer to a separate question about how participants understood and performed it. Like Latour's graph in the Salk laboratory, it gave me a cartographic start and made me feel better. As things transpired, it became a microcosm of researcher learning right up to the end.

Chapter 6: Analysis I

OVERVIEW OF THE ANALYSIS

The analysis is divided into four sections each of which is an experiment, used in the sense of quite simply *mapping*, consistent with exploratory and process research rather than hypothesis testing under controlled conditions. The analysis is structured as follows:

Chapter 6: An overview of the complete analysis

 Analysis I: Adaptive management

Chapter 7: Analysis II: Regional strategy and NRM

 Analysis III: ‘Life is robbery’: Analysis of an adventure

Chapter 8: Analysis IV: Transformation/translation of policy

The data was assembled in this way to do a number of things. Different objects were followed to show a different example of object relations, as a facet of a diamond (Shank, 2006a). For example, the question on adaptive management was asked simply to find out if and what participants were doing about it, prompted, as discussed next, by its absence in national evaluations of NHT2/NAP. Participants used ‘adaptive management’ to describe different performances, some of which meshed with the literature and some didn't. I set it aside but later competence in object relations, and a refreshed literature review enabled the little pilot study of it as a fire object (Law & Singleton, 2005). The reader finds out about these and their significance; other relations in the research question; and NHT2/NAP through this arrangement of data, which advances the overall story.

I do not want to dwell on kinds of object relations as I did not intend to use or develop taxonomy of them. The process was more inductive, more *mapping*, testing if the notion worked, and if so, what this thinking revealed. An overview of the facets follows.

Analysis I: Adaptive management

The Commonwealth Government commissioned audits, reviews and evaluations to examine the results from the \$A 4.4 billion NHT/NAP expenditure from 1996-97 to 2007-08 of which adaptive management was a principle. Numerous examples could be expected of how it had/hadn't been applied but a text search of 13 major audits and evaluations for ‘adaptive

management', showed few mentions³⁹. An evaluation of bilateral agreements between the Commonwealth and state/territory referred to it seven times and noted lack of action on the supporting principles of which adaptive management was one (ITS Global, 2006a). Eleven reviews hardly mentioned it and the three which did reported that it wasn't occurring. Interestingly one of the annual reports from the Chairs of Regional Organisations to the NRM Ministerial Council, said that 'adaptive management has been applied at all levels' (Regional Implementation Working Group, 2005, p. 7).

Adaptive management may be assumed to be one thing, a 'well established concept' (Eberhard et al., 2009, p. 1189) but the environmental literature, briefly reviewed below, reveals its multiplicity. The phrase has been defined and applied in ways, 'from highly detailed and rigorous to nearly vacuous' (Doremus 2001, p. 76) with a 'talismanic' use providing 'a plausible-sounding avoidance mechanism' for policy and science (p. 76). One participant in my research wryly described resilience as its successor and suggested that it too would be short lived and 'a ridiculous thing' like sustainability.

I concluded that adaptive management was tacitly ignored in the evaluations for an unknown reason. Possibilities included that adaptive management was so common as to be unworthy of note; nothing was being done; it may have been performed under another name; or that it was a

³⁹ The ANAO performance reports are important because they are considered to be impartial examinations of the circumstances and results of government expenditure. The performance report on 'The Administration of the National Action Plan for Salinity and Water Quality' (2004-05) mentioned it four times; in examination of 'The Regional Delivery Model for the Natural Heritage Trust and the National Action Plan for Salinity and Water Quality (2007-08) it was unmentioned.

In 10 evaluations of NHT2 by established national or international consultants, adaptive management was mentioned once or not at all, with reference to governance (WalterTurnbull, 2005); coastal, estuarine and marine regional investment outcomes (SMEC 2006); the national facilitator network (Fenton, M., 2007); Centre for International Economics (2005); biodiversity conservation (Griffin NRM Pty Ltd. & URS Australia Ltd., 2006); sustainable agriculture (R. M. Consulting Group, 2006); and the National Investment Stream (ITS Global, 2006b).

An evaluation of the NAP (Sinclair, Knight, Merz, 2006) referred to it 29 times chiefly to report the lack of it, particularly in the monitoring and evaluation frameworks and data. The evaluation of invasive weeds (Bellamy, Metcalfe, Weston, & Dawson, 2005) mentioned it 18 times identifying lack of capacity for an adaptive management approach to achieve weed outcomes. Some monitoring and evaluation frameworks in regional NRM plans proposed an adaptive management approach but the mechanisms for monitoring and reporting were lacking with one notable exception.

A prominent Ministerial Reference Group Report (Keogh, Chant & Fraser, 2006) comprised of three leaders from primary industry, community and environment used the phrase once in reporting a case study of successful use by the former Murray Darling Basin Commission.

‘messy object’ (Law & Singleton 2005, p. 348). In the 13 evaluations, pretence was unlikely although one interviewee hinted that adaptive management may have been just a rhetorical flourish in the bilateral agreements.

In the research design it was thought that the general scenario questions may not provide information on adaptive management as a research concern. A specific question was then included asking each participant directly about how they performed and/or understood adaptive management, which were surprisingly diverse. One participant talked about a difficult translation/transformation with counterparts which I didn’t understand at first. I drew a diagram together with him, jointly reconstructing a process with different kinds of connections, including emotional, cognitive, and mimetic (Lindberg & Czarniawska, 2006).

Lindberg and Czarniawska used boundary objects and processes to describe diagrams and charts participating in the action with emphasis on them as relatively static and nonhuman, while their kinds of connections were human. A more flexible description of boundary objects as the ‘trading zone between two different cultural zones’ (Law & Singleton, 2005, p. 348) emphasises an exchange between potentially different realities. The shared diagramming *made* relations and relations made the diagramming in an exchange between humans and nonhumans such as a pencil. The difference was noticeable as rather than the more distant interviewer, I was a participant in this process, the one with the pencil and pad.

Analysis II: Regional strategy and NRM

A majority of participants said that the regional strategies (strategic plans) were either a significant *event* or significant influence in NHT2/NAP and thought that the new Caring for our Country program potentially made them redundant. Events occupy a unique position in actor-network theory.

In my vocabulary, an actor that makes no difference is not an actor at all. [...] It’s a unique event, totally irreducible to any other (Latour, 2005, p. 153).

Changed times are ideal for testing for these events—mediators—as they make objects communicative. Caring for our Country took away something from the regional strategies revealing that they were not substitutable, and how they had made a difference.

Events may be thought to be more dramatic, such as a car crash. Pre-thesis I had pigeonholed a regional strategy as a passive document but now trace it as an actor, an objecting object, an event. As quasi-objects, strategies were sometimes a thing—‘the size of a telephone book’

(interview); sometimes a narrative—the story of high hopes, ‘all that work wasted’ (interview); something seen but not noticed by the researcher; sometimes a social bond—the whiteboard sessions for their development (interview); but ‘never a mere being’ (Latour, 1993, p. 89). They became spokespersons for the regional bodies which depended on them for allocation of funds. Their analysis demonstrates the ‘non-social entities which make up the social world’ (Latour, 2005, p. 232).

‘NRM’ was considered as an actor as a trial, because, again, I thought that if anything would be one thing it would be NRM. For example, NRM has been used in a book title (Lane, Robinson & Taylor, 2009) and a literature review (H.C. Coombs Policy Forum, 2011), without any need to define or discuss it. However, other performances included a more industrial, rather than agricultural NRM. Unlike the IUD or the regional strategies, there is no relatively more enduring thing, but just some-thing that could be instantiated using more enduring objects and performances for its stability.

Analysis III: ‘Life is robbery’: Analysis of an adventure

A moment of concrescence

‘Concrescence’ is a term of Whitehead’s referring to the ‘the process of becoming a subject’ (Halewood, 2011, p. 28). There are no subjects without this coming together of different experiences, human and nonhuman, as continuous process from event to event. In a small section of one interview, a participant described at length his immediate frustration with grant applications for Caring for our Country and what I interpreted as a phased second guessing process to determine grant criteria.

Towards the end of the thesis (October, 9, 2012) I realised that interviews had twice noticeably taken on a life of their own. The first was the diagramming with a participant just mentioned, with a pencil/paper/person as a co(a)gent (Michael, 2004). These distribute agency (makes it multiple) and implode it (makes it single) as hybrids acting in a ‘synthetic proposition’ (Halewood & Michael, 2008, p. 52). In Analysis III, an interview detour by two people, a ringing phone, a sprawl of documents and a brown blob on a map is touched on as one of these in an analytical technique derived from Whitehead (1929/1978).

Analysis IV: Translation/transformation of policy

I used Latour’s translation/transformation of the Boa Vista forest as a model to examine how a government program was conveyed from the COAG to Perth Region NRM. While this might seem ambitious, there were relatively few senior people involved in the intergovernmental policy hierarchy of the state and Commonwealth governments and in Perth Region NRM. It is

difficult to capture all connections and interactions in an actor-network. Ruming (2009) following Murdoch, suggests using 'first order approximations' (1997, p. 747, cited on p. 458), that is, an early phase in a series of educated guesses, in itself an abstraction. My aim was to understand, even partially, if policy was translated or if it was simply located at the top of a government hierarchy and was then implemented or more, reproduced by all the rest.

I mapped what was said in interviews using alignment of 'snippets of talk' Dugdale (1999, p. 124) in tables and charts. Policy is single and multiple like the IUD. Different *performances* of policy were not necessarily negotiated painlessly as with the IUD, but reconciled as part of the policy translation/transformation.

So there are differences in policy at the state level for example both defacto and official that you had to bridge.

There were probably differences in operation. They might appear to have the same policy but the operation and the implementation could often be quite different.

It causes problems. [...] Sometimes trying to reconcile those things could be very, very complex' (interview).

Some of the rancour in agency relations (Robins et al., (2011) may have arisen from these kinds of reconciliations. As noted before, ambiguous meanings may assist co-operation (Weick, 1979) but it is also possible that they didn't in the instances of difficult and crucial connectivity. The organisations in the SNA seemed to share the same meaning and vocabulary but perhaps were doing something different, as with ALD. Reconciliation, as described by Law (2004) and Law and Singleton (2005) would indeed be 'very, very, complex', and not merely passing on decisions made elsewhere, but mediating them.

Policy may be thought of as made by policy makers or decision makers at the policy level. The Premier of Western Australia, Colin Barnett said to his Ministers: 'Your job is to make a decision. Hopefully you'll get more right than you'll get wrong, and someone in our democratic system has to bear that responsibility. That's the Minister's job: the CEO's job is to run the department' (2009b, unpaginated). Policy is here separated as a decision from operations done elsewhere. This is only partly true as the decision or policy will always contain some multiplicity like the IUD.

Put another way, policy emerges through translation/transformation between the relatively more universal and locality/materiality as a continuous series of exchanges. A participant described adaptive management as the successful transfer of intellectual leadership from the more centralised central government to the more local regions who became better versed in targets and

monitoring than the officials. That is, policy decisions were made along the translation/transformation.

Reference was also made to the seven years or more, of informed and quite intellectually strong processes developed for investment decision making in NRM right around the country which were replaced by ‘pretty arbitrary centralised decision making’. ‘There isn’t enough wisdom sitting in [Canberra central departments] to be informed about priorities in the Swan Catchment or wherever’ (interview). The network was smaller. ‘The more attachments it has the more it exists’ (Latour, 2005, p. 217). The big is not that big and relies on the small.

The analysis proper now begins with adaptive management.

ANALYSIS I: ADAPTIVE MANAGEMENT

Brief survey of literature

The literature on adaptive management is huge and I have relied primarily on some review articles which state a recurrent theme, namely that it is ‘full of promise [but] short on delivery’ (Stankey, Clark & Bormann, 2005, p. 7; Allan & Curtis, 2005; Allan & Stankey, 2009; Allen & Gunderson, 2011; Allen, Fontaine, Pope & Garmenstani, 2011). My aim is to outline the notion’s variety rather than provide an exhaustive review.

In what follows definitional issues are outlined first. The situation of adaptive management is examined next as geographic location, and then the theoretical attention paid to adaptive management collaborations. The reasons for lack of performance are outlined, including a comprehensive legal review from the United States which summarises court findings about agency application over 15 years, in yet another Latourian trial of this actant.

Definitional issues. Adaptive management is formally defined as ‘natural resource management conducted in a manner that purposely and explicitly increases knowledge and reduces uncertainty (Holling 1978: Walters 1986)’ (Rist, Campbell & Frost, 2012, p. 5). Holling (1978, 1986) was the first to use adaptive management in *environmental management*, to take into account ‘surprise and complexity’ which requires a constant process of learning (Tippett, Searle, Pahl-Wostl & Rees 2005, p. 288).

Following Walters and Holling (1990), Allan and Curtis (2005) refer to:

- *evolutionary* or trial and error—undirected learning;
- more directed *passive adaptive management*, that is, implementing historic best

practice, and evaluation of implementation which requires ‘an active culture of reflection’ (p.415), communication amongst participants and provision for the incorporation of learning into planning and management; and

- *active adaptive management* which focusses on learning through iterative testing of hypotheses about best practice, policy and/or strategy, at ecosystem scale, in addition to the elements in passive adaptive management.

In this tripartite scheme there are multiple nuances depending on emphasis. Stankey et al. (2005) describe learning by doing, a normal adaptive human behaviour, and equate it with trial and error. Williams identifies passive management as the objectives and outcome rather than learning *per se*’ (2011, (p. 34) by contrast with Allan and Curtis (2005).

Active adaptive management is ‘purposeful and deliberate, characterized by careful documentation processes [...] designed to promote learning that translates into action’ (Allan & Stankey, 2009, p. 341, Allen et al., 2011). Learning may be through individual understanding, or collaborative learning applied to a natural resource problem, in a structured process with attention paid to the decision making process itself, usually understood to include changes in stakeholder values. There is general acceptance that social networks as communities of shared knowledge and /or interests, stakeholders and policy groups, are critical to success and failure (Allen & Gunderson, 2011, Gunderson 1999).

However, a multi-author collaboration on adaptive management of the Great Barrier Reef demonstrated the effectiveness of large scale reserves in preservation of biodiversity and ecosystem resilience, but had little to say about consultation, emphasising compliance and enforcement (McCook et al. 2010).

Adaptive management is misunderstood, undeveloped in research, relatively little practised, and how to do it is ambiguous (Rist et al., 2012, Allen et al., 2011, Williams, 2011). Inconsistent and even contradictory definitions and approaches are confusing and have affected organisational ability to develop consistent, comprehensive and reliable programs and applications (Rist et al., 2012; Allen et al., 2011).

The law provides another relatively more universal lens concerned with criteria more than biophysical actuality. In the United States, where adaptive management originated, it is entrenched in natural resource agencies from on-ground to headquarters (Ruhl & Fischman, 2010) but as ‘a/m lite’ (p. 426). Characteristically, a/m lite almost always fails to develop

testable hypotheses as the basis of management actions; omits learning procedures, such as modeling, experimentation or historical research; and lacks follow through. The National Academy of Sciences synthesised active adaptive experimental management into eight how-to-do-it-steps but rather than using these to translate adaptive management into policy, agencies summarised them into ‘learning while—or by—doing’ (pp. 430-431). Ruhl and Fischman consider that some a/m lite could be considered as a step up to passive adaptive management but all are a weak version of Holling’s theory.

While routinely deliberated in the courts, adaptive management is little mentioned in the law (Ruhl, 2008). Nonetheless, the courts genuinely endorse adaptive management and provide agencies considerable room to adjust traditional planning approaches to allow for it so long as legal management criteria are met. Thus a/m lite is a judicial hybrid which neither meets environmental textbook definitions nor is fully present in law, an absent presence so to speak.

In Australia, a Queensland court considered that a monitoring program evidenced proper adaptive management even though it was not explicitly mentioned (Dwyer, 2011). Adaptive management appears in, for example, coal mining where a New South Wales court ruled that proponents had not met requirements for an adaptive management regime to mitigate harm (Covington & Camenzuli, 2013). In public administration, a recent review of national environmental water management referred to adaptive management but it was undefined (National Water Commission, 2012). Actions to achieve it, such as up front targeting of ecosystem outcomes; definition of evaluation questions and performance indicators in planning; and monitoring ecosystem outcomes; were regarded as ‘still immature in most if not all jurisdictions’ (p. x).

Drawing on the IUD example, adaptive management is both single and multiple, summed up by Allen et al. (2011). ‘Obviously adaptive management is a term that carries with it unknown potential and irrevocable misunderstanding, a paradox that simultaneously explains the inherent interest and discomfort in its implementation’ (p. 1340). Its flexibility has resulted in ‘multiple interpretations’ (p. 1342), or rather, multiple performances. Like the IUD, the potential of adaptive management allows its continued performance as a Whiteheadian society, through negotiation and compromise. More ALD-like, it is also generative, with at least some discontinuous performances, including the possibility of a different name, or performances under another name, or more usually, performances unworthy of the name. The urge to achieve

singularity from this multiplicity is notable, the more so as adaptive management itself is a never finalised process, unnerving to the law, discussed below.

Where is adaptive management situated? Adaptive management is primarily a North American and Australian preoccupation. In a study of its scope, in 187 papers for 2009, 34 percent focussed on North America, 18 percent on Australia, eight percent on Europe, and 15 percent on Asia, South America and Africa combined, from a total of 67 percent of papers with a country focus (Rist et al., 2012). A pilot study of papers from 2008 showed similar patterns. This distribution of interest is not examined further but the Australian/United States preponderance is worth a second look. A long collaboration by Allan and Curtis (Australia) and Stankey (United States) *may* be influential.

Supporting the contention that it is little or poorly practised Rist et al. (2012) report that only eight percent of papers (15) provided examples of adaptive management implementation (see Table 1, pp. 11-12) of which 13 were field studies. Ten indicated the availability of field data at an actual location. Most of the studies did not include all eight elements which they regarded as essential to achieving adaptive management.

Imperfect realisation. Failings in performance of adaptive management are due to unclear definition and approach; lack of a successful track record as model; institutional arrangements such as policy and funding favouring reactive approaches to NRM; and failure to recognise both possibly shifting objectives and social sources of uncertainty (Allen et al., 2011). These authors compiled from the literature 14 reasons for failure (see p. 1380), to which could be added ‘projectification’ (Allan, 2009, Allan, 2012), inadequate appreciation of the place of learning in adaptive management (Allan & Wilson, 2009), institutional and organisational constraints; and entrenched social norms (Allan & Curtis, 2005), and what I would call an Australian greener pastures ethos (Dzidic, 2009).

In a relatively new approach, Allen and Gunderson (2011) argue that adaptive management is better suited to specific application in a subset of NRM problems characterised by high scientific uncertainty and high controllability. That is, rather than apply it as better or worse versions of a universal definition, find where it is likely to work. This excludes over-drawn and stressed watersheds over multiple jurisdictions.

In government, there are abundant examples of agencies unable to afford the monitoring described in adaptive plans (Ruhl & Fischman, 2010)⁴⁰, and agency incapacity to overcome political conflict surrounding resource competition. There is little learning and resultant reduction in uncertainty, with haphazard feedback into agency programs. Litigation reflects the compromises agencies make in applying *any* model of NRM decision making. Regulatory vagueness leaves resolution to the proponent and the agency representative, reminiscent of decision deferral to Lipsky's street level bureaucrats. Moreover, only the United States Congress can overcome the prevailing a/m lite, in order that agencies may proceed 'without fear of public, industry, and judicial pushback' (p. 480).

A legal impediment to adaptive management is 'final agency action' which has two phases. Resource use conflicts are surfaced in the first deliberative phase when groups comment on documents and debate alternatives, and in the second, the government makes a decision and 'implementation/defense of a fixed record and plan of action begins' in a '*phase change*' (p. 436, my emphasis) by the legal system. Adaptive management does not have a front end which can be concluded, but is concerned with iterative decision making steps which are continually reevaluated and not amenable to a final decision. In Ruhl and Fischman's analogy, the first phase is a legal toggle switch with a final decision made after consideration of all relevant information but the adaptive management dial twiddles with more information. This metaphorical instrument makes adaptive management either a continuous or discrete reality.

Consequently, instead of front end examination of impacts through, for example, cost benefit analysis, a regulation's back end effects could be examined and subsequent incremental adjustments made to regulatory and agency practice (see note, 52, p. 437 for references to the body of work of Shapiro and Glicksman, whose idea this is). In terms of translation/transformation, the change is from the slower and more local and particular of quite simply *mapping*, to cartographic inscription and navigation (Ingold, 2000). Furthermore, the characteristic bootstrapping of adaptive management between experimental progression and

⁴⁰ State of the art performance stories (Dart & Mayne, 2005, Mayne, 2003) were piloted on selected sites to evaluate NHT2/NAP. These were not widely publicised or comprehensively adopted, anecdotally because they were expensive although a change of government may have been influential. I analysed the story of the Mount Lofty Ranges Southern Emu-wren and Fleurieu Peninsula Swamps Recovery Program (Dart & O'Connor, 2008) which showed a complete change of mind (metanoia, or Bateson's Learning III) towards a particular ecosystem, once trashed now treasured. The Emu Wren's extinction was delayed but not prevented, meaning that success was mixed. Even so, how many more other successes there were is an open question.

evaluative decision is now carried through legally in alternating phases of fluidity (adjustment) and stabilisation, each resourcing—or impeding—the other as relationality (Weik, 2011).

Learning in adaptive management. Holling (1978) used modelling as a common language, to foster understanding between scientists and engineers. Since then, learning has been applied broadly to adaptive management. In a nuanced article, Blackmore (2007) summarises 24 theories of learning (see Table 1, pp. 520-523) and their practical application. In this, adaptive management is said to focus on learning in order to understand, and then influence, the characteristics and dynamics of social-ecological systems.

Collaboration and social learning are often regarded as the kernel of adaptive management (Allan & Wilson, 2009, see also Muro & Jeffrey, 2008). Later versions of *adaptive co-management* combine aspects of adaptive management, such as managers' relations, requirements and ability, with collaborative links and an intense interest in social learning as a process of human interaction (Plummer, Crona, Armitage, Olsson, Tengö & Yudina, 2012).

Blackmore describes *social learning*, as a range of ideas from those that explain 'what and how social interactions contribute to individual learning, to those that focus on collective learning to those that include both' (Table 1, p. 523)⁴¹. On another axis, so to speak, social learning may range from collective learning about some-thing as implied in some adaptive management described as 'learning by doing', to social constructionism. The shift of emphasis from the biophysical to more human/environment and human/human interactions crosses a notional border. Social constructionism is congenial to agency-changing collaborations as structures which change agency (Weik, 2006) but fatal to materiality: Weik provides a full argument.

A distinctive thread runs through adaptive management namely Argyris and Schön's organisational learning (1978)⁴², a 'conceptual magnet' in organisational studies for decades (Friedman, Lipshitz & Popper, 2005, p. 20) as aspirational rather than actuality. Lipshitz (2000) attributes this allure to attractive language such as learning loops, and the sheer difficulty of mastering double loop learning and practising the virtues required to produce the paradigmatic Model II organisation.

⁴¹ Blackmore's entry for actor-network theory refers to 'mediating objects', which are rather more boundary objects or transitional objects in a human process studied by constructionism, than hybrids or quasi-objects.

⁴² These authors get two entries in Blackmore's table.

Defensive Model I organisations are ‘omnipresent’ (Argyris, 2003, p. 1184) arising from commonly applied theories of action learned in childhood (for complete citations of where and why see p.1183). It would be unsurprising if defensive organisations are also involved in adaptive management.

The sceptics don’t mention the ardour, coherence and innovation of Argyris and Schön’s work expressing their conviction that more humane values need to be entrenched in organisations and society. Its appeal and genius to me is as a Whiteheadian abstraction ‘luring attention toward “something that matters”, vectorizing human experience’ (Stengers, 2008, p. 96, citing Whitehead, 1968, p. 116). Adaptive management and social learning share this appeal for the same reason. Consequently I am sympathetic to Ruhl and Fischman’s advice on adaptive management that the ‘perfect should not be the enemy of the good’ (p. 484) if it involves getting bogged down when action is needed. They observe that it has taken 15 years to reach the current model of adaptive management in the courts which is good enough if they enforce it and agencies follow it. The larger lesson is emphasis on workable achievements. They refer to the unrelenting pressure on Congress, agencies, courts and stakeholders to work with adaptive management. Whether this is true in Australia is another matter.

Concluding remark. Following Latour (2005) the diversity of practical applications and the continual interest in adaptive management enables it to be talked about and performed multiply. To repeat Latour (1999a), there are more and more things to be said about it by more and more people in more and more texts enhancing its credibility. Adaptive management in all its modes enables people to talk about it, find cohesion, and negotiate still further, making it more real, more enduring. Mere rhetoric is not entirely empty when it vectorises human experience.

Procedure

Participants were asked: ‘Using your own understanding of adaptive management, how do you think it is occurring?’ The question was signalled at the interview as an ‘outlier’ which may have had a priming effect. Nonetheless it followed on from discussion of relationships.

Analysis answered the following questions.

- What agreement was there amongst participants about what ‘adaptive management entailed?’
- Was there any further pattern in who said what?
- What was included in the idea? Was it an organisational process or an on-ground one, or something else? What was it concerned with generally as one statement?

As some answers were lengthy, two rounds of abstraction were used on each response to reduce the complexity of the data. In this first round, it still was not possible to derive a satisfactory classification because of the size of some answers. Two reductions are shown in Appendix V. For some verification I asked my current supervisor to review the abstracts and she agreed with the analysis (personal communication, 16 November, 2011). This was done to maintain the holistic nature of the answers which themes, a causal and more interpretive alternative, do not (Shank, 2006a). In actor-network terms, these abstracts have been made more standardised and combinable with others in order to do something else. Besides length, confidentiality was a consideration.

Statements were juxtaposed (Shank, 2006a) and classified inductively into like groupings. Last as a stand-alone question it was a good starting point to order data confusion.

Results

The phrase ‘adaptive management’ was not thought of as exceptional. Twelve of 19 participants described something they had *done* as *instances*—not perspectives—of something that mattered. The others described different ideas about what adaptive management *could* be in their own or others’ application of it. One person didn’t understand what it was and in one case there was insufficient time left to answer the question.

However there was not a common understanding of adaptive management, and this is the point, more than that there were *four* categories, which are indicative. I called them ‘Scientific Adaptive Management’, ‘Personal Attribute’, ‘Organisationally Learning and Improving’, and ‘System-wide Learning (Good or Bad) so that Overall Level of Adaptive Management Increases’, shown in Tables 7-10 below. I used ‘system’ cautiously as it could imply inconsistent kinds of connectivity.

Staff reporting to the same superior where the reporting relation was known, did not necessarily use the concept in the same way, and neither did direct reports at the same organisational level, where this was known. It is hard to say if this is a managerial bad thing, or like ALD, simply a messy object (Law & Singleton, p. 348).

Each grouping incorporated a ‘sphere of relevance’ (Bateson 1979/1988, p. 215) a handy phrase describing increased or decreased relative universality, and changes in logical type. Natural language may not distinguish between logical types, and one implication is that people were not

talking about the same 'adaptive management' but like Bateson's Learning I, II, III, were talking about logical types of adaptive management 1, 2 3...n. Alternatively they could have been talking about one thing or type performed in different ways like the IUD which enables discussion and negotiation of these instances of it with me, for example.

Most participants could give an example, but like the single IUD, performances and instances of it were multiple. In Latour's terms it is not a fact yet, but still a matter of concern. In terms of being a principle of NHT2/NAP it served the purpose because it was not *only* rhetoric, but something which people could talk about as having done. My contribution was to actually ask what participants thought it was, deepen the relations with organisational development, and connect it to object relations. In the final section of this chapter I have discussed it further as a fire object to clarify this 'mess'.

In what follows, participants mention different kinds of adaptive management found in the literature and even more. Some participant's ideas were particularly informative and two have been examined more thoroughly as first, instances of adaptive management as Bateson's Learning II. Second, following Hoggett's description of an abuse-taking official I have introduced the idea of these as quasi-objects, recognised by themselves and others.

Scientific Adaptive Management (Statements 1-3). Table 7 shows that participants contrasted trial and error, or muddling, with experimental design regarded as more formalised and documented. Learning per se was unmentioned.

From my prior knowledge or in discussion, seven people had a broadly scientific/engineering background including five biophysical scientists. Of these five, three responded with a biophysical scientific account. Another had discussed it with me previously as a biophysical scientific activity distinct from integrated NRM and she referred to it while not using it here. One responded more with regard to adaptively managing relations. These three had a scientific theoretical view of adaptive management referring to a chain of transformation/translation as in a laboratory with a planned and *documented* approach, *evaluation* and *external* verification. Two contrasted this deliberate approach with trial and error regarded as part of human nature. In other words adaptive management was a technical specialty: confusion, guessing, and lack of system were not part of this world.

Table 7
Adaptive management; second abstraction

Scientific Adaptive Management
<p>1. It can be trial and error. If you are using a certain chemical in weed control and it doesn't work, the guys out there all the time will see that. Broadly, it is something that people do that is innate in some ways.</p> <p><i>Active</i> adaptive management involves writing down what we are doing. 'What is the hypothesis, what do we think is going to happen and then if this happens why is it happening and when you get to the other end, actually writing it down and reporting it. And actually formalising your next step, or your next. It's bringing experimental design into it but in the context of continuous changing. It is also very much tied up with of being able to demonstrate, the same idea as the Commonwealth, of being able to demonstrate that you are actually making a difference. If you are unable to prove, measure, that it's different now to what it was five years ago you can't justify having spent umpteen millions of dollars on it.</p> <hr style="width: 80%; margin-left: 0;"/> <p>2. There is conscious adaptive management and accidental adaptive management, that is. Most accidental adaptive management is just human nature. It is trial and error. There are a lot of names for it but active adaptive management is where you actually formally sit down and design, sort of an experiment but you design a program, what you want to achieve, the strategies, time frame, checks that you are doing what you said you would do. We are now doing this in our organisation and each of the regions will have a biodiversity focussed adaptive management program to our technical standards. It is very resource intensive and involves a lot of measurement and evaluation, and external scrutiny. The many theories about how a phenomenon occurs need to be tested with data over a long time. You don't know what will make difference to a particular population until you've got data for the population over 15, 20, 30 years where it all comes out.</p> <hr style="width: 80%; margin-left: 0;"/> <p>3. If done properly you know exactly what you are trying to set up, tracking where you are going and evaluating. If you are not going in the right direction and being effective you can adapt. It's not just muddling which is a cop out or worse. It is good if done properly but most people don't do it properly.</p>

One participant described the difference between public theories about kangaroo culling and the results from experimental study. He thought that the former were largely wrong because kangaroo population dynamics responded almost wholly to rainfall cycles, that is, cycles of plenty and want, rather than number reduction through floods and culling for example. A 15 year cycle became clear in Western Australia only after 15-30 years of data collection. Implicitly he contrasted the relatively short term undocumented public observations and the theories derived from them, and these data 'when it all comes out' (interview). By contrast, Federal officials needed an *annual* system of monitoring and performance indicators to show

what had been achieved. ‘So we said: “Well you can’t do it”. They said: “We have to do it”’ (interview). The interviewee said the annual indicators showed them nothing and time and effort were wasted on measuring things annually which could only hope to be changed over 20 years, that is, their time of maturity or proper time.

This group’s accounts displayed ontological politics (Mol, 1999) between the scientific world of the experimental determination of facts, what was seen as lay people’s trial and error, or what suited them, and other officials’ attempts to discipline the phenomenon and impose governmental time on an actant with its own proper times. The phenomenon, kangaroos, as actant had its own metaphysics and the scientist(s) worked out a way to be its spokesperson, contra the others, by respecting its timing and devising a chain of reference which exposed it. Furthermore the research on kangaroos was described as applicable in different circumstances. There was a constant relationship between rainfall and kangaroo reproduction in various parts of Western Australia, and Australia as a whole. Kangaroos need rainfall to be ‘just right’, as too much rain and they die of disease, too little and they starve or don’t reproduce. That is, there is an ‘art of consequences’ (Stengers, 2008, p. 109, note 2) in that there is not simply repetition of the experimental result but application of it in different conditions as representing like instances which are found to fall under the same grouping. ‘Verification is both testing and extending’ (note 2, p. 109) inaccessible from trial and error.

I feared that my analysis into science on one side and non-science on the other could be an instance of ‘unity and objectivity on the one side and symbolic reality on the other’ (Latour, 2005, p. 117) repeating ingrained classification into nature and culture. However, while three people talked about adaptive management in a scientific way, I recognised that some others who had a scientific background did not.

How to incorporate the science of environmental management is vexed. To an extent science competes for legitimacy with the knowledge of people who live there all the time. Local knowledge was not thought to be as inscribed or as patient as scientific preparedness to seek the proper time of an occurrence, in this case the relationship between gestation and rainfall incidence. If Latour is right in his translation/transformation, scientists are able to punctuate in bigger bites because of the material arrangements of science⁴³ which loses its empirical grasp

⁴³ ‘Learning’ has been taken as self-evident change for the better, embodied in the organisation or individual rather than as Bateson’s ‘punctuation’ of ‘the infinitely complex stream of events’ (1972, p. 163). Punctuation meant learning by the organism, or rather acquiring the habit, that a short sequence of

without them. One participant mentioned the loss of scientific records as computers were trashed, data bases were unpreserved, and scientists often did not write up their results. He thought local knowledge was reliable because residents were there, observing continuously. Other participants mentioned scientific superiority as something which affected relations substantially, discussed further.

Personal attribute (Statements 4-5). Table 8 shows responses from two people who described adaptive management as a personal attribute. One gave an example from his life and how he had always sought out new experiences. ‘In our field forty years’ experience is not the same as having the same year’s experience 40 times over’. He added that ‘you need to be prepared to learn as you go’. In Bateson’s terms, the same experience 40 times over is Zero Learning, while the others could be Learning I, II, or III. Primed to understand adaptive management as the correct process for environmental management, not personal experience, especially in this early interview, I didn’t know what to make of this insight. However a comment from Stengers (2008) made a difference.

Table 8
Adaptive management; second abstraction

Personal Attribute
<p>4. The <i>theory</i> of adaptive management is unhelpful. It is learning by doing. It is not making the same mistake twice. Forty years’ experience is not the same as having the same year’s experience 40 times over. It is about learning from your mistakes. It’s about learning and making changes and being prepared to change with time, learning as you go.</p>
<p>5. Strategic thinking about where to take the organisation in changing circumstances. A few people in the organisation who think long term are doing it all the time to provide leadership and direction. You always survive.</p>

In French ‘experience’ and ‘experiment’ are indistinct and Stengers uses this to point to: ‘Whitehead’s particular empiricist stance that philosophy exhibits experience as experiment and vice versa’ (note 1, p. 109). Her intent was to ‘signal a practice of active, open, demanding attention paid to the experience as we experience it’. The participant was an experimenter of this sort as were perhaps the doers previously mentioned. Statement 5 referred to adaptive management as the long term strategic thinking of two senior people in the organisation.

information signifies this and not that, a form of forms of discernment.

Organisationally Learning and Improving (Statements 6-10). In responses shown in Table 9, action was mostly concerned with continuous improvement, ‘doing what we do better’ (Statements 6-8). This accomplishment may be underestimated as single loop learning or Bateson’s Learning I, namely ‘the revision of choice within an unchanged set of alternatives’ (1972, p. 287). It is adaptive insofar as it requires a myriad of subtle changes to maintain stability and constancy of performance against novel incursions. The manager in Statement 6 is not about to revise project outcomes, that is, ‘the *set* of alternatives from which the choice is made’ (p. 287) which was a collective decision. His concern is that the reference group may need to be changed in order to achieve them. Again, stabilisation of program performance was a prime concern in national audit reports (ANAO, 2004-05, 2007-08).

Table 9
Adaptive management; second abstraction

Organisationally Learning and Improving
<p>6. Constant evaluation to determine if organisational actions are achieving project outcomes but also of your relationships. We are constantly sitting down and going: ‘Is that reference group still working? Are you guys happy with what you are doing? Do you feel you are getting somewhere?’ Changes are made taking this feedback into account in achieving outcomes. Otherwise if people have lost interest and are telling you that it is not working you realise later that you have wasted a year.</p>
<p>7. Simplistically it is learning from your mistakes. We’ve had a number of reviews of the regions and audit reviews and key findings have been incorporated into other programs. There has been learning from relationships and committees about what has and hasn’t worked and processes have been incorporated to stop problems and improve NRM outcomes. It is continuous improvement through learning from what you have done in the past or from new evidence that comes from somewhere else.</p>
<p>8. An organisational managerial role to continuously improve NRM program delivery from small changes, a form for example, to big picture bilaterals. There were a <i>large</i> number of things we did to improve delivery. If you are a manager this is just what you have to do.</p>
<p>9. Organisationally it is putting up models—including goals, targets, how to invest and the best arrangements for getting people to work together—for the next step debating and negotiating them and then moving to them in real partnerships with state, Commonwealth and local government, landowners, and industry. Adaptive management is going in a very practical way to reach your vision and your targets. Program logic is a formal tool you can use to get from there to here and to review and reprioritise between cycles. It’s a mechanistic view but works with the people who are involved who are down to earth and want practical ways of doing things and to make change and are already involved. The social team building stuff in isolation doesn’t work with them. What hits a chord is a practical working model and doing that such as mapping dieback and prioritising its management. So we’ve got the esoteric mechanism through partnerships, and integrated NRM and linked and rolling business plans but we’ve also got the practical element. In this</p>

region there are about 500 community groups and about 8-10,000 people and 30 local governments and they're starting to work together. With stop start funding when you have finished the projects that's that and then people say 'they're finished'. There is no on-going process to get you to the top of that hill. You've got to get up there in stages. So then the projects become mechanisms and you say: 'Right we've done this bit, so what do we want to do next?' Only about two percent of those people want to jump up to the big picture level: 'I really like doing, but I can see that it's not going to be worthwhile unless my doing bit fits into a bigger vision'.

10. Building some basic disciplines into our work. Implementing organisational strategic planning and a planning cycle with clear direction from the top, following up on the full cycle and thinking about wider implications agency wide rather than just me doing what I think. Putting processes in place so we think something through from concept to implementation. Adaptive management is looking at your environment and those sorts of things. How are your programs going? Are we recognising changes in the physical environment? Have we recognised all the wider implications of climate change?

The statements in Table 9 are from the relatively universal end of the translation/transformation concerned with equity and standardisation of implementation. The inadequacies of the translation/transformation of the NHT2/NAP program from the locality/materiality end were spelled out insightfully by two regional groups, Corangamite Catchment Management Authority (CCMA) in Victoria and Northern Agricultural Catchment Council (NACC) in Western Australia—which stated that the 'one size fits all' approach of the program 'does not fit anyone' (Johnston et al., 2006, p. 80). The program 'disenfranchised local groups that now had to try and understand and adjust to a larger-scale and more impersonal system that might not fit their contextual needs' and which had 'increased complexity and bureaucratic requirements' (p.13). 'A totalitarian system [would avoid] "confusion" and a "bottom up" system [would ensure] resilience' (p. 14), summarising matters from the locality/materiality end and suggesting a conflicted juxtaposition of two extremes, which is possibly inevitable as relativity.

Translation/ transformation may be used as a lens to view connectivity of the entire program, rather than say, as a series of disconnected *levels*. Furthermore decision makers are distributed all along the chain of reference, and not simply located, as decisions are part of a smooth running chain, a metaphor from Whitehead who contrasts this chain as truth, with error as a muddle (1920/1964). Fact is never immediately visible, 'but only a series of mediations, each of them translating a more complicated reality into something whose forces can more easily be passed down the line' (Harman, 2009, p. 73). Latour echoes Whitehead's metaphor with his 'downtown expressway moving smoothly this morning' (1999a, p. 77), that is, the mediators are

making the expressway more real, more singular like an expressway and less like a congeries of cars.

Latour's (1999a, pp. 24-79) example of circulating reference is a flawless presentation and as he points out often enough, one accident and the scientific chain of reference is truncated. Grant programs like NHT2/NAP are assumed to be able to perform continuous translation from on-ground to decision makers and the reverse. Clearly there was not a smooth running chain in the minds of CCMA and NACC.

Stop start funding vitiated a smooth running translation in statement 9. When one project and its funding finished, people tuned out, and continuity and learning from project to project was jeopardised. Reference was made to 'putting up models' of how new relations could be envisaged and would operate, and then debating them and negotiating them. The model was a quasi-object or transitional object (Carr & Downs, 2004) the potentiality of which resources a new reality and actuality, of integrated NRM through a series of actual occasions. There is no material equivalent such as the IUD for 'integrated NRM'.

Statement 10 was concerned with the change from having good ideas and only implementing to an extent, to planning and thinking through the full implications and looking at the whole planning cycle. This was important in the change 'from a world where we thought we had water. Well we don't have water' (interview). The new strategic and business planning brought all agency roles together and people felt that they could contribute rather than everyone acting in isolation. To me it seemed as if there was a transition from trial and error to more passive adaptive management.

System-wide Learning (statements 11-19). I classified five of the nine statements in Table 10, namely 11, 14, 15, 16, and 19, as Bateson's Learning I, applied beyond the home organisation itself. Statements 11, 15, 16 and 19 referred to the need for change and specific responses tried, or set in train, including embedding learning in future processes. Statement 14 described adaptive management as a list of principles including the need for people to have input from 'an external perspective, so that people have a bigger perspective than themselves and a touchstone to the bigger picture for all the smaller projects'. Statements 12 and 17, referred to Caring for our Country as major change.

Two statements stood out, namely 13 and 18. Statement 13, described adaptive management as a translation from more extensive in space and time, that is more of a network and more smooth flowing, with more mediators (people, plants and animals), to less extensive in space and time. There was a translation/transformation of learning and knowledge from the relatively universal to more locality/materiality, which then reversed. The learning loop was stated to be faster and more stable in regional catchments because generally the same people are there learning for the next cycle. If a regional group made a mistake, it was swiftly observed. The learning loop was described as being shorter and closer in space and time than in Perth or Canberra bureaucracies where:

People move every six months making learning less frequent and the learning cycle time is slower because it's more distant, more remote and the learnings are not as profound as those of the local people who are always there with rich interaction and breadth of view from the market place of lots of interests. (interview).

It may be inferred that the administrative network was smaller and less stable than that of the regional groups. The program was said to have matured over four years as regional people learned and this was how long it took to for them to take the intellectual leadership. 'This learning may be lost with CfoC and we will lose the richness, benefit and experience of the regions and return to a slow, long, turgid, roundabout loop' (interview).

Learning in this instance directly refers to the exchange of sociality and objectivity as more objectful. The reported richness, benefit and experience of the regions becomes less particular, less specific, more universal, more textual and slower rather than faster.

Table 10
Adaptive management: second abstraction

<p>System-wide Learning (good or bad) by Practitioners so that the Overall Level of Adaptive Management Increases</p>
<p>11. Responding to stimuli such as complaints that the regional model was too expensive and too bureaucratic; looking at what to put in its place. The government requires consultation and openness but then adaptation may be too slow to be seen as adaptive. When we make inquiries about complaints about the reporting system for example there is no response. Adaptive management is difficult.</p>
<p>12. The way the regional and NRM bodies are evolving is sort of adaptive management where they are adapting to what has been pushed upon them. The regional NRM groups in particular are adapting to new circumstances and will keep evolving. Caring for our Country was not adaptive management but complete, complete change.</p>

13. The learning loop is faster in regional catchments because generally the same people are there learning for the next cycle. If a regional group makes a mistake the local people are close and see what went wrong and say the money was wasted as the investment didn't stop die back or whatever. The learning loop is shorter and closer in space and time than in Perth or Canberra bureaucracies where people move every six months so learning doesn't occur often and the learning cycle time is slower because it's more distant, more remote and the learnings are not as profound as those of the local people who are always there with rich interaction and breadth of view from the market place of lots of interests. Intellectual leadership moved from Canberra to the regions over the program. With CfoC⁴⁴ this learning and the richness, benefit and experience of the regions may be lost with a return to a slow, long, turgid, roundabout loop.

14. Adaptive management is being able to change your decisions as you go, evolve as you go. Make the project better and make it stronger. Generally the bigger the project the more capacity there is to adapt but I think sometimes we try and make things too big. Adaptive management needs a good system and commitment to it: an external perspective, so that people have a bigger perspective than themselves and a touchstone to the bigger picture for all the smaller projects; good decision making processes which are not usual; good intellectual input (program smarts, local and scientific knowledge) so that the money is used in the wisest way; and project evaluation from inception which it almost never is. Projects may be too small to be effective so you may be adaptively managing a loser.

15. Farmers are getting more aware and are more willing to change their processes and do things. The state government agencies are getting to have a broader knowledge about a greater level of priorities so there is more integration, and more things are taken into account and so the overall level of adaptive management is increasing. Practitioners can capture money for the things they need to do. People don't stick to the old things, are not as bound by rules and regulations or command and control processes, and are more willing to respond and change on their own initiative.

16. I suppose it is learning, learning, from what we are doing and making sure that gets embedded in future decision making processes. This role included making contacts and connections personally or through newsletters and forums and so on, so that others, particularly outside the organisation, like the wetlands network and new offices, knew what was happening, in for example the NRM investment strategy and could use it. The role of this job is to improve adaptive management, that is, giving feedback on decisions and improving the way things are done. But it's hard to separate out adaptive management from just good practice NRM. It's hard to tell what impact this role has because we are a long way from the coal face.

17. Caring for our Country is a big change. Bringing home the need for change, clarifying it, advantages of it. This role was not involved in organisational change management or adaptive management.

18. Adaptive management is seeing the links. First this was in a scientific sense in what people on the ground had to do to adapt their NRM on-ground work to drought, water the environment, animals and fire. It was also seeing the links between business processes so that for example when a quarterly reporting system was really falling behind, it was being able to use personal relations to modify protocol for minor errors to save two or three

⁴⁴ 'CfoC' (pronounced 'see-foc') was often used in speech for 'Caring for our Country'

weeks in a report having to go up and down chains of command. It was also being able to see the links between what is required to meet the two different goals for two different situations in different organisation or within one. For example seeing a link between the media requirement of one organisation and the capacities, achievements and organisational requirements of another. Adaptive management is really knowing the system, that is, how things work, but not in any bad sense, so that you know where the boundaries are and can make changes within them without disrespecting people or relationships, to make it work better. Adaptive management is 'utilising the boundaries'.

19. I learned how critical adaptive management was by doing on-ground stuff myself when things didn't turn out because of the season, resources, people Adaptive management is critical because you're always having to adapt for whatever reason. Seasons change, resources, drought, methodologies that were going to be used, technologies that should have been suitable but don't work, all need to be adapted to. Catchment groups regularly sent formal variation requests because of these and they were behind schedule and needed extra time and sometimes advanced payment. State and Commonwealth government needs to do it as well by acknowledging these things. The critical issue is when. Between the Commonwealth and state, changes in thinking are important too; we used to do it this way and now we've got to go that way. Adaptive management at all levels is critical to relationships and making things happen.

20 & 21. One participant said he did not understand the question and time ran out for an answer from the other.

A participant said that programs tended to be 'silo-ish', that is, dealing with a specific object such as eradication of a particular weed, and contrasted it with what he said was the demonstrated power of integrated views of regional groups. However, silo-ishness or specificity is encouraged in good policy formation to deflect political meddling and to ensure development of a rational set of criteria (Burgess, 2012, 4 May)⁴⁵. Burgess was responding to a report by the Institute of Public Administration, Australia (IPAA) arguing for establishment of a sound business case for a policy before finalisation of public consultation. Caring for our Country met seven out of ten of the criteria for more successful policies, a good result according to Howard (2012).

The IPAA report omitted cross jurisdictional impacts because of budgetary constraints. However a participant in my research was angry that Caring for our Country should be this paradigm of policies when it disregarded more local decision-making, also represented by politicians in their electorates.

⁴⁵ 'In a nutshell they are to establish need; set objectives; identify options; consider mechanisms; brainstorm alternatives; design pathways; consult further; publish proposals; introduce legislation; and communicate the decision' (page unknown).

The Commonwealth government learnt something about what was going on in the regions, through the program architecture of direct funding, but arguably the learning was really going on in the local loop. The locus of translation shifted. I pondered why I had thought that the relatively universal end of the translation was both better and inevitably simply located, however nebulously, at a more powerful end, Canberra in this case. Now it was this end that was provincial, less real, and with a smaller network.

The two regional groups NACC and CCMA did not see it this way. NACC in rural Western Australia saw ‘government’⁴⁶ as remote, holding ‘all the influence and decision making authority, leaving community essentially powerless’ (Johnston et al., 2006, p. 14) leading to ‘increasing social discontent as the community became more sophisticated and had increasingly high expectations’ (p. 14). The participant’s observation that intellectual leadership and situational appreciation had changed hands was not *felt*. NACC wanted government to ‘demonstrate trust and respect over a prescriptive and directive manner’ (p. 14) while also recognising that the state government had ‘demonstrated enormous trust in the regional groups by enabling them to undertake the program’ (see p. 15). CCMA recognised a ‘large gap between decision makers and regional reality resulting in the impersonal and often contextually inappropriate aspects of the NRM system’ (p. 14) together with a ‘rural urban disconnection’ (p. 14). NACC participants stated that ‘government and community viewed *NRM differently*, with the community having an on-ground focus’ (p. 14, my emphasis). CCMA participants suggested that: ‘Attention to bridging government-community and urban-rural gaps was [...] a *different* way to go about things’ (p. 14, my emphasis), that is, paying more attention to continuity of translation/transformation.

As mentioned above, in statement 18 the participant refers to ‘seeing the links’ in different actual occasions between three different organisations in one instance, and two in another. The first link concerned what people had to do to adapt their NRM ‘on-ground work to drought, water,

⁴⁶ ‘Government’ was used generically in this report and I wondered whether this was a drafting decision or a reflection of what it connoted to group members. From memory, Catherine Reid (formerly Johnston) thought that ‘government’ was contrasted with ‘them’. On-ground was contrasted with ‘out there’ (she gestured with her hand), ‘remote, abstract and decision making in the sense of government making the decisions and not understanding the context’. It was a ‘power broker’ and accountability monitor. Of the three levels of government, local government is specifically distinguished in the report but in the Western Australian group Ms Reid thought that ‘government’ connoted state and Commonwealth indiscriminately while the Victorian group referred to the Commonwealth government specifically (Catherine Reid, personal communication, 29 June, 2012). Note that the CCMA was a *statutory* body in the State of Victoria while NACC was a citizen group.

the environment, animals and fire'. The second was seeing the links between business processes in two organisations in order to reduce red tape between them. The third was seeing connections between the goals and aptitudes of two different organisations for their mutual benefit. The links were not necessarily about trust or co-operation but instances of extending the chain of connectivity, making it more real.

The participant described how he implemented the translation, that is, the links. In the following, first the translation/transformation of the accounting reports will be discussed and then conclusions reached about 'linkedness', that is, a principle of relating. I then propose that officials are themselves quasi-objects.

Lindberg and Czarniawska (2006) ask:

What do such translations look like? And how do translations actually succeed in connecting actions to one another? If they do, how then are such connections stabilized to endure? And last but not least, what are the consequences of such connections for the participants in the project [...] both to the individuals and the organizations that they represent? (p. 297)

What did the translations look like? The participant described a convoluted flow of accounting reports between more than four organisations which made detection and correction of errors a lengthy process. Organisation B required quarterly reports from all regional groups, which in turn, had to get, check and collate reports from sub-regional groups which did the same for on-ground fundees. The request for reports went 'down' (interview) and the information containing reports went back 'up' (interview) via Organisation B which collated and checked them and sent them to Organisation A. Protocol ordered the flow.

At first reporting through Organisation B's accounting systems to Organisation A and onwards went well because the person in charge, an official in Organisation B was on top of the job and took responsibility. This long-standing employee left and then, 'cat amongst the pigeons' (interview) things weren't done. The participant said that employee's replacement came and also went as the job was quite difficult. Reporting was drawing out with an increasing possibility that one report would not be completed by the time the next one was due, delaying critical payments. I infer that maintenance of this routine as protocol demanded, was counter-productive red tape, instantiating a dilemma of governance.

The participant depended on the skill and knowledge of his counterpart in Organisation B for the translation because he was not familiar with Organisation B's system of accounts. Quarterly reporting on the acquittal of grant funding fell further and further behind, exacerbated by what I

interpret as passivity or defensiveness on behalf of Organisation B's staffer who asked to be instructed by the participant, saying 'it's in Organisation A's court': note, not in the *participant's* court which would have been personal, not official. While the participant's person to person relationships were 'fine' with his Organisation B counterpart and 'fabulous' with the regional body, he felt that there was 'caution' in discussing business with Organisation B. The note of caution was reiterated by some other participants who related that state government officials talked half-jokingly about federal officials as spies but not with any personal animosity. The state's suspicious persona is described in Analysis III.

The alternation between interpersonal relations and bureaucratic impersonality is important theoretically because Lindberg and Czarniawska (2006) distinguish action nets where they are unimportant for daily work practices, from networks where they are. They instance staff members such as nurses who are replaceable in an action net because the institution makes the role⁴⁷. However both the personal and the impersonal brought into play by one official and recounted by another who noted when this started (relations were 'fine') and stopped (there was 'caution'). This feeling translation would not have occurred without both.

Rectification of minor errors in accounts from the regional group directly by *phone* rather than sending any queried accounts back via Organisation B which would then send them to the region which would then return them back up the chain of command, was described as 'just a personal thing', which was 'far easier for everyone', and saved time. The regional group saw the beneficial consequences of saving two to three weeks and another benefit probably arose from the perception of being good administrators described by two participants as being very important to the group. The Western Australian Auditor General earlier found that 'groups are submitting quarterly and half yearly financial and progress reports in a timely manner' (Auditor General of Western Australia, 2004, p. 27), contributing to their legitimacy which was questioned from time to time.

⁴⁷ The difference between an actor-network and an action net is in timing insofar as actor-network studies begin when 'translations and connections between actions in an action net have already begun to stabilize' (p. 294). Contrarily Latour states that actor-network theory is most useful 'when things are changing fast. [...] New topics, that's what you need ANT for' (2005, p. 142). The 'terribly fuzzy' boundaries of 'organization studies, information studies, marketing, science and technology studies, or management studies, mean that they are also better studied by ANT' (p. 142), Environmental management's boundaries are becoming fuzzier but are still biophysical with the social sciences as poor relations.

The detection and correction of minor errors was Learning I but the new route of translation/transformation was enabled by Learning II. The approach was made; 'Do you mind if...?' (interview) and the other was *receptive* to it because of existing good interpersonal relations and 'it was just easier to speak to them', resonating with Whitehead's smooth running chain which was faster. The new way of working was then *stabilised* by the speedier accounts and the rest of the chain, or context in Bateson's sense. This is important because organisational learning may be conceived as learning by an entire organisation implying something large and also raises the enduring question about an organisation's ability to learn (Argyris & Schön, 1978). Here the learning is a little change of an interorganisational network but was regarded by another participant as 'one of the key things that needed to be dealt with on a regular basis' to ensure timely payments and to allow enough time to consider the reports. It took time to work it out and improve what began as 'an onerous task'. 'It was never perfect, never perfect, but it got better'.

It took me some time to realise another connection. The participant was explaining the chain of events. The interviewer is shown in italics.

Now I'm still a bit... So you've got the finance person in the um [regional body] which was terrific, she was amazing and then she left.

In Organisation A, er, Organisation B and then she left.

Oh I see, she was the amazing finance person, in Department C.

No, no in Department D.

So she was the terrific finance person.

Yeah.

And you short-circuited the problems with her. No?

[I started drawing a diagram].

The terrific finance... OK. In the[regional body] yeah there was the one person, one person there but...

She was the amazing one who was so organised.

Mmm. The one who left was in Organisation B was...

Right. And you had a good relationship with her and she was the one who you could trust and could cut short the loop, the two or three weeks saved.

No that was this one but she didn't leave. She stayed there.

And she was also good.

Yeah.

Now we've got the [regional body]. We've got the program managers here.

Yep.

And then we've got the subregions and you had some dealings with [named one of these] //

Yes.

But not a lot with the others or//

Not that much with the others.

So it was basically with the [regional body].

Yes.

How did this work between these two?

The participant explained the process some more, to which I responded:

I can do my little diagram a bit better now. So that's Organisation A so they send it to Organisation B. That's there [on diagram]. And then they'd send it to the others who would send it to the others. And this is a quarterly exercise.

Yeah now we never had anything, we didn't send anything out. It was Organisation B that sent them out. They sent them back to us.

The participant continued the step by step explanation. The section below is a part of it.

And if there's any mistakes we've got another little loop.

That's it.

Then [the regional body] would collate.

Yep.

And then that would go back up.

Yep.

And if there were any little mistakes it would come back again.

That's it. (My emphasis. Underlining has been used where necessary to avoid confusion with italicised interviewer lines)

I have reproduced this for a number of reasons. First it is as an example of 'bureaucratic voluntarism' (Gunningham et al., 2003, p. 62) mentioned in discussion of Swan River Governance. This was attributed to unclear statutory, policy, and program roles, and consequent reliance for policy coordination on officials achieving consensus between independent bureaucracies. The extent to which these roles can be made perfectly clear even with the best whole-of-government intentions is a moot point. Bearing in mind the multiple performances of the IUD health committee, negotiation as voluntarism may be how it is in order to unify different realities. This is a huge and tantalising topic. There are the usual impediments to interorganisational relations (see Analysis IV) but now I would linger over descriptions such as the inability of one person who could barely run the meetings 'because [they] didn't have a feel for anything that was being discussed' and 'didn't have the vocabulary' (interview).

Second, the reader will also have noticed how tentative and intricate the actual occasions are, namely the participant's with counterparts, and his and mine. In the latter I am a learner with a patient trainer who reinforced me with affirmations as I felt my way. As I drew the diagram I clarified it for myself and verified it with the participant. The entire sequence is another instance of Learning II as an achievement when *I* got it.

The patient participant could have looked at his watch and I could have responded by hurrying on or just giving up. These links are fragile. Like Bateson's experimental dolphins, on which his levels of learning are based, at first I was frustrated but kept at it because I was wrapped up in the process at the time. I also realised that what I was told was important or in some way special, and the person who was telling me was thoughtful and communicative. We both had a *readiness* to connect, that is, '*uncommitted potentiality for change*' (Bateson, 1972, p. 396, emphasis in text). Perhaps the master connection, readiness is less intentional and more spontaneous than the actor agenda used in actor-network theory (Latour & Callon, 1981, Law 1994). In passing, readiness is finite, located and temporal within a 'structural matrix' (Bateson, 1972, p. 396) which is also finite and temporal, a nod to Whitehead's actual occasions within the extensive continuum in my view.

Third, how do translations succeed in connecting actions to one another? Lindberg and Czarniawska (2006) describe connections in which cognitive, emotional and mimetic (copying

through stories or on site observation) elements predominate stabilised by objects and standardised procedures. Nonhumans have a passive role as stabilisers for an action net by 'providing different perspectives because when seen from different points of view they can be regarded as being different from before' (p. 295). Note 'perspectives' not 'performances'. They are necessary for durable social connections which are primary rather than symmetrical⁴⁸.

In the first instance described by the participant, seeing the links required conceptual feelings such as intelligence, understanding and approachability which I thought this participant modeled in his dealing with me. 'It was just a personal thing' (emotional feelings) contrasted with the impersonal arising through role (conceptual feelings).

Seeing the links required further conceptual feelings such as knowledge of how things work, that is of the 'boundaries'. Respecting these, as well as *moral qualities* such as respect for people and their position were required. Feeling connection was through a 'fabulous' relationship generated with limited face to face access but some 'visiting' to see what the others did as *mimesis* (see, p. 303). *Negotiation skills* enabled an approach, a proposition, to the regional body with an offer of saved time where time was an actant commanding continuing attention, and saving it would bring credit for everyone involved rather than increasing delay caused by following protocol⁴⁹. Power was shared as in negotiation each shaped the other. Readiness enables all of these as *potentiality*.

Latour modeled transformation/translation substantially on Whitehead's concrescence and the interview segment lent itself to a brief outline of Whitehead's ideas to amplify Latour. As recorded by tape and diagram, I could re-enact some actual occasions. Concrescence occurs in stages in a before-after relationship, that is, not in clock time. Once this becoming is completed, the actual occasions turn into objective data which in turn are prehended (felt) by other actual occasions. '*That's it*' (interview) marks the end of the becoming, when the exchange became an objective datum, when the entities stopped affecting each other.

⁴⁸ The 'model underlying the action net became objectified in various documents and procedures' (p. 304) but the question is how did this objectification happen? The 'materialization of the action net in the shape of objects and standardized procedures' (p. 304) seems to have occurred as a sort of by-product after the events as further enablers of the humans. This is not what Latour or Callon (1986) were aiming at with their notion of translation enabled by actants both human and nonhuman in their principle of symmetry: it is this which makes it so valuable in practice disciplines particularly. Nonetheless, the paper gives welcome insight into a method for studying translation.

⁴⁹ Note that at the time of interview some years later there had been no action on infringement of protocol, mentioned because of confidentiality provisions.

Very simple actual occasions such as material objects have a limited becoming. The pencil and the paper I used to draw the diagramprehend each other. Prehensions are the feeling of another entity, not necessarily in the sense of emotion but more as grasping. The pencil and paper physically feel each other, and then pass only slightly to a phase of conceptual feelings. More complex actual occasions include further phases with conceptual and then intellectual activity enabled by propositions. These are lures for feeling and further integration beyond that of physical purposes. The lure of the proposition is possibilities, what *might be*, rather than what is in fact.

It is an essential doctrine in the philosophy of organism that the primary function of a proposition is to be relevant as a lure for feeling. [...] The ‘subjective aim’, which controls the becoming of a subject, is that subject feeling a proposition with the subjective form of purpose to realize it in that process of creation. (Whitehead 1929/1960, p. 37)

There was the lure on my part to want to understand the situation and the participant’s willingness to enable me to do so, as we became subjects, together with the pencil, paper, recorder, noise and furniture in the period of concrescence, the completion of an actual occasion, marked by my: ‘That’s it’ (p. 175). Co(a)gency (Michael, 2004) is discussed in Chapter 7, p. 205.

Whitehead’s metaphysics is based on feelings as prehensions which make entities and experience. ‘Feelings are vectors; for they feel what is *there* and transform it into what is *here*’ (1929/1960, p. 133, emphasis in text). All entities have feelings: a stone feels the sun’s warmth. They include emotions but are not the same as them, so the ‘fabulous’ relationship is better thought about in these terms rather than emotions usually considered as human, private, individual, and primordial. Latour does not dwell on either but feelings have a role in his perseverance with the transition of matters of fact into matters of concern. His notable example is of the Columbia space shuttle disaster (2011) which described how the working shuttle, an intermediary, was ignored, mere matter—objective—but explosion transformed it into a matter of concern. ‘Have a care, here is something that matters’ (Whitehead, 1968, p. 116, cited in Stengers 2008, p. 96).

Power in Whitehead’s sense was demonstrated as my ability to shape and the participant’s willingness to be shaped and vice versa and the pressure of the pencil and the receptiveness of the paper. Guiding the exchange was a shared but unarticulated vision of getting this right. The shared readiness to participate, a ‘subjective aim’ leading to, in Whitehead’s phrase, a ‘positive

prehension' (1929/1960 p. 35) or feeling, unlike the negative prehensions exemplified by the actors in the Swan River study (Robins et al., 2011).

Lindberg and Czarniawska (2006) do not ask specifically how the translations occur as a balancing equation between what is amplified and what is reduced as we 'extend our link' (Latour, 1999a, p. 71) towards the relatively universal and reduce the link to locality/materiality (or vice versa). In the case of the chain of care, the 'tip [which] is all that finally counts' (p. 70) of either within the other (see Figure 2, p.141) became disembedded into an actor which could travel as a brochure with recommendations from the National Board of Health and Welfare. This was superseded by the new model of cooperation which comprised already established objects and procedures built up through the chain of care. The potentiality (form) of the chain of care now resourced as actuality (matter), the model of cooperation as a *program* able to be implemented elsewhere to potentially achieve the same goals (Hernes & Weik, 2007). The model of cooperation is a higher level of abstraction than the chain of care and has its own language.

Learning to learn occurs through the aggregation and stabilisation of experience which acts as potential for other experiences. The chain of care became more universal and textual through charts and preparation of a brochure amongst other things, and then even more universal and textual through the translation of now *existing* chain of care objects, practices and procedures as the 'part of'. What was originally unknown, untried and untested, is now available nationally. The intellectual leadership, to echo statement 13, could pass to others who will start actualising where the originators left off, and this new network infusion is *potentially* available to make these more real.

The diagramming participant gave another two examples of adaptive management with one nested inside the other. He received a call from head office at the precise time when he was pulling his car into the drive of a sub-regional group, asking if he knew about any possibilities for a video to be made to publicise successful projects. His suggestion of a particular group was based on his third example of adaptive management, namely the more scientific side of adapting 'on-ground work to the environment, to drought, to animals and fire' as well as their commitment, amongst other things.

The group agreed to the proposal. While not receiving any further grant money, he said that they actually gained a lot out of it through further training, assistance with some procedures, and the experience. He had later received a call from one member about the group's now enhanced reputation from being show-cased and so they become relatively universal and part of a greater network, that is, more real.

In his view of adaptive management was 'a *good* thing' (participant's emphasis) if you work within the rules, and don't disrespect people or their position or damage relationships. 'I can do this in these boundaries'.

These three examples together exemplify 'seeing the links' as the *participant's* Learning II, that is, learning to learn to prehend a relatively universal 'pattern through time' (Bateson, 1979, p. 14) that is, context, of particular and local sequences. The connection of these three instances into one by the participant was an astonishing and original addition to the definition of adaptive management as 'linkedness' between organisations, which I didn't get at first. 'Seeing the links' brought together different experiences into some-thing new, a subject in a process of concrescence.

'Linkedness' had a 'part of' connection with the instances of it. It was not a boundary object or a boundary process, such as the glass jar, in the sense of being a routine (Lindberg & Czarniawska, 2006) but a high order concept explained to me by instances of it. It was an icon of unproblematic connectivity or the potentiality of an eternal object (Halewood & Michael, 2008). This agile intervention was achieved by attunement to innovation and excellent interpersonal skills by a staffer on the job.

Officials as quasi-objects. They are now personal, themselves, chatting, but then impersonal agents of authority attempting *sine ira ac studio*, to deal with accounting matters of state—Serre's third man or the ball. The officials were relatively universal officials when they were passing the ball but local/material themselves when they were not. The accounts ball created the relationship between them which slowed when the pass was poor: 'It's in Organisation A's court', that is, you officially are now responsible for this.

When the quasi-object *stops* 'it makes the individual' (Serres, 1982, p. 230 cited in Carr & Downs, 2004, p. 357) and a potential victim. It was 'just a personal thing' to start it up again

but with some personal risk. It poses the question of the extent to which an official is off duty when he reciprocally trusts someone or a group, recalling the NACC regional group's request for trust to be used in translation (see also Robins et al. 2011). Is there such a hybrid as official trust—important for governance—or is there perhaps yet another bureaucratic self—interesting for object relations.

The example is paradoxical because, echoing Serres (1995a) objects slow us. The accounts quasi-object, by circulating, constituted relations between organisations, and these in turn made a new, speedier, quasi-object. The intervention made a different time in another instance of what a translation looks like—faster and riskier when there are fewer stabilisers, less 'turgid' (see statement 13). Public servants slow things up as du Gay's social stabilisers (2007).

Other participants who were officials described comparable experiences in which there was a need to have enough understanding and trust to be able to acknowledge the constraints and advocate a course of action that may not be obvious but could work for both. If there was not that trust: 'You would be the straight down the line public servant. This is what we've got to do and you're not being as open in giving them the full picture' (interview). Relationships have to be based on feelings in what Whitehead calls causal efficacy, 'a passing on of data, of reasons, of motion, of feeling' (Halewood, 2011, p. 55).

Another participant thought that federal and state officials encountered in a range of different situations over the years, were 'absolutely faceless bureaucrats. It is irrelevant what department they are in' (interview). They would not commit to anything. They were off to other jobs. They were not interested in his specific policy expertise, 'scarily so' (interview).

He thought that there was 'a wall of bureaucracy' in all government agencies. It was hard to find a person in charge of a department or a section on government web pages. He contrasted people's commitment at his workplace and in NRM where people were 'incredibly committed' and 'passionate' (interview).

These instances show officials acting as faceless, disinterested and uninterested intermediaries or trusting mediators, giving people the full picture, who 'can make it all happen and it can work for you and it can work for us' (interview). As quasi-objects in a chain of connection they could choose not to rock the boat, or rock it and risk being stuck with the ball, the alternative posed by governance. Officials decided what the timing would be and what the future would consist of in extending the translation/transformation of policy and decision making.

Where to for adaptive management?

Single and multiple. Observations that adaptive management is a well-established concept (Eberhard et al., 2009) or that it should be one (Rist et al., 2012) epitomise a prevalent conception that it is, or should be single. I was confused by its absence in evaluations which is why I asked the question. I expected it to be one ‘thing’ with different versions such as trial and error, performed better or worse as a managerial problem. Descriptions and instances of adaptive management by participants were inconsistent, surprisingly as they were a principal of the bilateral agreements. Nor did they seem to be rhetorical frills. The differences in the literature were themselves confusing and in the very early candidacy document, I rationalised these as more or less adequate by comparison with active adaptive management as the gold standard,

However post Dugdale (1999) I realised that there are many *versions* of adaptive management being performed unexceptionally as processes, not perspectives. These too reference one absent gold standard, for example a/m lite *may* be passive adaptive management (silver) but active adaptive management is unperformed, missing. Like Dugdale’s IUD, different performances were being collected under one name in Tables 7-10.

In these, there are other gold standards, as written and unwritten adaptive management, which makes a difference or not, is conscious or accidental, done properly or as a ‘cop out’ (interview).

It was much later as the versions piled up, that I realised, like alcoholic liver disease, that these were inconsistent and often contradictory. Alcoholic cirrhosis, fatty liver disease, liver disease, alcoholism, dictionary definitions, and quality of life effects, amongst others, were performed differently in different sites and with different *treatments* detailed by Law and Singleton (2005). In the first of four sites, a specialist gastro-enterologist refers to the principles of a written protocol which juniors don’t follow but should, because metabolic symptoms from withdrawal of alcohol could otherwise mislead them. This problem is not unrelated to the text book account—another site—but not the same either, as its focus is on side effects of withdrawal of alcohol. In the hospital ward, withdrawal symptoms include aggression, distressing to staff, the patient and others. In a general practitioner’s surgery, the text book advice of abstinence was inappropriate for one patient, as ALD was the least of her problems and the doctor thought she would be better off using alcohol than hard drugs. Other sites enacted other versions of ALD, both as ‘an object in-here and a context out-there’ (p. 73) including the pathology department, the psychiatric establishments, the pub, and various agencies. These could not be related to each

other, but were also part of the same health care system, interacting with each other through the files, patients, paperwork and professionals circulating between sites.

Predominantly, and in most sites, the condition was linked more or less strongly and with greater or lesser specificity, with alternative, partially connected, foci [...]. The consequence was that it became natural to attend to one or other foci, or some mix of objects, rather than insisting rigidly that talk should focus on alcoholic liver disease itself (Law, 2004, p. 79).

There was some categorical consistency for example there was a predominantly medical, bodily ALD occurring mainly in the liver. There was a relational ALD, concerned with psychiatry and the patient's life more generally, when alcohol was used to deal with life events. That is, it was both internal to and beyond the body. ALD was: '*a shape- changing object, that even more misleadingly, also changed its name*' (Law, 2004, p. 79, emphasis in text). A fire object however is not clarified by insisting on its singularity as it exists through its multiplicity and even generates more. Adaptive management is probably like this, a number of foci each with an ensemble of practices, with some of it even happening under another name such as 'seeing the links'.

Rationalisations are important as they impede progress. I was surprised by the mere presence of answers to the question on adaptive management, compared with its sparseness in the evaluations (see note 39, p. 149). It was spoken about often and in detail and answers consistent with active adaptive management were gratifying. At first, I rationalised differences between statements as consistent with qualitative research, as that's what participants actually said, a position consistent with Latour's obsessive literalness in which we learn from them. Now I understand that we can learn from them more obsessively, paying even greater attention: Mol's observations of a sliced, bombarded and weighed object (1999), discussed shortly, are exemplary. I made the move to different *performances* with difficulty because it is hard to think, another rationalisation maybe.

I concluded later that adaptive management was a fire object but some of the implications really hit home even later. Adaptive management is now briefly explored as one of these perhaps with a more thorough treatment at a later date.

Adaptive management as fire object. Adaptive management is assembled at *different sites*, principally in Australia and the United States. Singularity is sought as a better trajectory. A/m

lite *performed* in United States courts as there is almost no law on it, is compared adversely with an absent gold standard, namely Holling (1978), chiefly because of lack of monitoring and evaluation, rationalised by lack of Congressional interest. The resulting financial deprivation and regulatory inadequacy, shift performance of final decisions onto another site, namely Lipsky's street front, where officials thrash out regulatory interpretation with proponents, as Gunningham et al.'s bureaucratic voluntarism.

Adaptive management challenges final agency action, a fundamental legal process, because its performance is temporally different from the incisive 'before and after' time of court decisions on deliberation. Adjusting to it involves changing the performance of regulations. Ruhl and Fischman's observation of a phase change hints at ontological politics (Mol, 1999) that is, the choice of which reality will be preferred—court decision time or adaptive management iterative time, or some balance between them.

Other sites include places of involvement with creatures and biophysicality. Biophysicality occurs as reference to field data in Rist et al. (2012) and is otherwise absent from the article. Only eight participants in my research mentioned an environmental object such as Jarrah die back, the Great Barrier Reef, kangaroos, wildflowers and birds. These were the sphere of both scientists and down to earth people who liked practical, on-ground action, consistent with the overwhelming impression found by Allan and Curtis (2005) of a 'desire for rolling-up-your-sleeves-and-getting-things-done' (p. 419).

The strategy behind the working model was developed by others at another site, the totality being adaptive management (see Table 9, statement 9) which is absent in the background. Similarly: 'adaptive management at all levels is critical to relationships and making things happen' (Table 10, statement 19) which refers, like the chain of care, to a metaphorical chain of actions from the agreement in principle of the COAG to the NHT2/NAP program, through to on-ground action in sub regions.

Scientific active adaptive management is temporally sensitive involving potentially long waits for a process proper time to emerge, such as kangaroo reproduction, or more fundamentally, a conducive rainfall pattern. Adaptive management here shares temporal specificity with its counterpart in the United States' courts as an imposed process time, an object that makes us wait (Serres, 1995b). Adaptive management was planning sessions in head office leading to more

coordinated organisational action (see Table 9, statement 10), and the transfer of expertise between an urban site and regional sites in a learning loop (see, Table 10, statement 13)⁵⁰.

Yet another performance designates adaptive management as particularly, or even only, suitable for sites of low risk and high controllability (Allen et al., 2011). These conditions of possibility situate adaptive management as anywhere *they* are applicable to it as an actant, rather than almost everywhere as unsuitable and absent. It also contradicts the ‘back ending’ proposed for the United States courts where adaptive management would be relatively uncontrollable and high risk compared with customary deliberative decision.

I have anticipated Law and Singleton’s hierarchies of more and less reliable tests for liver function. Discrepancies are not due to the gold standard *tests*, but rather to aberrant patients, say, concealing their level of alcohol intake. A new gold standard test for learning in adaptive management is double or even triple loop learning, as we have seen. In some instances the revolutionary intent of Argyris & Schön has been replaced by technical examination of *environmental system* behaviour (Eberhard et al., 2009, Pahl-Wostl, 2009), and an evaluation loop which may lead to ‘new paradigms of problem solving’ (Head, 2009, p. 21). It is Holling’s model as transitional object, and Argyris and Schön’s Model II organisation, which are now less reliable, not to mention Bateson (1972) who cautioned against playing with the psychic fire of Learning III (triple loop learning).

This partial trial of adaptive management as a fire object is provocative. There was no single trajectory with ALD and there isn’t one with adaptive management either: a fire object ‘stutters and stops’ (Law, 2004, p. 147). They are both single and multiple, providing potentiality for most participants in their descriptions of them. It is not so much that adaptive management does not occur but that it is never as one discrete fact or actual entity. In the light of the variations in the 19 statements, it may be asked how much adaptive management goes unrecognised because of assumptions that it should be performed on-ground in a particular way.

This kind of analysis examines the injunction that a thing *should* be one way and fundamental assumptions about the expectation of singularity, applicable to determinations of sustainability or resilience or collaboration. Like case study, they are both single and multiple—or fluid and fixed.

⁵⁰ This participant initially was dismissive of the question and then said: ‘I know!’ the flash of novelty of a propositional prehension, when it is ‘entertained’ by admission into feeling in an actual entity (Whitehead, 1929/1960, p. 287).

Multiplicity suggests different foci, requiring investigation as to how and by what these are linked up, or better, persist in relation, and with what consequences. ALD produces a variety of treatments and the patient may get any or some. This is not to say that injury may result or management is culpable. If the same approach were systematically applied to NHT2/NAP, plainly the 56 regional groups in six sovereign states and two territories over multiple geographic regimes would have difficulty maintaining a single trajectory. They've said so themselves often enough. The action to outcome program instrument is an attempt to produce singularity, but the multiplicities have been well-rehearsed as indeed, potentially different realities, the 'gaps' described by NACC and CCMA.

In performances of pathology Mol (1999) instances different objects created by different instruments. In three practices what I have thought of as a liver specimen, is sliced (fleshy object), weighed (heavy object) and bombarded with ultrasound ('thick and opaque' object, p. 77). Instruments produce the object which is not one thing but 'different and yet related objects' (p. 77) and what's more, they are being performed side by side. She continues: 'They are different forms of reality. Itself' (p. 77). A further project would be to determine how many kinds of NHT2/NAP 'livers' there were and why. I have done this somewhat tentatively using the IUD as a simpler prototype. However, now as navigator, I could confidently bombard, slice and weigh a fire object.

In the next chapter, what helped and what hindered the connectivity between COAG and on-ground, and the reverse, is examined. Connectivity relies on successfully linking many small differences by 'progressive and traceable transformations' (Latour, 1999a, p. 141) along a path of reference. My focus has been on logical types and abstraction which are sympathetic via Whitehead's societies which in his example, are like the Greek language.

Whiteheadian societies endure within continual process. These are 'complex routes of actual occasions exhibiting some level of conformity as each produces and confirms a way of feeling, of achieving its own identity, as proposed by the particular social environments it inherits' (Stengers, 2008, p. 104). It is not mere data which has to be felt but the 'open, yet-to-be-determined question of how they will be felt' (p. 105).

Another object, 'regional strategy' is followed as an actor. I chose it because of its significance as an event or influence. It was probably one of the few objects which travelled from on-ground as an expression of collective citizen priorities to the central government. Unlike adaptive

management and like the IUD, it has a constant Euclidian volume performance as a book. My attention was also caught by discussion of what NRM was. I would have thought that this central concept would also have been straightforward, but from the interviews and other sources, it was not.

Chapter 7: Analyses II+III

INTRODUCTION

This chapter includes two examples of actors in Analysis II (regional strategy and NRM), and in Analysis III ('Life is Robbery') what I have called a moment of concrecence.

Regional strategy was chosen because 16 of 21 participants thought that the regional strategies were a significant event or significant influence. 'Actors are *events*, and events are always fully deployed. They are the sum total of reality rather than an incidental surface-effect of the movement of dormant substrata (Harman, 2009, p. 47). That they were thought of as events was interesting. There was an object version as a book and so they seemed to be an immutable mobile or a quasi-object and I followed its trajectory as an actual entity which endured.

NRM unlike the IUD or regional strategy, has no obvious 'entified' relation such as birds, gauges, samples and records but it endures. 'Polyingression' (Michael & Halewood, 2008) examines how an actual entity through its potentiality, acts as an icon (eternal object) for performances on actual occasions. Like the IUD, NRM is an icon of unproblematic performance of environment and health respectively, which become problematic when interacting with entities.

Last a short segment of an interview became a subject in its concrecence. 'It' stood out as that which *made* me a truer researcher by taking over the actual occasion of the social science interview segment, which was analysable. A co(a)gent (Halewood, 2004) disciplined me into becoming another sort of interviewer.

ANALYSIS II: REGIONAL STRATEGY

These plans were one of the few *things* other than money, which to my knowledge travelled between COAG and the sub-regions. In the bilateral agreements between the Commonwealth and the states, it was agreed that the regional strategies, once accredited⁵¹ (signed off) by the state JSC, would then be funded. Investment plans would identify the funding required, and prioritise projects and activities for each regional NRM strategy

When asked: 'Thinking back what were the significant events in the relationship?' a majority of participants said the regional strategies, if only as an irritant, because to have input you had to

⁵¹ Accreditation was defined by the ANAO as: 'A formal process for assessing the appropriateness of a regional plan' (2007-08, p. 9).

attend the workshops, time which it was thought could be better spent. All but one thought that Caring for our Country diminished their significance. I had relegated them to the background as one document amongst many and was surprised by these responses.

The regional strategies were significant at each stage of the translation/transformation. They were a significant component of the intergovernmental and bilateral agreements between each state and the Commonwealth for the National Action Plan on Salinity and Water Quality Management and the bilateral agreements for extension of the Natural Heritage Trust (NHT2). They were one of the chief instruments which articulated relations between each government and region in Western Australia but had no legislative basis and were 'advisory strategic planning documents' (ANAO, 2004-05, p. 25). Their design was a 'highly complex and technical task' (p. 36) including a 'rationing process' (p. 17).

Latour (2005) lists the occasions such as 'accidents, breakdowns and strikes' (p. 81) when objects change from intermediaries to mediators, that is, they become more active and may be studied. Change in government policy is another, and the analysis shows why the regional strategies became a mediator. Had the then national government continued in power it was likely that NHT3 would have continued the same policy line, as bilateral agreements for it had or were about to be signed.⁵²

The regional strategies expressed *consensus* on what would be done in the future by each regional body. Perth Region NRM's strategy was stated to have been done very consultatively with public participation to determine priorities.

The Swan ran big forums for the community to come in. What are the important ones to you? Stick your thing on the whiteboard you know, about where you saw it, so lots of involvement down to the grassroots level. Built what we thought was a pretty sound document. [...] That was a big event in building that, getting the dollars to flow to that, and they were significant dollars and then all changed. [Made whooshing noise]. So we've had a couple of big events there. Of real significance. (interview)

The groups started writing the regional strategies with trepidation.

They all went; 'We can't do that we've never done strategic planning before. What are you talking about? I don't know how to write a target'. And they did. They are no smarter or dumber than anyone else in Canberra and state agencies or whatever. They just needed the confidence to do that. And they needed to understand the sort of resources they needed. [...] And to be confident to ask for them and not beat around the

⁵² The ANAO flagged that targeting high priority areas of national significance (see Sections 4.31 and 4.48) and 'critically important assets' (p. 96) would be preferable in NHT3 rather than continue as in NHT2/NAP in an audit report dated 8 February, 2008 (2007-08). The federal government changed on 27 November, 2007 and much has been made of the in-coming minister's influence on the new policy. Caring for our Country is consistent with the ANAO's independent recommendation although a participant thought that it was a strong reading of it.

bush. And reminding every now and again to look at the bigger picture and how does that fit within the overall scheme. (interview)

The regional strategies as a quasi-object enabled the people concerned to work with it in actual occasions over about two years, to develop their *confidence*, connectivity, negotiation capacity, and indeed existence. Quasi-objects also create quasi-subjects: the regional strategies created people *as outcomes*, as ‘confident strategists’, ‘NRM volunteers’ and ‘community’.

Preparing a regional strategy gave them experiences of reality as created order through the common⁵³. It was suggested that ‘when all 56 regional NRM plans have been accredited, Ministers table the plans in [Federal] Parliament and acknowledge the important role of volunteers in developing the plans and their commitment to delivering on the outcomes stated in them’ (Keogh, Chant & Frazer, 2006, p. 7). I have been unable to find out if this happened.

The start of Caring for our Country was the second significant event referred to by 14 of 21 participants.

And it's a bit of a tragedy in a way, because an enormous amount of effort went into those regional strategies.

I mean there was a *huge* amount of effort put into the regional strategies and how you measure the success. That was *huge* and there was years and years of work by community groups and under Caring for our Country the first thing they made a decision was, that all those regional strategies and all of those goals, which were, you know, two years, three years, five years, 10 years, aspirational 50 year goals, forget about them. They're not there anymore. You don't have to worry about your strategy or your goals or all your programs. (interview, participant's emphasis)

The ‘dollars rolled in based on those strategies’ and now ‘bingo, that's changed’ (interview) because of Caring for our Country.

The Perth Region NRM strategy was ‘the size of a telephone book’ (interview). It was a *solid object*. It was not a mere report, but a *charter* which effectively inaugurated the incorporated regional body by being recognised by the Ministerial Council which then turned on the funding tap. Regional group investment decisions were aligned with the goals and targets of the strategy with expected results monitored over specified periods in accordance with Commonwealth instructions for the program. Some notion of adaptive management was used as discussed before.

⁵³ Heraclitus discovered this *xynon* as the essential principle of order in the universe.

The strategy stated what the *future would consist of*, with 50 year aspirational targets or a vision, resource condition targets for 10-20 years, and management action targets for one to five years which would contribute to resource condition targets. NHT2/NAP was substantially revised after two to three years and it was stated that if it had been known that this would happen then less time would have been spent on doing the strategies which took up to four years. There was a kind of proportionality. 'It's hard to do a 10 year plan when you don't know if you will be funded in 10 months, much less ten years' (interview).

When asked what she would have done if there was an opportunity to do things differently one participant spoke in terms of 'building something more substantial' (interview) rather than reliance on more ephemeral government funding. She said that this was probably something important to do 'from the beginning'. The strategy set out *the end-in-view*, which moulds 'the immediate concerns and aims of that which is experiencing and acting; they explain the manner or character of existence' (Halewood, p. 100) for humans and nonhumans. In Dewey's example of building a house, the end-in-view is contemporaneously part and parcel of the building, and not 'just a remote and final goal to be hit upon after a sufficiently great number of coerced motions that have been duly performed (1958 [1925]', p. 373, cited in Halewood, 2011, p. 100).

I asked what stopped the participant from chasing alternative sources of funds.

Busyness, busyness, busyness in writing strategies, investment plans, reporting workload. But, saying that, you can always reprioritise your workload to make some things more important. This was always something we were going to get to once we got past this bit of workload and we never did quite get there. (interview)

A series of circumstances resulted in the regional bodies in Western Australia being ceded particular powers. First the intergovernmental joint venture between each state or territory and the Commonwealth of Australia was unique: 'This joint venture over a shared pool of cash is extraordinary' (interview). The 'cash pool' as it was referred to, applied to NAP not NHT, where the state matched in kind, which was thought to have weakened it. Usually the Commonwealth provides a tied grant for identified uses by the states.

Second in two states the regional bodies remained non-statutory with neither state nor federal government having direct control. In Western Australia the relationship between state and region was contractual. As mentioned one regional body felt that this demonstrated enormous trust by the state government (Johnston et al., 2006).

Last, Western Australia was the only state to have regional representatives on the Joint Steering Committee (JSC). These circumstances gave the Western Australian regional bodies unique decision making powers which the regional strategies epitomised and represented.

When they were signed off by both governments, this was quite a devolution of powers with the government saying: ‘*We think we will accept your plan as the model of how funds should be spent on your catchment*’. That is quite different from someone in the EPA in Western Australia, saying: ‘Well we think we should be investing in that’ (interview, my emphasis)

It is also quite different from the Commonwealth government making the decisions on which projects and kinds of projects should be funded as per Caring for our Country. In the non-statutory bodies: ‘*Regions* made the decisions. Now the decisions are made in Canberra. I think it is a step back 20 years’ (interview participant’s emphasis).

The plans translated/transformed these regional decisions to the state and federal governments, as *instruments* or relatively universal, circulating texts directed at centres of calculation. Shape-holding enables relative universality and long distance control.

Each regional strategy incorporated decisions and choices, workshops, autonomy, locality, materiality, competence, ‘our weeds’, ‘our targets’, trust, and the ethos of the NHT2/NAP as power devolved to the public and assigned by the statement of intent, the regional strategy. As a *spokesperson* this travelled to be accredited and became the form of each region in this next step. The bilateral agreements between the states and the Commonwealth for NHT2 and NAP required each state to ensure that each regional body had specific capabilities and functions⁵⁴. In Western Australia each regional body signed a *Funding Agreement* with the state which transferred accountability from the state to the group. ‘The Agreement states; “The Regional Groups must do all things necessary to ensure the State is able to comply with the terms and conditions of the NAP and NHT2 Bilateral Agreements”’ (Hicks, 2006, p. 70).

Hicks was concerned that tight state control could result in loss of community identity if the regional groups were ‘hogtied’ (p. 68) by red tape. They would only appear to be running things, with major direction by the state. The regional groups were more than just contractual

⁵⁴ Section 4.2, *Bilateral Agreement Between the Commonwealth of Australia and the State of Western Australia to Deliver the Natural Heritage Trust Extension* (NHT2), 17 December 2002; Section 11.1, *Bilateral Agreement Between the Commonwealth of Australia and the State of Western Australia for the Implementation of the Intergovernmental Agreement on a National Action Plan for Salinity and Water Quality*, 11 September 2003.

entities in his view, but *existential*. Hicks mentioned the regional strategies as documents but did not attribute any significance to them.

A participant said that one of the aims of NHT was to foster some *enthusiasm* towards NRM through voluntary participation.

And so it was really to *inject* some of that community priority setting and also to inject some community enthusiasm for implementing some things rather than coming down on high from Canberra and everyone thinking: ‘Oh God, what would they know in Canberra, they are just a bunch of shiny bums’. (interview, participant’s emphasis)

This was thought to have worked and was estimated by monetising the value of volunteer labour, discussed below in more detail.

Caring for our Country by changing the architecture changed the basis for the existence of the regional bodies in Western Australia and the relevance of the regional strategies.

Caring for our Country has switched that around completely. It has moved away from the paradigm of Landcare and that sort of working through local communities to the Commonwealth saying now that ‘we know what we want and we are going to purchase it thank you very much’. And so that is quite a change. It is also moving into a competitive mode. (interview)⁵⁵

The targets were now the Commonwealth government’s, and the important issues for the region, as workshopped and then stated in the regional strategy, were probably not able to be dealt with. In the early days of Caring for our Country, it was recounted that the Commonwealth’s position to the state was: ‘If you want to have regional strategies that’s fine, we don’t care, we are just going to address our national priorities’.

We were appalled. [...] It [the announcement of the transition to Caring for our Country] happened *just before* afternoon tea one afternoon, an official made that comment just before afternoon tea. And it sort of devastated everyone. *After* afternoon tea people are saying what have we been doing for the last four or five years? And how could you just ignore the strategic approach that we spent so much effort in developing. (interview, my emphasis)

In the Western Australian south western wheat belt, business is done in the morning, and the afternoon is for fellowship⁵⁶. ‘Afternoon tea’ divides the ‘before’ of business from the ‘after’ of fellowship rather than being an event occurring in linear time, at say 3.00 pm. It is not only a

⁵⁵ Bilateral Agreements were negotiated between each state and territory but Caring for our Country was put in place with: ‘No level of partnership or consultation *what-so-ever*’ (interview, participant’s emphasis).

⁵⁶ Ms Lorraine Hams provided this insight (personal communication, May 31, 2011).

boundary object or process, as a ‘cultural trading zone’ (Law & Singleton, 2005), but has decided what the future will consist of, dividing a happier past from a ‘devastated’ future. This *temporal quasi-object* decided the ‘before’ and ‘after’ of relations, souring them. It made Lindberg and Czarniawska’s emotional connections but it also divided time.

Regional strategies were said to have provided ‘a good structure’ (interview) for setting up projects with Caring for our Country provided they aligned with its targets. Loss of that *alignment* was not simply that you didn’t have anything that matched a Commonwealth target but a loss of sovereignty or reality.

So even though this community of people may have decided that some things were very important for this region, we can’t use the Commonwealth dollars to implement that. As an example the weeds of national significance. They are not really an issue for this region therefore we can only spend money on *them*, so the important weeds for this region can’t be dealt with. So people are going to lose that sense of ownership because the important things they have decided need to be done can’t be done with Commonwealth dollars. Now if the state steps in and puts some money into those gaps we can keep things going. But it does take away that whole you know, the whole NHT thing was about getting ownership from communities and that is simply taken away and the federal government will decide what is best and what is important. (interview, participant’s emphasis)

The important local weeds engendered a sense of ownership; they might be weeds but they were *our* weeds, important in translation. To repeat, objects make relations and relations make objects. ‘Our weeds’ connect and ‘their weeds’ won’t.

Lindberg and Czarniawska (2006) describe the ‘we feeling’ (p. 303), an emotional connection, which the translating participants constructed through a certain ‘way of working, that is, an object they had constructed together’ (p. 303) stabilised by the brochure they produced acting as boundary object. These authors propose that continuation by participants of their own separate traditions and professions ‘probably prevented any resistance to the connecting of actions. In fact project participants proved very eager to connect actions that were separated in space and time’ (p. 303), perhaps implying that they were indeed ‘we’ and the home group became ‘they’. Speculatively, the ‘sense of ownership’ and the ‘we feeling’ produced by ‘our weeds’ and ‘our brochure’ could signify what Freud called ‘narcissism of minor differences’ (Blok, 1998). Freud talked about ‘campanilism’—or ‘bell towerism’—as a metaphor for the separation of two largely similar villages. Blok does not take into account the role of objects as actants, while referring to them. However the campanile for example, acted as a boundary object or preferably quasi-object for attachment of a ‘me’ and a ‘we’, against a ‘they’ and a ‘them’. In the chain of care

example, a plethora of actants including professions and traditions, together with new ones, distinguished the emergent chain of care or later, model of cooperation group from the home group.

A participant spoke of honouring regional groups' work and commitment, which I could not place as at first it sounded to me like honouring a cheque. Earlier I had thought of honouring of another realm, and paying it its due, another possibility as per the proposal to table the 56 regional strategies in the national Parliament to recognise the volunteers.

So if we could *honour* what has been done in terms of community. If you ask a community to spend four years putting together a strategy that it thinks that is right for its region and then you turn your back on it, that is a really bad thing (interview, participant's emphasis)

So in some way to go back to *honouring the regional strategies* and the work that whole communities put in to those targets. [...] So honouring in some way those regional targets. (interview, my emphasis)

From an 'us' bound by the targets, they went to 'them'. People and objects are the outcomes of *feelings* in Whitehead's sense, of their relations to other people and objects, such as the regional strategy and the targets, and hence perhaps the use of 'honour', as a feeling. 'The philosophy of organism presupposes a datum that is met with feelings and progressively attains the unity of a subject' (Whitehead, 1929/1960, p. 234). Later it will be recounted that a Commonwealth representative did not realise that the regional bodies in Western Australia were citizen groups but thought that they were state entities, also dishonouring them and diminishing their subjectivity.

The development of the regional strategies 'forced people to work together' (interview). Regions needed government expertise and there 'really did need to be an exchange of views in order to get those regions' strategies and investment plans up and running. [...] I think it worked reasonably well' (interview). Another official with specific expertise stated that he had had 'a lot of input' into writing Perth Region NRM's business plan and investment plan and it occupied a 'huge amount of time [...] to influence them' (interview).

If the following example is representative, the regional strategies were regarded equivocally or not at all by the Western Australian government. The Water and Rivers Commission, and later the Department of Water, had their own strategic and business plans. Early in NHT2/NAP some sections of another department, later included in the Department of Water, worked with Perth

Region NRM and Avon Catchment Council to write their strategies, including some of their own objectives. They also helped them to develop community links. The Department of Water did not make the connection that it is 'our plan as well you know' (interview). This participant added that it was 'community input to what it wants for waterways, for our water to be managed. [...] It sat off to one side. It still sits off to one side'. It's been a real shame in reality' (interview). 'We helped them write it and then put it to one side' rather than saying: 'here's an opportunity to get community involved in state agency planning' (interview). The time has now passed for the regional plans to be integrated⁵⁷.

It was not appreciated what the program and the region was doing. There was a view: 'well here's a group in the Swan that gets \$3-4 million to plant a few trees. I think that's the view. They did the plan now there is duplication of effort' (interview). One of the chief state criticisms was that the regional groups had set up alternative bureaucracies. There was also thought to be a 'poor perception of the community by government [...] with respect to lack of trust, influence, and valuing of its NRM work' (Johnston et al., 2006, p. 20).

The architecture of the state NRM institutional frameworks had become 'so unclear as to become dysfunctional' (Hicks, 2006, p. 16). Each regional plan was not integrated with that of the others, or the agencies, by an overarching strategy. Hicks recommended such a strategy be actioned by the newly established Council of Natural Resources Agency Chief Executives (CONRACE) comprised of the director generals of departments concerned with natural resource management. He was also critical of inaction. 'The Review sees little evidence of concerted, rigorous, resourced, timetabled State processes' (p. 26).

To this day there is no state NRM plan, considered as a 'vacuum' (interview) although a consultation draft for public comment was prepared by CONRACE in 2008 but not released publically to my knowledge. 'The NRM plan was "we've signed an agreement" and we are here throwing dollars together for all this good stuff under these plans but it was never written

⁵⁷ The Department of Water engaged variously with the six catchment councils for strategic development of NRM in priority areas. Water quality management was undertaken in partnership with the 'South West Regional Water Plan 2010-2030' (2010). NRM councils were consulted as stakeholders in the 'Perth-Peel Regional Water Plan 2010-2030' (2010) (see <http://www.water.wa.gov.au>). Perth Region NRM was keen to have formal input into the business and strategic plans of the Department of Water but did not to my knowledge.

down and articulated at all' (interview). The six regional strategies could have provided a substantial start as well as ordering the common.

Summary remarks

Callon and Latour (1981) describe an actor as:

Any element which bends space around itself, makes other elements dependent upon itself and translates their will into a language of its own. An actor makes changes in the set of elements and concepts habitually used to describe the natural and social worlds. By stating what belongs to the past, and of what the future consists, by defining what comes before and what comes after, by building up balance sheets, by drawing chronologies, it imposes its own space and time. It defines space and its organization, sizes and their measures, values and standards, the stakes and rules of the game—the very existence of the game itself. (p. 286)

The regional strategies:

- expressed consensus about what would be done in the future by citizen groups and government and were used as a measure for completion and timing of projects;
- the 'end-in-view' they outlined moulded and was moulded by concerns, aims and experience;
- built confidence, expertise and enthusiasm;
- were a volumetric object;
- were an 'accredited' charter between distinct and separate realms and granted powers through it;
- were a spokesperson for the region or common; and
- forced government to work alongside citizen groups.

They were sometimes a thing—'the size of a 'telephone book'; sometimes a narrative—the story of high hopes, 'all that work wasted'; sometimes a social bond—the whiteboard sessions, the eventuation of the hoped-for enthusiasm, the potential tabling in Parliament; but 'never a mere being' (Latour, 1993, p. 89). They became spokespersons for the regional bodies by making these dependent on them and stated what the future will consist of.

While they were mere beings to me and Hicks in his review of NRM in Western Australia, regional strategies were significant events to others. As an actor potentially *not* followed it was 'a time-space system which [was] ignored' (Halewood & Michael, 2008, p. 40), potentially less real. It enrolled me making me a different researcher and I have made it more real.

A Whiteheadian society, as in his example of the Greek language, is minimally, that which endures (Debaix, 2006, cited in Halewood, 2011, p. 87). Regional strategies endured for a time

but tenuously now. They have fewer alliances and are no longer *becoming* in the same way and are becoming mere beings.

How an actual entity becomes constitutes what that actual entity is; so that the two descriptions of an actual entity are not independent. Its 'being' is constituted by its becoming'. This is the 'principle of process' (Whitehead, 1929/1960, p. 34, emphasis in text).

Regional strategies are akin to de Laet and Mol's water pump as multiple orderings of an actual entity⁵⁸ which keep differing but stay the same, through gentle, continuous transformations. An eternal object, something like 'regional strategyness', has been followed through its prehensions into actual occasions. The regional strategy developed and retained a certain stability which could potentially be tabled in Parliament.

ANALYSIS II: NATURAL RESOURCE MANAGEMENT

Perth Region NRM, the Commonwealth and state governments disagreed about what natural resource management *really* was, its 'business idea' (van der Heijden, 1996). The influx of new ideas from the regional groups juxtaposed new instances and challenged orthodoxy. Some of the *performances* of NRM are described below and summarised in italics.

Historically: 'When you think NRM/Landcare oh *it's about farmers*' (interview). Environmental management of farms originated as Landcare in Victoria initiated by the Kirner Labor government. Kirner was State Premier and as a former social worker, the community aspect of environmental management is thought to stem from her.

Within this farming model, Avon Catchment Council, from which Perth Region NRM had been split off, was thought to be more '*business-like*', attractive to public administration after decades of managerialism. It had a smaller, tighter structure, used competitive tendering more often resulting in having 'to put in another layer of project management' (interview) with specific training for staff. Contractors did the data gathering, rather than volunteers as in Perth Region NRM. The Chief Executive Officer was well thought of and successfully applied his business background.

The business idea was thought to have contributed to the model for Caring for our Country. A participant from Perth Region NRM was incredulous that Avon Catchment Council was held up

⁵⁸ The extent to which 'actual entity' may be used to describe enduring objects is a subject of scholarly discussion, as at various times Whitehead uses 'societies', 'nexūs, and 'actual occasions' (Halewood & Michael, 2008).

by a Commonwealth official as a model for NRM because most works there were contracted out rather than being done by the community.

Avon Catchment Council ‘struggled for representation’ (interview) and an ‘engagement mechanism’ was ‘missing’ (interview) with the implication that it might not represent the community. Some state agency employees were on the board which in principle was questioned for the regional bodies because of the potential for conflict of interest (see Hicks, 2006 pp. 75-76), as it ‘was the agency that was the member, not me’ (interview). By law, board members must act in the best interest of the board and not as representatives of the group that appointed them. If the regions were community groups, on the one hand it could be questioned whether they should be on the board, but on the other, ‘partnerships are what achieve things’ (interviews). Officials representing agencies attended as observers but not board members at Perth Region NRM. Perth Region NRM was a ‘different world to the Avon’ (interview)⁵⁹.

Officials’ observer status may have led to the impression that they were not contributing. Perception of non contribution by some Queensland agencies was raised by participants in Robinson et al. (2010) as ‘a deliberate “deadening strategy” of passive participation’ (p. 13). In the quotation below the ambivalent situation of officials in Honig’s dilemmatic space is delineated.

Even though what the Catchment Council clearly wants is to get favouritism. I mean that's why you do it. That's what relationships are about. Tipping the nod to [...] instead of sitting there like a clam. I think it's a very interesting point about the line you draw and at what point does it become more than a business decision. (interview)

The participant contrasted public servants’ need to maintain impartiality in dispensing taxpayers’ money with business expectations that there would be favours—done over lunch—because that was what relationships were about. Line drawing about board member interest was difficult, even without overt personal interest and favour, by the ‘clams’ who would likely have eschewed these but not been so well versed in the role of *ex officio* members, as Hicks (2006) hints.

NRM involvement was about *reciprocity and favours*. In the same breath this participant contrasted the mien of public servants in Perth Region NRM meetings, as the expectation that they should be impartial, ‘even though what the Catchment Council clearly wants is to get

⁵⁹ Other differences between the two were the area, population and demographics, funding, and the industry base.

favour' (interview). Then current investigations into potential official corruption were linked to bureaucratic risk aversion.

There were 19 members on Perth Region NRM's board which for business was too big, but as representation of 300-400 community groups, 'kept the links' (interview). More demonstrable links to opportunities for volunteers to get involved were said to result in people turning out for Swan functions as 'people want to do it' (interview). The business idea catered to *getting things done*. 'There is only one way to achieve catchment repair and that is to do it' (Bradby, 1994, cited in Hicks, 2006, p. 41). 'Doing' as a motivator for the majority of people interested in NRM, versus strategy and strategic oversight was a point of contention, going to the heart of what NRM *really* was. Officials were often negative towards what was regarded as the over-large network of Perth Region NRM and especially considered its supporting bureaucracy redundant duplicating the state's own.

Senator Alexander Hill, a prime mover for NHT1, would have loved it, as doing was most consistent with his money-direct-to-on-ground vision for NHT even down to the extra bureaucracy (see pp. 223-224). NHT1 was based on relatively small groups getting things done on-ground which Perth Region NRM continued. It relied on relationships and encouraged sub-regional groups to work together, pool resources and collaborate with local government. For example, water quality data was collected by sub-regional groups with quality control and entry into data-bases managed by the state. The state could have employed technicians but a participant observed that this way resulted in some regional employment and ownership of data, that is, it made relations.

And then when the results came out, I guess they knew where they were coming from. It wasn't something that some anonymous public servant had come down and taken water samples from their stream and told them how much nitrogen and phosphorous was in it. (interview)

I asked if water monitoring, that is, collection of quality and quantity data, was a state responsibility. It was debated whether the state should pay for monitoring under the relevant legislation, against a history of the Commonwealth paying for routine data collection. When Commonwealth funding was withdrawn, the state closed gauging stations on *surface* water—rivers and streams. Ground water—aquifers—is crucial for the Perth metropolitan area water supply but neither government had funded monitoring for 45 percent of it. Perth Region NRM commissioned a consultancy report and then monitoring bores using Commonwealth funding

and advice from the Department of Water. These administrative activities were also considered to be NRM.

They are just projects that you are managing as part of an NRM group. That's mainly what you do. You evaluate new projects to be put up by anyone or you commission projects and you monitor the success of existing funded projects. (interview)

Two officials queried the definition of 'NRM' being used by Perth Region NRM in its waste management program. One referred a member of it who disputed their interpretation, to the *Bilateral Agreement* (2002, 2003) for the definition used there, as the last word on it. Besides, the whole thing was 'put to bed a long time ago' (participant) a sneaky attempt at black boxing and enrolling the researcher.

However natural resource management is not defined there. Section G of the *Bilateral Agreement* refers to subsection 19 (2) of the *Natural Heritage Trust of Australia Act 1997* which states three overarching objectives of the Trust. There is no official definition of NRM applicable to the state.

The sticking point was that Perth Region NRM had negotiated a multimillion dollar grant to examine and audit effluent management by small businesses as their pollution of catchment waters was largely unprosecuted. The state government had powers but targeted larger businesses as far fewer and therefore more cost effective which left a niche for suasion by a lower cost third party, Perth Region NRM. The *Bilateral Agreement* is consistent with the *Natural Heritage Trust of Australia Act 1997* and could include waste management in its effect on water quality. What NRM includes as instances of it is unclear. Like ALD, it does not have a typical performative trajectory.

Another view was that Perth Region NRM's activities should have been directed to natural assets such as the iconic Swan River and Rottnest Island, coastal marine reserves, and bushland along the Darling Range scarp. NRM is *simply located* in specific geographic locations rather than comprising phenomena which straddle multiple continuous locations. I did not ask directly why addressing water pollution in the Swan River catchment wasn't NRM but suggest this may be the reason. Other Perth Region NRM activities included mapping incidence of a major tree disease, Jarrah die back, sponsorship of a study of birds in Perth's metropolitan area (Davis et al., 2008), and bore monitoring systems as mentioned, all of which are extensive.

While Landcare addressed a problem ‘in the bush’, it was out of the way of urban dwellers. Integrated peri-urban conservation and restoration, rather than focus on particular items in particular places regarded as ‘assets’, is relatively new. Peri-urban is hard to define and theorise attributed by Marshall et al. (2009) to its newness, but not necessarily as has been shown. ‘Social and economic concerns are mixed with resources, which would add other performances of NRM consistent with Section 21 ‘Principles of ecologically sustainable development in the *Natural Heritage of Australia Act 1997*.

Perth Region NRM had ‘a frustrating habit of always seeing themselves as different’ (interview) from the other five regions because it was metropolitan, a smaller scale regional body, was thought not to have some complex NRM issues like dry land salinity, and had no extensive horticulture. So these definitional issues were added to NRM as a ‘bigger thing’ (interview) a more comprehensive and universal abstraction. The participant continued: ‘They just kept on feeling that they were different and I didn’t like that perspective’. The management was always wanting to portray Perth Region NRM as ‘different and potentially above’ the other regions and ‘wanting to set up a national peri-urban group’ [and] ‘have this regular discussion as to why they are different to other NRM areas’ (interview). Another official thought that it *was* different to the other five regions as it *was* peri-urban, but nonetheless, waste management was not NRM. Participants thought about NRM in surprisingly different ways. Six considered it specifically as ‘community’ or ‘a kind of democratic citizen thing’, eight if a specific reference to ‘farming’ was included, nine if the money was going to ‘the community’ rather than the state; ten if the regional groups and integrated NRM, *not* Landcare and farmers were included.

Participants also thought about NRM in other ways listed below. The number of participants is shown in brackets. Quotations are from interviews and there was some double counting.

- ‘NRM stuff which happened at a wide range of scales’ (1)
- ‘all the various facets of NRM’ including practitioners and environmental management’ (1)
- institutional and intergovernmental relations (3)
- on-ground works (2)
- on-ground environmental management and science (1)
- stakeholder engagement (1)
- political history (1)

- ‘it’s about partnerships with clear roles and responsibilities but centrally partnership’ (interview) as well as environmental management (1)
- project management of things done by volunteers rather than \$25 an hour employees (1)
- managing ‘the natural capital of Australia [...] as core business’ (1)
- just a name (1).
-

It was also about motivating people and ‘*changing their mindsets*’ (interview) where there was ‘evidence to show that a little bit of funding changes them’ (interview). In the peri-urban Swan region with a population of 1.6 million, changing mindsets was important by contrast with more direct change of *practices* in rural areas. Paradoxically the less rural and on-ground, the more collaborative the ‘mind set changing’ would need to become. Perth Region NRM was thought to be doing NRM in the wrong way by being *too* collaborative and having an excess of people on the board; through the system of reference groups; having a multiplicity of small projects; and in being overstaffed. When overstaffing was raised, I didn’t ask participants what the right number *should* be as these ‘how many’ questions can be revealing, especially after my mistaken estimate of its size.

It was being done ‘*bottom up*’ and was contrasted with conservation which was ‘more scientific’ (interview) and done ‘top down’. Hicks (2006) also distinguished between science together with ‘orthodox management issues’ (p. 14) and NRM as ‘*a form of social contract, collaboration*’ (p. 14) without favouring one or the other as each had its uses.

Perth Region NRM was from the first dedicated to community participation and both they and others thought it had been successfully encouraged. However, they and some other regions were thought to have:

Kept that philosophy that NRM was about the local groups and state agencies weren’t involved and they weren’t supposed to be involved’ [...] and they were confusing community based NRM with NRM *the bigger thing*. (interview, my emphasis)

Note the bigger NRM. Another participant said:

The regional groups were getting a lot out of it, more than the money that the Commonwealth was putting in. And as I said there was that networking, and people feeling part of a *bigger thing*. (interview, my emphasis)

NRM now involved two sorts of ‘bigger things’ one with less community and one with more. A third ‘big thing’ differentiated ‘little things’ important to people nearby.

And that’s the *big thing* they’ve got to realise that they’ll lose pretty quickly. If you lose the connection with community groups and particularly the volunteer type ones, you know the next level down. Now the board and that sort of thing is just one thing, it’s what’s under that and the groups that’ll beaver away but they need, you know, they need money to do the things they want to do. Because they’ve got the passion to want to make a difference in their own little patch and yeah if you lose that [...] then it won’t take long for those groups to fall away and they’re very difficult to build up again. (interview, my emphasis)

The *passionate* community groups concerned with their ‘own little patch’ were a *feeling* NRM, simply located. They hindered meetings.

We were actually, we would physically it would appear we often sat physically sat on different sides of the table so the government people [adopts different tone] sit here and all the passionate impassioned [...] community groups were sitting on that side, and they were just, you know saving *that lake was the most important and only thing, there was nothing else to save* until the lake next door to it within their, their walking distance area needed saving and then that would be the only possible thing as opposed to a more considered view that well, you know, maybe there are other things to save. (interview, participant’s emphasis)

The participant said that he did not live near the lakes. Perth Region NRM thought that it had resolved this problem with its nesting of reference groups which were tasked with getting things done, and I infer that it was the *doing* of specific *tasks* which fostered cooperation. Rather than examining motivation, the ‘how’ was stressed. The interviewer is shown in italics.

When you say ownership to what extent was the um, um, fact that people in the area knew about things important?

Very important. Absolutely, and also it was about getting a consensus. It was about getting people to realise that although something in their patch was really important in terms of the region, there were some other things that were important as well and how they could contribute to assisting with that.

And it’s *worked*. After three years I think people are starting to look at across the region at what is important and how can we do that together. (interview, participant’s emphasis)

There was a *financial* performance of NRM. Should the state have any of the NHT2/NAP funding at all because ‘NRM was about community’ (interview) and state agencies didn’t *do* NRM. NRM effort by regional bodies was however only the ‘tip of the NRM iceberg’ (Hicks, 2006, p. 15) with about 85 percent of the effort occurring through the state, local government and industry, that is, another even bigger thing, ‘core business’.

A participant from Perth Region NRM estimated that total annual expenditure on NRM in *that region* by state and local government was \$A420-450 million compared with the Commonwealth's \$A2.3 million at that time. Taking into account expenditure on environmental conservation, fisheries, forestry, waterways and aquifer management amongst other things, based on Department of Treasury budget papers, state expenditure on NRM totalled about \$A750 million annually. If state corporations such as energy suppliers and the Water Corporation were included, total expenditure was about \$A1 billion. This figure excluded private enterprise and local government expenditure. By these accounts few seemed to be taking much notice of the biggest picture of all.

A participant queried why the 'deeply entrenched mythology' persisted that the total of NRM funding in the state was Commonwealth money with a matching increment of state funding. The arguments about regional overstaffing and so on were a distraction from getting the best return from integration of state total effort. The subsequent allocation of \$35 million to the surviving regional groups continued with it (see <http://www.nrm.wa.gov.au>).

The six regions actually got \$235.3 million over seven years or \$33.5 million annually, less than five percent of the estimated \$750 million state expenditure. Of the \$235.3 million, \$85.7 million was contracted to state agencies for work on regional priorities. Of the \$441 million in cash funding from both state and Commonwealth governments (State Natural Resource Management Office, 2010, p. viii) \$57.4 million (13 percent) was allocated solely to state administration, presumably in addition to any state budgetary appropriation.

Hicks (2006) enunciates something like a state position in a set of NRM 'principles' (p. 14) to be used: 'In mapping a future for those human activities' (p. 14). As mentioned above these are separated from science and management which do not appear in the principles.

- NRM is important and, in many cases, urgent
- NRM is evolutionary
- NRM is characterized by highly consultative, community involvement; Partnership, public and private
- NRM crosses boundaries; it crosses orthodox divisions between private and government responsibilities, across various levels of government, and across many government agencies
- NRM offers significant urban challenges; it is not just an "issue for the bush"
- NRM is about actions/outcomes, not documents/processes
- NRM requires simple accessible structures

- NRM requires clear accountabilities
- NRM needs WA to be clear about State role & responsibility. (p. 14)

This list includes some further general and specific instances of a matter of concern.

An unmentioned performance of NRM central to ‘those human activities’ concerns moral notions. ‘So much of NRM is based on trust’ (interview) prized by two regional groups (Johnston et al, 2006) and ranking high in a list of variables associated with farmer adoption of conservation practices (Marshall, 2009a). Marshall (2009b, p. 45) refers to ‘vertical trust’ which seems to act as a stabiliser of connectivity in relations within smaller groups in a hierarchy. In turn there is a question about these groups’ ability to rely on higher levels in environmental governance as subsidiarity or nesting of levels of units.

Theoretically Hick’s list of NRM is an abstractive hierarchy, a class of classes, or a ‘collecting statement’ (Latour, 2005) for example ‘this is a free country!’ or ‘development’ as a figure of modernity (see p. 232). Collecting statements trace new connections and ‘offer highly elaborated theories of what it is to connect’ (p. 232). With hindsight, Latour used them to include eternal objects in a simple way. Thus NRM as a potential offers different theories of connectivity between non-humans and humans such as government and citizen, ecosystems and money. Each NRM above offers a description of ‘how the social worlds should be formatted’ (p. 232) that is, a different instance of ‘NRMness’.

Hick’s list attempts to represent NRM and caters to different groups and anti-groups within it. Perth Region NRM ticks the list’s boxes as ‘doing’ NRM, the more so because of the extensive community involvement.

Last, a person identified with party politics thought that NRM was a ‘Liberal Country Party word’ (anonymous, personal communication, 28 October, 2009) and that ‘Landcare’ was ‘a Labor word’ with each statement collecting a political performance of NRM. It will be recalled that Landcare was originated by a Labor Premier in Victoria. ‘Caring for our Country’ as the program title may be the result.

Collecting statements mobilise. ‘NRM’ mobilised people and objects such as the Australian Labor Party because it is ‘messy’ enough to allow all the instances while retaining its recognisability, even, or especially, if disputed. It collects the social but may lapse back into an

intermediary once it becomes a matter of fact, something enduring which does not need to be noticed.

That there should be argument about what was and wasn't NRM was particularly interesting because it is a phrase in good currency, ostensibly singular and capable of being defined. Like adaptive management, it was contradictory. Perth Region NRM undertook riverine waste management when tree planting and tending to iconic sites was real NRM. By analogy with Mol's sliced and bombarded object, it is suggested that management of small business waste under contract performed an inscribed river, but tree planting in parks performed an Arcadian river, different realities, side by side. NRM also excluded the totality of the state conservation and natural resource expenditure by not counting non-farm industry and that of state government itself, restricting its potential.

Summary remarks

Regional strategies and 'NRM' are Whiteheadian societies, that is, 'complex routes of occasions exhibiting some level of conformity as each reproduces and confirms a way of feeling, of achieving its own identity, as proposed by the particular social environment it inherits' (Stengers, 2008, p. 104). Unlike a regional strategy, there is no NRM object but it too endures. They bootstrap but do so in a specific manner which holds together, however irregularly, like ALD. To repeat: 'Societies are their own reason just as actual entities are' (Halewood, 2011, p. 87) which an actor-network sensibility may follow.

ANALYSIS III: 'LIFE IS ROBBERY'

Introduction

The quotation is from Whitehead (1929/1960, p. 105) and refers to prehension or grasping or feeling which comprises an actual entity, constituting its process of becoming, its act of experience. To repeat:

'Feelings are "vectors"; for they feel what is *there* and transform it into what is *here* (PR, p. 87, emphasis in the original). It is in this most literal sense that 'life is robbery' (PR, p. 105)'. (Halewood, 2011, p. 31)

The researcher sometimes *is* felt by the world. There are 'moments when investigation turns to adventure (to borrow from Whitehead) and the "creative" incorporates the activities of the researcher far more dramatically' (Halewood & Michael, 2008, p. 44). I have related two instances when, and because, I realised what was happening. The first was through diagramming. The second was the following little instance when the ordered interview flow was

disrupted for a time by the participant's intensity about the prescriptiveness of targets for Caring for our Country grant eligibility; the ringing telephone; the documents; and a tiny brown blob on a map which *engaged* me. I had to keep up as these took over.

Michael (2004) describes how a 'pitpercat' came between the interviewer and a good interview. The pitpercat comprised a pit bull terrier which sat on his feet terrorising him, a cat playing with the tape recorder which he could not attend to because of the dog, all of which mediated—Michael following Serres (1982) uses 'parasitized' (p. 14)—the relations between the interviewer and the person in a novel way for an interview.

This is an example of coordinate analysis (Halewood & Michael, 2008) of the moment of completion of an actual occasion, or its concrecence. Michael refers to the prehensions comprising the concrecence—for example, feet-pinning dog—as co(a)gencies rather than as hybrids, although Halewood and Michael refer to them as hybrids.

Coordinate analysis conceptualises the coming together of actual entities in an 'event' (Latour, 1999a, p. 153 and p. 305), such as the diagramming instance. The co(a)gent is an analytical device which distributes agency. The pitpercat is both single (a society) and multiple. Singly this society of the interviewee, her pets and possessions disciplined the researcher who botched the interview. Michael also refers to the reverse, namely how singular entities such as the cat, the dog and the two people are derived.

These are valuable because of their ability 'to illuminate otherwise hidden processes' (Michael, 2004, p. 10) in a way my thesis hopes to do. They then become propositions themselves between the reader and the researcher.

A moment of concrecence

'You might have noticed it's all over the desk'. 'It' was information available from the Commonwealth Government for grant applications for the new program Caring for our Country. This sentence sounded odd as Caring for our Country to me was some big vague thing 'out there'⁶⁰ (Law, 2007b, p. 599) rather than sheets of paper, nonhumans spread out on the

⁶⁰ Law (2007b) refers to 'out-there' and 'what counts as out-there' (p. 599) in social science research. Out-there could be simply reality beyond ourselves, something like Whitehead's extensive continuum, and nothing more. This out-there is not necessarily the same as a single, shared reality out-there independent of us about which we may have different *perspectives*.

participant's desk for examination 'in here'. The desk reminded me of the tables supporting data for scientific scrutiny and cross reference in the translation/transformation of the Boa Vista forest. The nonhumans' brief and stunning appearance summoned *my* notice that all this was going on⁶¹.

The participant is preparing an application, which if successful, will enable grant funding to purchase more staff and equipment for conservation. If Western Australian endangered species fall into a designated 'threatened ecological community', they will have a chance to expand their alliances and persist a little longer by becoming more articulable, with more attention paid to them by more people, becoming more credible, rather than being 'mute, unknown, undefined' (Latour, 1999a, pp. 143-144).

The telephone kept ringing on call back: 'Stop doing that' he said to it. He remarked that in the very early days of NHT there were again discussions with Commonwealth representatives to find out what the priorities were and to clarify rumours and opinions heard from an NRM group, or a community group or within the agency. The difference was that this time the Commonwealth was providing and administering the grants and for NHT2/NAP it was the regional bodies.

Contact with Caring for our Country representatives was infrequent so for example a primary contact was seen every month or couple of months for a few hours and a talk for 'five seconds' (interview) and that was all. Personally the relationship was fine but he spent an awful lot of time working on applications. 'I mean, trying to interpret what they've written is part of the relationship. And that's it'. It was a 'remote exercise' with documentation said to be the 'main evidence' of Commonwealth thinking and 'second-guessing a way of life' according to a couple of participants. The documents were in this instance the actants, the mediators perturbing the interviewee who said he was frustrated by them. They were an event which disrupted the smooth flow of transformation/translation of the conservation of threatened ecological communities in the tiny brown blob of eligibility on the map of Western Australia which hung on the wall to my right.

⁶¹ The research timing was also opportune as interviews were done at program inception when the modification, transformation and perturbation caused were maximised.

The brief discussions and the documents are, to repeat, ‘occasions given to different entities to come into contact’ (Latour, 1999a, p 141, emphasis in text), that is, propositions. These are tentative and might not *be*. If the targets were so obscure and not relevant or important to any of the agency’s business, then they would ‘chuck our hands in and walk away’ and the participant would ‘get all his time back and be able to go and do [his] own work’. It made a difference. The documents were remote and just about the only occasions for prehension to occur, together with limited personal contact. Commonwealth representatives *might* have the answers to the many questions people had, but either weren’t allowed to tell or they might not even know the answers themselves, he said. There was still a lot to be worked out in the rapid change to Caring for our Country.

There were phases in this story of mediation (Latour, 1999a) or sensemaking (Weick, 1995). Early in NHT2 there were discussions with the Commonwealth representative about what the priorities were. The targets at first were described as the subject of rumours or opinions which required checking. With Caring for our Country there was this phase (Ingold’s quite simple *mapping*) and then there were a few months of second guess questions (cartography).

A few weeks before this interview, there was another meeting when the emphasis was on meeting the targets, which were ‘very, very explicit’. He continued: ‘Just the targets. The targets are it and everything else is *out* [interviewee’s emphasis].’

Developing the application was an event involving careful questioning. The answer from representatives was usually the same: ‘Yes you can put it in’, never, ‘No, it won’t get funded’ or ‘No, don’t do that’. It was suspected that this approach meant that the Commonwealth could scrutinise the applications when they came in and fund those that were well argued, and other considerations along those lines. At the same time, the targets were narrow, which was interpreted as being ‘able to put *anything* you want but if you don’t meet a target then it isn’t worthwhile’ (my emphasis). It appeared that the Commonwealth representatives didn’t actually *say* not to put in anything that wasn’t a target but after asking the same question in four or five ways it ‘*became obvious* that that was the case’ (interview, my emphasis). Navigating had begun.

‘Once you get that idea you can understand what the guidelines are actually saying. It then becomes very clear what you’re meant to do even though they are not telling you what to do’ (interview). The targets which had *always* been there gradually were transformed from ‘matters

of concern' to 'matters of fact' (Latour, 1999a, p. 151) by assembly of a series of attributes. 'Occasions allow the entities to modify their definition over the course of the event' (Latour, 2005, p. 114). The targets were modified by repeated questioning until they *became* a matter of fact, a substance, 'obvious' and stable.

But wasn't this a simple case of administrative hermeneutics? No, because the man was modified too: he was 'frustrated' until 'it' became obvious, a better articulated proposition in Latour's sense (1999a, p. 303). The gap between words and world had been crossed not in a jump but in a sequence of mediations. First 'rumours and opinions', then 'second guessing', then the 'very, very explicit' realisation of how to turn the brown blob on the map into targets and then into on-ground activities to conserve less endangered species in ecological communities rather than isolated stands of critically endangered species.

It may be asked how the man was guided in his questioning. Lurking in the targets is the problem solved by Whitehead's eternal objects through two forms of a logical variable, the unselective 'any' and the selective 'some'. Getting to the understanding where it became obvious that grant applications should only focus on the targets, needed some idea about 'targetness' that guided him along. But targetness (any) is not only an eternal idea but performance of an object (some) which became realised through questioning.

There is another more common sense application of this ontology. It has been argued with some success that policy formulation is likely to be incremental using a method of successive limited comparisons, as 'muddling through' (Lindblom, 1959, p. 81)⁶², or bootstrapping. The new

⁶² 'The science of muddling through' (Lindblom, 1959) is a public administration classic but 'muddling' is misinterpreted as lack of purposive adaptive management (Stankey et al., 2005, p. 8, Allan & Stankey, 2008). Lindblom proposed incrementalism as an alternative to large scale, scientific systems analysis and operations research in public agencies because political and legal constraints restrict agency attention to a few policies and relatively few values, rather than countless alternatives. Furthermore, evaluation and analysis were intertwined in public policy. Values (say good urban design and clean air) are chosen together with policies to achieve them (more public transport and fewer roads). If values cannot be agreed, policies might be: liberals might like the public good aspects of the proposed train line and conservatives the real estate spin offs. Specific proposals may be agreed when general criteria cannot, the crux of Shergold's argument outlined in Analysis IV.

Agreement is the 'only test of a policy's correctness' (Lindblom, 1959, p. 84). Major political parties agree on fundamentals and offer similar policies reflecting public attitudes. Hence administrators may not offer 'politically impossible and so irrelevant' options (p. 85).

Lindblom did not suggest that incrementalism was the only decision strategy in an increasingly pluralist world but neither did he anticipate political status quo bias and rejection of any decision at all (Atkinson,

matter is aligned with the older form, in the manner of the sciences if Latour is correct about these. Bureaucratic decision making claims the same stability by using the same approach in routines or bureaucracy proper (Hummel, 1991). However as previously noted, for successful application of the policy entrepreneurship version of governance stemming from Osborne and Gaebler (1992), public officials require ‘a high degree of initiative, competence and independence’ (Self, 1997, p. 18), as just described. It is more risky and they apply more discretion—jump—without stabilisers. Like the laboratory sciences, supersession of the settled order could result in agonistic settlement of the yet unsettled (Latour & Woolgar, 1979/1986).

Intuition

The participant applied his intuition and so did I much later, realising that I had been part of a moment of concrescence. Stengers (2008) writes about Whitehead’s intuition: ‘There is a difference between “having understood” and these occasions when you feel the precariousness of your grasp, its readiness to disintegrate, or the beginning of new intuition, or something that was not there before’ (p. 106). The participant described these phases of rumours and second guessing and then it ‘became obvious’ and came-into-sight (Chia & Holt, 2009). It could just as easily have faded away.

The ‘primary value of Whitehead’s argument’ is that it ‘may modify our relations to our own experience’ (p. 106). Learning, a name for this modification, starts with disquiet and ends when we have discovered ‘what it “is” that we want to get’ (Todes, 2001). Phasing from tenuousness to settled modification of experience, is found in both Ingold (2000) and Bateson’s levels of learning (1972). Oddly, Bateson is more enthusiastic about the experimental dolphins’ trials and triumphs in Learning II than he is about the noon time whistle signaling lunch in his example of habit (Zero Learning). He takes for granted the centuries of effort which established universal time, not neglected in navigation.

Both navigation and habit have in common relative stability or less error which could be used to resource other activities, or further learning, with the chance of more error, when as the participant put it, they would ‘chuck our hands in and walk away’. The danger is that entified

2011). Agreement on incremental changes in budgeting enables contentious government rationing decisions to be made, relatively uncontroversially, year after year (Good, 2011).

Rittel and Webber (1973) shared some of Lindblom’s concerns and proposals but differed on other points in their ‘wicked problems’. Adaptive management has been described as ‘wicked’ (Allan, 2009) and these relations could be theorised further.

thinking takes habit for granted as something that will stay put while process thinking realises that habits need to be maintained.

The participant's experience was modified as he became a negating grant applicant and so was mine. Stengers describes the 'settled ground which permits the communion of intuition that we call meaning' (p. 108). The participant reached this settled ground by first learning to learn the subtleties of questioning his counterpart without infringing their rules (Learning II) in order to then understand the documents (Learning I) and then settle in to writing grant applications.

I learned from the interview (Learning I) but it took about a year of seeking connections from this new process metaphysics, to understanding, with an interim period of knowing it but not quite getting it, distinguished by lack of facility with the vocabulary and the idea, and inability to make connections. I certainly would not have realised the significance of this data without repeated efforts to get the transcript right, and a better understanding of Latour's work. These actants, transcription and texts, enrolled me. There was something in the participant's story which was quite simply not there before. Later there was even more as co(a)gency between the map, the persons, the documents and the phone. The interview became a nugget and I became a researcher able to feel concrescence and not just think it.

This little example exemplifies another Whiteheadian insight. Each local/material occasion is in the whole world and vice versa (see Figure 2). 'To focus on the small, however seemingly trivial, is thus to entertain the profound' (Halewood & Michael, 2008, p. 44). Instances like this one were perhaps the truest part of being a researcher.

Summary remarks

This description instances a proposed aggregation of locality/materiality into relative universality to perform the new Caring for our Country program. The official has to understand this, which can't be made explicit, in order to select the right local/material activities and align them into a potentially successful proposal. There was the question and answer data (Learning I) but attention to off-question data disclosed otherwise hidden processes (Learning II). Officials have to 'jump' and use second guessing or Learning II, a long way from the flick and tick of bureaucratic stereotype and more towards Self's intelligent public servant (1997).

Robins et al. (2011) propose team building and development of shared values and goals by officials which in this example of intergovernmental relations is remote. He wants information and can't be given it because all grant applicants need to be treated equally. To some extent it seems to be overcome and indeed instantiated by skilful semaphore.

In the next chapter NHT2/NAP is examined as an example of relatively universal policy, but with a tip of locality/materiality in it, as a route of reported actual occasions from the Council of Australian Governments. The presentation reveals the work done to perform the policy and some unusual aspects of the Australian federation of sovereign states.

Chapter 8: Analysis IV

INTRODUCTION

Whitehead uses the term 'society' to describe that which is 'self-sustaining; in other words, that it is its own reason' (1929/1960, p. 137). Societies cohere and become societies through what he calls a 'defining characteristic' (p. 137), shared by the society's members and due to the environment of the society itself. This defining characteristic is 'inherited from occasion to occasion along the [society's] historic route' (p. 137).

The translation of the Boa Vista forest by scientists into an academic paper by scientists and then Latour's description, constitutes a society from the first measurement until circulation of the publication, and beyond. It has 'an element of order [in it which is] the order prevalent in the society' (p. 138) and 'provides for each of its members, an environment with some element of order in it, persisting by reason of the genetic relations between its own members' (p. 138). In Latour's terms, an actor is a network and a network is an actor.

The genetic relation is enhanced, or even constructed by scientific equipment, step by step, as 'forestness' while still present, diminishes, and 'inscriptiveness' and relative universality increases. Whitehead puts it like this:

Every society must be considered with its background of a wider environment of actual entities, which also contribute their objectifications to which the members of the society must conform. Thus the given contributions of the environment must be at least permissive of the self-sustenance of the society [...].

Thus we arrive at the principle that every society requires a social background, of which it is itself a part. In reference to any given society the world of actual entities is to be conceived as forming a background in layers of social order, the defining characteristics becoming wider and more general as we widen the background. (1929/1960, p. 138)

The last crucial paragraph encapsulates Latour's translation/transformation and Bateson's learning and 'sphere of relevance' (1979/1958, p. 215). A society is in a relation with the wider society or sphere of relevance, to repeat in 'layers of social order', the characteristics of which become relatively more general as the background is widened. Participants called this 'the big picture', Latour, a 'panorama' (2005).

In the following I have described translation/transformation of NHT2/NAP as an endogenous process modelled on Latour's Boa Vista forest example, and the chain of care (Lindberg & Czarniawska, 2006). A tiny amount of NHT2/NAP is described from its relatively universal

source in COAG to short of on-ground. Reference is also made to the translation/transformation from locality/materiality back to a centre of calculation, the ANAO. Data was derived from documents and my research interview questions about relations, from political inception to a stage short of on-ground application. The description is weighted towards senior officials and members of Perth Region NRM, including volunteers and *ex officio* members because of the sampling.

Policy does not come ready-implemented. As Latour says often, connecting chains of translation are fragile—ontologically labile—not recognised sufficiently or at all in program evaluation with the tacit expectation that history can be made to order. The chain of care was a successful translation of a successful public sector joining up, which the authors say is rare, despite the rhetoric of collaboration. Even more special, the chain of care later became a program, the model of cooperation. Joining up is difficult.

In this chapter some taken for granted terms, namely ‘levels’ and the ‘big picture’ will be examined. Some participants used these words frequently and I hoped to find out about how they were performed. Unlike the IUD, there are no levels ready-made but they are cut out of experience as organising entities, as Latour’s localisers (2005).

In the governance literature on federations, levels are said to be hierarchical and horizontal. ‘Shared policy responsibility may *exist* horizontally, across agencies at one level of government, or vertically, across levels of government between agencies with either overlapping or distinct functional responsibilities’ (Mullin & Daley, 2009, p. 758, my emphasis). Knowing how these vertical relationships work is ‘critical’ to understanding devolution of ‘federal policy responsibility to state and local governments’ (p. 758) in the United States and also Australia (Lane & Robinson, 2008) where there are ‘problems of *fragmentation* [which] are both ‘horizontal’ (i.e. across government and civil society) and ‘vertical’ (i.e. between different levels of government)’ (p. 28, my emphasis). Liaison ‘across’ groups in community collaborations requires ‘horizontal trust’ (Marshall, 2009a, p. 45) while a hierarchy based on the ‘nesting principle’ (p. 52) requires ‘vertical trust’ (p. 45). Levels exist and need joining up, by trust for example. Levels are not curiosities but express relations of extension.

Intergovernmental relations between the states and the Commonwealth are ‘notoriously opaque and hard to access for the public, with conventions of secrecy and bureaucratic habits of confidentiality dominant most of the time’ (Painter (1998, p. 71) cited in Botterill, 2007, p. 187).

What is on the public record is not the energetic interaction of a Latourian account and is cut short.

Participants described unique situations, unknown to most. For example, the different personae of the states were described and evidenced by a few predictable behaviours. Other situations were surmised as ‘government’, which like Whitehead’s ‘unseen flora of Brazil’ enabled people to think about it as a vague background, ‘made partly definite by isolated activities of thought’ (1916, Part 2, unpaginated). NHT2/NAP brought government and flora together and it was up to the participants, amongst others, to make an enduring chain of translation/transformation.

Relatively few public servants work in intergovernmental relations connecting behind the scenes. They report to different employers and retain their own professions, as with the model of cooperation, but their job is to join up. Comparison with strategic alliances in organisational studies could be fruitfully applied to public administration in this case.

Perceptions and performances of the relation between Perth Region NRM and the other regions varied according to participants, from a creature of the state, to a paradigm of community consensus and devolution of power which did not have time to mature in its four year existence. Perth Region NRM wanted it to be *more* of a partnership.

Where to start is important in actor-network theory, chiefly I think because the interest in extensive abstraction is in the middle as mentioned above. Latour starts at one end—locality/materiality—rather than the other, relative universality, in his translation of the Boa Vista forest. He refers to these ends as ‘upstream’ and ‘downstream’ (1999a, Figure 2.21, p. 70) with a nod to Waddington’s chreods (1977), or ‘necessary paths’. However he cleverly observes that despite the ‘pioneering quality’ (p. 32) of the expedition into the forest, the translation of world to word was not *de novo* because sciences are already there so he is already in the middle, ‘in media res’ (2005, p. 196). He takes advantage of the temporal grain first as the research precedes the published paper, and second to demonstrate that the chain is fragile and the paper may never eventuate.

The researcher is inevitably in the middle of part of a chain of events which extend back and will extend forward. Analytically however, there is a grain in description which determines what happens as discussed in Chapter 5. Footnotes for example are handy read one way but not if

transposed from an end directory to the text where a reader searches for '12' say, especially if they are in the middle of it. Each numbered stage is identical but ordered.

There is nothing bigger or smaller or up or down in Latour's Boa Vista forest presentation in which the diagrams are presented sideways as a gradient, reading left to right, rather than vertically as a hierarchy. Lateral presentation possibly defuses dominance (see Lakoff & Johnson, 1980).

Latour has sound stylistic and experimental instincts. He started describing the transmogrification of the Boa Vista forest at the on-ground end. The grain seemed to me to be going the other way, from relatively universal, starting with COAG, so that is the order I chose, with some reference to the reverse, notably the accounts but it could just as easily been otherwise. In any event there will be some of each end in the other.

In early deliberations, I randomly chose five statements from answers to the question on adaptive management in the 'organisational learning and improving' group (Table 9) which I thought indicated the 'middle' based on an implied sphere of relevance. The identity of each was unknown as the interview number identifier was lost in tabulation. The procedure was misinformed but it upset my expected response of state participants being in the middle of Commonwealth and regional participants rather than a hybrid of attributes such as rank, organisation, contact and experience. So I commenced analysis with these interviews and extended it from there using what each participant said about relations throughout the interview, and not only in the pertinent questions.

The metaphysics of naïve realism may be biased towards the incremental which I then proceed to find. However the same applies to the two other branches of Weik's metaphysical tree, materialism and idealism. 'Social theories [are] logically dependent on their metaphysics (as conclusions are on premises), [and so] cannot avoid or solve these problems' (Weik, 2006, p. 3).

Each beckons different kinds of thought. Thus levels are an abstraction, not reality, inviting joining up to overcome fragmentation but embodying the common sense intuition of something more enduring. In endogenous connectivity, translation is better or worse, and fragmentation expected, as networks are fragile.

It may also be argued that I used the interview material selectively. My attention to objecting objects and use of counting goes some way towards data justification. However, research based on actor- network theory is inevitably partial as the network is made by the researcher (Ruming, 2009), an advantage for exploratory research as the researcher is reflexive, and more attuned to questioning connections and assumptions, as well as taking more initiative. I have demonstrated that the material was actually said, well-translated, and minimally interpreted, that is, valid.

THE HEADWATERS OF FEDERAL REFORM

The Council of Australian Governments (COAG) is ‘nothing more than just a meeting’ of the Premier or Chief Minister of each state/territory and the Prime Minister, according to Paul McClintock, chair of the COAG Reform Council from 2006-2012 (Kelly, 2013). McClintock observed that it tried to become a major national agency to run complex policy. NHT1 was the first Commonwealth major entry into constitutionally state environmental matters. Western Australia was defensive evidenced by one term of reference of a review into state NRM, namely ‘protection of the State’s constitutional responsibility for land, water and the environment’ (Hicks, 2006, p. 5). Later some other state’s agencies balked at Commonwealth officials dealing directly with regional bodies in NAP (ANAO, 2004-05, pp. 22-23).

McClintock regarded COAG as dysfunctional resulting principally from lack of a national discussion about the federal system for 30-40 years and no clear statement on federalism from either major political party. He amongst others, ask if it is time to consider a different system for the Australian federation taking into account the increasing dominance of the Commonwealth over the six sovereign states. These strains are clear in what follows as they affect the translation/transformation of national policy.

Research on the two committees responsible for the implementation of the National Heritage Trust, namely the Primary Industries Ministerial Council (PIMC) and the Natural Resource Management Ministerial Council (NRMMC), concluded that they were no more strategic than they were a decade before (Botterill, 2007). On many issues they were ‘less capable of addressing major policy questions’ (p. 186), despite COAG efforts in 2004 to improve the strategic focus of all ministerial councils. Strategic, long term, industry issues were not considered or founded. McClintock said that as ‘COAG has become dysfunctional then everyone gets affected by it and everyone approaches it in dysfunctional ways’.

From 2003-2008, Professor Peter Shergold as Secretary of the Department of Prime Minister and Cabinet had first-hand access to intergovernmental meetings during NHT2/NAP. In a radio interview (Kelly, 2012) he described COAG as ‘like this giant iceberg and what we see in the media is just that little bit above the surface’, usually a four hour meeting of the leaders ‘often preceded by a “fix it” dinner the night before’, then a press conference and a communiqué (Kelly, 2012). In the following all quotations are from Shergold’s interview except where otherwise noted.

Very often a COAG will gloss across agreements. They will call it national consistency or harmonisation. What that means is that you have an in principle agreement and it is then left to ministers and bureaucrats to essentially negotiate with each state outcomes which are as close as possible to something that looks like a national agreement.

This in principle agreement is passed along the line IUD-like, as that which makes negotiation possible by retaining the form of an agreement while allowing the material to be worked on.

The iceberg’s bulk is this ‘extraordinary plethora of bureaucratic structures’ comprising 24 councils each with its secretariat and a public service committee usually divided into three or four subcommittees. Much of the discussion takes place behind the scenes with Ministers and Commonwealth public servants ‘taking it forward step by step’. Translation appears to be difficult, expensive, slow and occult.

Shergold said that his strong view was that these meetings were ‘most successful when you move down from the high language of a national reform agenda or of a competition and regulation reform and actually get to specific details’. There were always ‘specific bite size chunks of reform’ which could be passed along through the iceberg, which starts to connect the national to the local. Responding to the interviewer’s concerns about the ability to muddle through two major proposed reform programs as he had suggested, he instanced a new program for Type 2 Diabetes. Agreement is all.

What I am saying is that very often the successes that follow are if you can break that strategy down into its constituent elements where it is in the interest of both the Commonwealth and the states no matter what their political party affiliation, to come to an agreement.

Achieving a national approach in a federation is difficult and it is necessary to find shared positions of interest between the Prime Minister and the heads of government ‘There are things that unite Premiers regardless of party affiliation and things which divide them’. At the time of NHT2/NAP and Shergold’s tenure, the Premiers and Chief Ministers were Labor and the Prime Minister and federal government were Liberal.

'In a way what you see through the whole COAG process is public administrations muddling through to an outcome. Sometimes it is successful; sometimes it can be remarkably slow'. Shergold said that even on big reforms an incrementalist approach is possible and that is in effect what COAG usually does. He said that a 'rather grand' announcement when examined six to twelve months later by the COAG Reform Council, often has achieved significantly less than the original declaration. This is because what essentially happens is that public servants and ministers are slowly taking the process forward, and 'then implementing the decisions taken' (emphasis in interview), step by step. The relatively universal statements of the ministers and Prime Minister are translated/transformed into something more material and do-able by successive abstractions or endogenous connectivity. 'Muddling' or disjointed incrementalism could be examined further in public administration theory as network self-production enabled by quite simply *mapping*, jeopardised by disruptive conflict and disagreement. In actor-network theory terms, incrementalism is not bumbling but essential, as 'not jumping'.

Interviewees in Botterill's research said much the same as Shergold. Decisions on the 'really big' (2008, p. 191) strategic issues such as NAP tended to be taken outside the NRMMC with the Prime Minister setting core parameters through COAG, or Shergold's in principle agreement. The council then handled the details of implementation. Botterill states that the NRMMC's role was 'implementation of parts of the agenda rather than policy development' (p. 191). She seems to equate policy with the high language of COAG, which however, would go nowhere without the iceberg. Federal officials, described as a 'Commonwealth "industry"' by one state interviewee (p. 192), regarded the councils as rubber stamping issues generated at departmental level and agreed by standing committee. In other words, officials developed it.

The grand rhetoric is the collecting statement which suggests 'how the social worlds should be formatted' (Latour, 2005, p. 232) as the potentiality or form for the particular activity, like the chain of care or model of cooperation (Lindberg & Czarniawska, 2006). Policy is developed and decisions seem to be made somewhere else because they aren't made entirely by the decision makers but also by a production line, step by step, through carefully constructed relations.

One of Botterill's interviewees said that underachievement in tackling issues by PIMC and NRMMC was because political issues were often 'too hard' (p. 191). Another thought that COAG was a more political forum and so was 'better able to deal with "grey" areas particularly those which are constitutionally messy' (p. 191), the Commonwealth entering state domains for

example. It would be interesting to know what happens to the issues that fall between the ‘too hard’ and the ‘rubber stamping’.

The states were lukewarm about the COAG process, with limited capacity a contributing factor. One state representative referred to Ministerial Council meetings as a ‘part time activity after the real work is done’ (p. 192). State participants attended the council meetings but didn’t think they were crucial to intergovernmental relations. Although more recently, Western Australian Premier Barnett expressed surprise at the number of COAG meetings—five in the preceding 12 months—and the time and effort in Commonwealth/state relations spent ‘dealing with practical issues’ (2009a). He observed that meetings were not a political forum. He was the only Liberal there.

Echoing Shergold, Painter (1998) on intergovernmental relations observed:

There is a *peculiar mix* of mundane details and high principle so intergovernmental arenas are likely to exhibit forms of behaviour that swing unpredictably from unanimous and smooth agreement to rancour, threats and name calling. (p. 24, cited in Botterill, 2007, my emphasis)

Consequently Botterill suggests that again, ‘the broad direction can be easily agreed [but] the nitty gritty brings out differences’ (p. 193). However, she found that technical decisions were resolved amicably in agricultural policy-making while ‘the big picture issues cause difficulty and are increasingly handled at the level of COAG’ (p. 193). My research confirmed this to an extent: officials who were on national technical committees as well as on NHT committees contrasted amicable resolution in the former with sporadic conflict in the latter. However, negotiations between state and federal officials to include particular catchments in NAP were ‘contentious’ (ANAO, 2004-05, p. 13). It would be useful to know what exactly defined the nitty gritty for Botterill, but conventionally it refers to locality/materiality.

Painter’s ‘peculiar mix’ is sympathetic to Shergold’s ‘high falutin rhetoric’ and the chunking process. The essential and minimal appearance of locality/materiality as in a program for Type 2 diabetes, appears in the relative universality or big picture end and vice versa of an abstractive hierarchy. The observed peculiarity *may* result from comparison—Latour’s ‘jumping’—that is, juxtaposition of scales, without recognition of the translating work done by the chunks and iceberg in a complex route of actual occasions.

In Shergold’s description, the relatively universal text and rhetoric of the policy agreement becomes more local and material as it is translated. Harman’s example of the translation of

Arabian oil into a nectar comprehensible to an internal combustion engine, has as its counterpart, translation of COAG's deliberations into something comprehensible to the languishing islets of Langerhans in a Type 2 diabetic. Government as decision making and getting something done, becomes more visible and factual by this chain of mediations, translating a more complicated reality into a more manipulable one.

Decision makers, such as the Prime Minister, may be talked about as if there were some locality in which they sat and decided and then results appeared magically in some other locality. However, if Shergold's and Botterill's accounts are relevant, at least some decisions are made by this industrial process, intrinsic to which is the alternation between matter, the 'nitty gritty', and form, the policy. The odd metaphor of program *delivery* fits here too referencing the production line tailored (hopefully) to each site's requirements—more or less.

The perfection of these translation/transformations seems to be taken for granted. An instance was given by a participant in my research.

I get the impression that it [NRM] is sort of stop and start and short term.

It is. The greatest contributor to inefficiency in the NRM area is the short termism in that neither government will commit to something for more than a year or two at a time. You have this endless cycling of projects. Everything has to be new. [...] In the end, you blame the media and the public because there is no credit given for maintaining a good program. You only get credit for a new program.

Why is that?

That is a media and a public attention thing. You know just like, if there is a ramping of ambulances outside a hospital that's front page but if the hospital works perfectly for a year that is no story at all. (interview)

The passive intermediary becomes a matter of concern. Latour asks how this happens (2011). The surprise is that it doesn't happen more often revealing the importance of these unnoticed chain(s).

It may be asked to what extent this is reflected by decisions to remediate environmental matters of concern rather than spend to ensure functioning ecosystems continue. For example: 'The new NHT3, you know, the priorities are Great Barrier Reef, and Great Barrier Reef [sic] and Kakadu and we [Western Australia] are not in it' (interview). A non-Western Australian participant thought that there were diminishing returns to funding the Great Barrier Reef as it needed attention to stop pollution, but not necessarily funding. As Australia's premier natural resource

icon—and tourist magnet—under threat, he could see how a government would target it for assistance while the Western Australian Ningaloo Reef, also a World Heritage Site, was not threatened or visited to the same extent.

In search of the nectar of on-ground

‘NRM is visibly the child of the NHT programs in the early days’ (interview). The Commonwealth was not a major player in on-ground works to save biodiversity and maintain land and water systems until NHT as these are state matters.

Some participants said that these programs were principally to grant money to people to spend on remedial and preventative works and it still operated that way. Caring for our Country simply changed emphasis to Commonwealth priorities. The underlying reasoning was the same, namely ‘what governments do when they realise they can’t really solve the problem by the things they know they ought to do’ (interview) with environmental problems, they give them more money. But he continued, this does not change the ‘fundamental play of interest’ which could be achieved by regulation or changing the way the market operates. The leaky black boxes opened by putting some people out of business to prevent further marine pollution for example, stay shut. ‘You don’t change the fundamental play of those interests by funding people’ and so change is at the margin.

The program ‘has many owners’ and it would have been ‘extraordinarily difficult for the Labor government coming in, to have done away with it and done major things with it. [...] It hasn’t really transformed it in fundamental ways. It has really retained and twiddled at the edges, tweaked it’ (interview).

It has caused mayhem at regional level.

Of course it has, of course it has. Whenever something gets twiddled, there are winners and losers, so you don’t have to do much tweaking to create mayhem down there. (interview)

When asked what would be bigger than a ‘tweak’ the participant stated that in reality the program was still working on the same principles but ‘perhaps it was more than a tweak’. The difference was not on some Richter scale of administrative change but a change between consideration of particular, more material impact ‘down there’ (interview) and relatively more global and calculative factors. Similarly, Caring for our Country was regarded as ‘a more sophisticated version of NHT2 rather than a complete turnaround in NRM policy’ (Morrison, 2009, pp. 233-234). Another participant thought that the change was allocational with more

funding allocated to fewer projects—more locality/materiality—in the hope of a more assured outcome. A seemingly inevitable rationing decision between dispersal and concentration was explained as spreading Vegemite, Australia’s national spread, thinly all over the toast or thickly on one section of it. But: ‘We should be looking at the whole piece of toast, the way we want our future environments to be to support production and our quality of life and social well-being’ (interview).

The Vegemiting dilemma was said to be something to which science has no answer. Demonstrating cause and effect between application and outcome in NRM is difficult. Funding brought with it the need to demonstrate commensurate returns which has ‘bedevilled the programs not from day one but certainly from about day 364 onwards’ (interview). Late in NHT2/NAP state of the art performance stories were introduced as six pilot studies (Dart & O’Connor, 2009) mentioned above.

A participant said that the Honourable Robert Hill⁶³, who initiated NHT1 had a ‘marked preference’ that the money should go directly to on-ground activities otherwise it would be channelled into bureaucracy. If bureaucrats were given too much leeway they would have more committees and find out more about the problem rather than doing anything about it. ‘Protecting some bit of environmental quality’ (interview) was better than this alternative.

Hill had other aims. Green groups were vociferous and ‘bagged him in public’ which he ‘couldn’t stand’ (interview) and sought to defuse by making green groups beholden to him. The funded on-ground works busied them solving environmental problems. NHT1 spawned ‘a huge, low-level bureaucracy that has built up around these programs’ (interview) through the creation of regional groups and the infrastructure of the various local groups required to deliver the programs and acquit the funds.

Officials may not regard ministerial preferences as good policy. Their *duty* is to raise and then persuade the minister of possible alternatives. An example was given of a preference public servants thought poor policy but which they could not influence. Peers derided their inability to ‘rein him in’ (interview). ‘They lost all face’ (interview).

⁶³ Hill was Federal Minister for the Environment and Minister for the Environment and Heritage from 1996-2001. NHT1 ran from 1997-2002.

Minister Hill was thought to have been alienated by public service industrial action. 'He regarded it as an act of gross disloyalty I think' (interview) and relations with public servants became difficult. And from another: 'Politics in particular is very personal and if a minister feels that um one or other regional body is joining in with their enemies then...(made chopping motion on desk)' (interview). And again, the Western Australian regional bodies had advised the Commonwealth when a state minister had unilaterally allocated money which they thought was theirs. The minister was also reported to have been 'deeply offended and shocked' at their readiness to do this, as he had been very cordial to them. This participant described the six regional bodies as 'an agent of the state to help the state achieve its outcomes' (interview), less personal and more contractual rather than largely volunteers.

Minister Hill's on-ground emphasis achieved multiple aims, including possibly catering to rural constituents, traditional supporters of his Liberal/National Country Party Coalition. The Federal Opposition (Labor) challenged NHT1 in 1998 as pork barrelling in these rural electorates, a charge which didn't go away despite exculpatory findings from the ANAO (1998). Briefly, project submissions for a number of NHT programs went through a three step selection process. Regional assessment panels selected and recommended local proposals to state and territory assessment panels, which then made recommendations to a two man selection panel, namely Minister Hill, and the Minister for Primary Industry, and Energy.

The ANAO found that this panel placed higher emphasis on 'community projects and on those projects with a stronger on-ground focus than the various stake-holders expected' (1998, p. xi) and recommended that it be more explicit about particular selection criteria for submissions. The ANAO thus verified that ministerial preference for on-ground works by local groups had been achieved in NHT1 in what seems to be an instance of centralised decision-making, by contrast with 'muddling' and conflicting purposes. Subsequently the local groups had 'to adjust to a larger-scale and more impersonal system' (Johnston et al., 2006, p. 18).

A participant said that there was a high degree of collaboration with the states in NHT1. State officials were on these regional and state assessment panels by contrast with NHT2/NAP which 'hamstrung the state governments as autonomous players' (interview). The change of direction was said to be because 'the Commonwealth gets most of the revenue and the states do most of the spending' (interview). The states have constitutional responsibilities for health, education and environmental matters (other than international treaty sites and some marine situations)

amongst other things, but don't have commensurate resources. Participants referred to the vertical fiscal imbalance resulting from the states ceding their income taxation powers to the Commonwealth during World War II and not reclaiming them. They thought that the Commonwealth had withheld funding from the states and territories, and/or attached strings as tied grants. In 2000 the Howard government introduced a goods and services tax which complicated the vertical fiscal imbalance and added to the horizontal fiscal imbalance, redressed by a complex redistribution of taxation monies *between* the states. Since Federation the slogan has been 'no slum states'. Financial dealings as actants permeate Commonwealth/state relations, with 'our money' referred to often by participants.

'A flow of money is something that a state government finds very, very hard to say no to' (interview). Note that 'state governments' and 'states' are actors. The states may 'squeal', but they 'will fall into line and it always happens' (interview). This participant said that interests of each state and the Commonwealth were not vastly different. They were elected by the same electors and the states were not 'warring states' (interview).

The scene was thought to be set for the environment and NRM generally by these being state responsibilities which they can't afford because of the fiscal imbalances. There was a general view that the states can argue about their share but the Commonwealth controls it and if the state doesn't comply, they don't get the money. Having said that: 'There is no way in hell that the Commonwealth government will *not* allocate money to Western Australian projects' (participant's emphasis). Another participant referring to the regional groups as employers, talked of 'that level of assumption [by government] that people want the money but people want security' (interview).

The Commonwealth was understood as having a relatively more universal sphere of relevance than the states. The Commonwealth and the states:

Look at things differently, and it does seem to me that the Commonwealth is much more policy driven and much more kind of helicopter level, much more interested in things like equitable treatment across the whole of the country and being fair. (interview)

'Fair' did not connote homogenous or uniform, but 'equitable' (interview). The Commonwealth could not 'play favourites', that is, make different rules for different parts of the country. If it did, it would get into trouble 'probably constitutionally but certainly politically' (interview) as demonstrated with the ANAO's defence of the equitable allocation system for NHT1. Equity didn't preclude giving different amounts of money to different groups after good criteria for

priorities had been developed and priorities then set. Relational shape here was held by rules, the Australian Constitution and 'criteria and priorities' (interview) amongst other things, including watchdogs such as the green groups.

The Commonwealth goes to the states with standard terms which they apply to every other state. 'Government being government, it's one size fits all' (interview), a common theme raised in this research. The regional approach meant that local groups had to adjust to a relatively more universal system than Minister Hill's more on-ground, decentralised NHT1. The transition *inevitably* expanded the sphere of relevance. The program was *being made* combinable and repeatable and also singular, in the ontological boiler room by reduction of the local and particular.

'Realistically it is probably impossible for the Australian Government to identify the real priorities on its own (as it attempted to do in CfoC [sic])' (Pannell, 2011, p. 3). Caring for our Country was regarded as extremely centralised. The successor to NHT2/NAP, Caring for our Country was directed at ecosystems, icons, feral animals or weeds of *national* significance, impacting Western Australia. 'Most of the targets were over east so we suffered a bit' (interview). Those of more *local* significance to people in the Perth metropolitan area were too, and it was thought that people 'are going to lose that sense of ownership' (interview), which I would say derived from these as transitional objects. Regional bodies didn't really 'have a say' (interview).

Rushing things exacerbated ill-fit. In a workshop for regional groups during the transition from NHT2/NAP to Caring for our Country, a regional representative asked if Commonwealth money could be applied to monitoring and evaluation. The Commonwealth consultant replied that the regional groups were statutory so that should be the state contribution. The representative argued strongly that some of the state regional groups were not, and had no allocation of state funding, confirmed by hasty phone calls.

Now that is frighteningly bad but does give you an indication of the sorts of... when you rush something through in a siloed way, the sort of really important information gaps that you can have. It does actually frighten me. That frightens me. (interview)

'Frightening' was clarified at the interview as government incompetence. The translation snapped and there was no smooth running chain of truth to use Whitehead's metaphor, but disorder, a matter of concern. The standard terms applied to non-standard conditions made, for

a moment, the regional group into a mediator rather than the taken-for-granted intermediary. The malfunction made ‘government’ another actor, more visible, indeed frightening.

The states may argue special circumstances. In NHT2/NAP Western Australia wanted acknowledgement of the \$36-40 million it had proactively spent on dry land salinity in advance of the other states with the same problem. A year’s work had been put into totting up this expenditure to mount a case for its recognition. It didn’t suit the Commonwealth which would have had to go back and adjudicate for all states what did and didn’t count, how far back the adjustment should go and how it should be measured. ‘I think in the end they just said: “That’s all too hard” [...] draw a line here and start with a blank slate’ (interview). One view was that a deal was done with Western Australia matching the Commonwealth grant to an extent on an in kind basis. Another view was that the state had finally agreed with everything that the Commonwealth had put up in the first place, didn’t get a better deal, and simply delayed the start of funding by three years in a seven year program. Regional bodies still had to comply with program deadlines.

You think the [...] public servants who do the negotiations are basically carried along by major forces even though the particular parties as we’ve just said can influence the negotiations quite strongly. But there are stronger forces at work, namely Commonwealth state fiscal relations.

Yeah, that’s basically, I think that’s right.

With NHT2/NAP, after direct negotiations with the states which signed an intergovernmental framework agreement through COAG, further negotiations took place with each through bilateral agreements, becoming more localised. This didn’t happen with Caring for our Country.

The Ebbs and Flows of Power and Other Actants

A participant said that one determinant of relations was the ‘architecture’ of each program. In NAP the Commonwealth and state matched funds for the first time as a true joint venture for regional NRM. They then managed ‘a joint cash pool, a cash pool of investment’ (interview). A Joint Steering Committee (JSC) was set up in each state which made the decisions or made the recommendations and the money wasn’t spent until both the state and Commonwealth ministers had agreed and approved the expenditure.

The ‘glass jar’, a notional cash-filled boundary object, signified transparency in financial dealings between Commonwealth and each state at meetings: there was no actual jar. It reconciled different perspectives as a ‘single reality that makes it possible to negotiate and

secure transactions between different cultures or professional groups' (Law & Singleton, 2005, p. 342). The regional groups performed this federating function too. Joint decision making between the Commonwealth and the state 'to invest in third party players', such as Perth Region NRM 'forced that, actually forced the collaboration and cooperation which [...] got increasingly positive' (interview). Similarly the chain of care emerged from and through cooperation for the patient's sake, with the patient—regional groups here—as a boundary object (Lindberg & Czarniawska, 2006). Note too, further enactment of the policy production line.

NHT2 was similar but the joint venture model was '*diluted*' (interview) as the states matched *in kind* to an extent the Commonwealth funding. 'It was Commonwealth cash with the state minister having to sign off on the approvals' (interview). The Commonwealth ceded authority to the states with the state minister signing off on the Commonwealth cash and the states' *in kind*.

Caring for our Country was said to *dissolve* that architecture. 'The architecture of that program, the face of the program, and now the new architecture again [...] is the dominant thing' and not so much policy or state/Commonwealth fiscal relations⁶⁴ and equitable distribution as others said. Initially it forced cooperative and collaborative relations between governments which were diluted in NHT2 by a weaker funding match, with state *in kind* contributions and no joint ministerial sign off. Then it was dissolved with all three phases observed by the participant as the result of a natural experiment.

The architecture oscillated.

It is partly the old centralise decentralise thing. You can see it throughout government. It is a perennial thing where people feel um they feel um, OK we will decentralise and empower other parties and then they claw it back. [...] It just keeps... That is like a tidal system. It just comes and goes. (interview)

'It's kind of traditional' said another participant who continued:

Sometimes the Commonwealth takes a view that they should cooperate with the states to get a better result. And sometimes quite often they say: 'We get a better result quite often if we just ride over the top of them'. With Caring for our Country there was no level of partnership or consultation *what-so-ever*. (participant thumped the table).

⁶⁴The architecture also determined the amount of interaction between groups. Commonwealth interaction with Perth Region NRM was less than with the other five state regional groups because it did not have NAP funding. It also forced many of 'the regional people who said they did not want to be involved in this big picture stuff' to include it in their programs because 'they had to. It was the Commonwealth forcing everything into regional strategies' (interview).

The Commonwealth thought that it was their money to do whatever they wanted with it and what they wanted was ‘maximum political gain’, that is, ‘public appreciation of what has happened’ (interview).

Western Australia ‘wanted very much to be a three-way partnership’ (interview) between the regions, the state and the Commonwealth, which may have resulted from the consensual approach of the Gallop state government (2001-2006). ‘WA *was* different’ (emphasis in interview) as representatives of the regional groups were on the JSC. They may have felt ‘a little bit left out sometimes, even though they were probably more in the loop than [...] any of the other regions in Australia’ (interview). Commonwealth and state officials were both disconcerted because of their uncertainty about the regional groups’ intentions ‘so there was a bit of tension between the three levels I guess’ (interview). Very occasionally it was said to be difficult for officials to put all cards on the table⁶⁵.

A third participant contrasted the Gallop government’s consensual approach with the hierarchical approach of the Barnett government (2008-current). ‘Drawing a long bow possibly’ (interview) he referred to Putnam’s ‘Making Democracy Work: Civic Traditions in Modern Italy’ (1993). In northern Italy people worked and deliberated together in groups by contrast with the southern patriarchy. The chaos and dysfunction and good outcome of the first where ‘the journey was better than the final delivery anyway’ (interview) was compared with the ‘feeling that I get at the moment’ that like southern Italy, ‘there is this hierarchy and you just [...] try to manage up all the time’ (interview). This participant also noticed cycles of larger and smaller scale interventions with huge iconic programs succeeded by ‘little single purpose programs to save the dugong’.

Other participants referred to dialectical dynamics and regarded them as almost inevitable. The participant who mentioned the tidal system continued that there is ‘some sort of ebb and flow there of power and authority’ (interview). He continued: ‘The more that you turn it back into a command system in Canberra, the less likely you are to get a great deal of leverage out of the local folk and certainly out of the states’ (interview). ‘Leverage’ referred to the huge amount of volunteer effort which it was thought was related to the funding. The more the central control,

⁶⁵ The NHT2/NAP secretariat in Western Australia was the State NRM Office located in the Department of Agriculture. In Canberra the Department of Agriculture, Fisheries, and Forestry and the Department of Environment, Water, Heritage and the Arts jointly managed NHT2/NAP.

the less the collaboration, that is, apparently the less real and smaller the network which then perhaps changes the tide. A fourth observed a 'pendulum' of devolution to the regions pushed 'right to the other end and now we have to bring it back' (interview).

Unlike NHT1, the money did not go directly to the grassroots people in NHT2/NAP. The regional groups were said to be getting pressure from them. It was considered that 'the regional groups became much stronger and they lost a lot of grass roots involvement' (interview) also observed by Johnston et al. (2006). Over half the farmer respondents in each of three cases, agreed or strongly agreed that NRM at the scale of their region 'is so remote that it discourages us from getting involved' (Marshall, 2008, p. xvi). It's relative: 'It's amazing how many people think that money hits the ground when it stops with them' (interview).

Personae and Patronisation

It could be expected that actors towards either end of a translation/transformation would have more experience of that and regard the other as relatively remote while still dimly present as Whitehead's isolated thoughts about the Brazilian flora. Some participants spoke of distinctive relations with some states, more than occasional thought, but less than those of a native, going on my own experience. These resulted from intermittent interaction, a sort of administrative tourism.

Western Australia was described as having a 'persona'. This was not just a figure of speech but 'Western Australia' was making at least one actant do things and making a difference to a state of affairs by being a character or an actor itself. It transformed 'some As into Bs through trials with Cs' which left traces (Latour, 2005, p. 53). The persona affected relationships, officials' performance, outcomes, policy development and implementation, and style of application. The Commonwealth had a persona too as did the regional groups and state departments to an extent. Participants described impressions obtained by participants comparing the states, regions, or departments, through working or negotiating with them, or having friends and relations who lived in them. They described what they had learned through repetition and juxtaposition and what they expected to find as a stable, habit-like pattern of interaction. At first these characteristics were simply interesting but then I thought they instanced perceived, and to an extent performed, differences.

Western Australia was suspicious. The state was described as paranoid and intermittent acrimony was an open secret. These were 'tense and difficult negotiations' (interview). There

was ‘fairly strong distrust. It was God awful’ (interview). Participants referred to mutterings by Western Australian public servants about ‘secret squirrels’ and ‘spies’ which made it difficult for Commonwealth officials to do their job. Earlier, Western Australia was related as not wanting its data transmitted out of the state for Commonwealth perusal, or federal officials admitted into it without permission.

The climate was said to be ‘not so cold’ for negotiations for NHT2/NAP because the issue was ‘softer’ and the Commonwealth was ‘offering money to do things’ (interview). However, the Western Australians: ‘Still think they have been, you know, are being hard done by, by both those foreigners from the east and also the Feds. It was quite, quite amazing’ (interview). ‘There is still a feeling, as a Commonwealth person that you were the interloper’ (interview). One participant said that she had developed Western Australian networks as a state government employee but a peer from Canberra found it harder to build the relationships and rapport needed for information-sharing, development of partnerships, and good outcomes for investments.

The state complained about the vertical fiscal imbalance. ‘It’s our money anyway you’re giving back to us. You take it from us as income tax and then you give it back to us and put strings, attach strings to it’, a complaint ‘*never*’ (emphasis in interview) heard from the other states in the participant’s entire career. Another attributed the ever-present underlying tension of Commonwealth/state government relations to the strings/no strings argument, but without the ‘our taxes’ component. ‘Commonwealth/state relations are always fraught’ (interview). It was said that while people think this is because of the colour of the party in power in the state and the Commonwealth respectively, the status of the money was more important. The vertical fiscal imbalance sets the scene for the state.

From a state perspective it really rankles us that we have now got a situation where states from their own revenue sources only generate about 45-50 percent of their revenue needs. The Commonwealth generates something like about 170 percent of their needs. (interview with a Western Australian official)

From a Commonwealth perspective: ‘It’s just a different mental construct’ (interview) and was thought to result from separation and isolation. There was an exaggerated distrust: ‘a definite [...] sort of persona of paranoia about Canberra, Canberra and the east in Western Australia’. He continued and qualified the statement: ‘So I felt a lot of what I sensed, as what I probably loosely talked about as Western Australian paranoia’.

Another thought that there was still ‘an east west thing in Western Australia that just seems to hang around for a long time but it gets less with time’ (interview). This participant continued: ‘And there’s just a general “over east”’ (interview). Personnel changes had improved things. Western Australia was still untrusting but relations had been improving for some time and were really good at the time of interview: ‘It’s well, gone basically’.

The reasons advanced were possibly that ‘Western Australia thinks it should be a separate state’ (interview). Over the years Commonwealth officials hadn’t travelled too often to ‘the west’ and now ‘they’re [West Australians] a bit horrified’ that ‘we want a bit more of a say in some things’ (interview). A participant referred to Western Australia as remaining the ‘puzzled partner’ in the NHT2/NAP marriage with the Commonwealth, while the other states had ‘gone beyond that’ (interview).

Western Australia was also thought of as usually reactive and it made small changes around the edges: Western Australia—‘WA’—stood for ‘Wait Awhile’ (interview), but also ‘Way Ahead’ according to a West Australian. ‘Often the state doesn’t really clearly think for itself. It responds to what the Commonwealth’s doing and then copies that. Which is unfortunate as I think the state should set its own direction’ (interview).

In what resembles the Swan River governance tension (Robins et al., 2011) some senior state officials at joint meetings with the Commonwealth did not offer a consolidated state position but pointed out the shortcomings of each other’s position. To the Commonwealth this had some advantages but the preference was for a shared view to work with, and Victoria was instanced.

The Commonwealth is suspicious. Despite the partnership rhetoric, the Commonwealth thought that none of the NHT2/NAP money should go to state agencies. There was paranoia’ about the Commonwealth handing out the money and ‘getting the glory’ (interview) which was a prime political occupation. The Commonwealth thought that the state was monopolising it, and vice versa. Both were miffed that the regional groups didn’t understand their ‘political needs’ (interview). Two regional bodies thought that there was poor media promotion of NRM which was not ‘sexy’ (Johnston et al., 2006) so they weren’t getting enough attention either⁶⁶.

⁶⁶ A stumbling block for NRM funding is its lack of visible and immediate appeal. By contrast Perth’s new passenger railway extension along a freeway was a visible, 24/7, attention-getter and performance indicator. ‘Every time I drive down that freeway I can see where my money is going into that railway because every day I can see the railway is getting longer and longer and longer’. The statement was ascribed to a State Treasurer who compared the certainty of these outputs and a completed rail extension

Other states have traits. These influenced relations and capability to take the policy lead.

Victoria and New South Wales are better resourced. They have more people, they have more policy grunt, they have better depth of effort, and this means they can sometimes take the lead more readily, they can do more of the spadework and the intellectual thinking through of issues and it is easier therefore for them to take the lead. That is a reflection of size and resourcing, not of better access. (interview)

Unlike the other states Victoria was said to have the best policy capability, best governance, and the 'most profound intrinsic interest in policy per se'. In the other states, especially outside the senior ranks and central agencies, policy discussions foundered.

Their eyes glaze over or they look at you as if you're you know really, you're just some kind of [deleted]. That's not where things are at. For a lot of state departments, it's not. (interview)

The participant didn't know why Victoria was so policy friendly. Another said that Victoria was 'quite reserved', knew what they were doing, their way, and took the money. 'This is our patch now stay out of it', not because 'you were Feds or from the east' (interview).

'New South Wales [was] quite chaotic and disorganised'. It was 'quite happy to have the Commonwealth as a player but not very astute about what the Commonwealth needs were in various programs' and often espoused partnership but did things separately. They had 'a slightly high handed way about them' (interview)

It's 40 percent of the population and all that stuff, and they were here first, and they're the natural leader and really you know, Australia, the Commonwealth of Australia, is some kind of encumbrance on the body politic. (interview)

This participant thought that NSW thought it was big enough and the most important enough to go it alone. 'We don't need your money anyway we're big enough without it' (interview). They are 'somehow on a different wavelength from everybody else'.

New South Wales always looks as though they're coming from a different planet for some reason. I don't understand it. They're weird. [...]They've got themselves organised differently, they have different departmental structures. They've given things different homes. They have different rules. (interview)

outcome with the tardy, hard to measure, and worst of all, furtive outcomes of NRM. The comparison is unfair because an outcome for a new railway could be measurable air quality improvement resulting from diversion of car travellers to train travel, also furtive and hard to measure.

State Treasury was related as sceptical whether investment in NRM would result in something tangible or would be frittered away on small projects.

Queensland was 'extremely warm and welcoming', a 'very, very different climate to that of Western Australia'. 'South Australia tends to be a small state' and 'come on board for the money fairly quickly' (interview). Usually they were in accord with Commonwealth thinking and made it work for them. They were reported as having sold their ports to get the matching funding required for NAP/NHT2.

'Tasmania was really the poor cousin. You know, happy to get Commonwealth money and basically do what you have to do to get it' (interview). South Australia and Tasmania have become irreversibly specialised, that is, dependent on Commonwealth funding. A state participant thought that there was a kind of brinkmanship used with Western Australia as it wasn't regarded as a significant as some of the other states⁶⁷ and the Commonwealth weren't as desperate to have it sign up.

I asked a participant to estimate how long it would take to do one of these NAP/NHT2 start-ups again. South Australia was about six months, some of the other states 12 months and 'at some level you will probably never get there with NSW' (interview). It was also reported that a federal official 'actually said that you can always tell in applications where they're from [...] so people in WA write things in a certain way. I mean it's fascinating'.

Western Australia's amour propre. Sometimes the extent to which WA went along with the Commonwealth and trusted it in various ways was surprising and sometimes the extent of Commonwealth concessions was surprising.

A lot of the argument seems to be about things which are not, I wouldn't have thought, not fundamental to the understanding.
Such as?

I used to be amused at the amount of fuss that was expended over some clause which I thought was unlikely in the end, to be particularly decisive in the way anything happened.

How did you interpret that? What were they actually doing?

I interpreted that as something to do with *amour propre*, often. This was a state right or privilege that they didn't want to see eroded.

⁶⁷ Western Australia is larger in area than France, Germany, Spain, Sweden, Italy and Finland combined but sparsely settled except in the south west. Its insignificance could refer to population, disconnectedness, both, or even malleability, but not area. It occupies 33 percent of total Australian land area. Similarly 'small' South Australia (12.7 percent) is larger than 'big' Victoria' (3.0 percent) or New South Wales (10.4 percent). Tasmania loses on all counts (0.9 percent and small population).

Patronisation was an important relation between people, and between people and things such as the state, with its touchy *amour propre*. ‘The east’ patronised Western Australia. ‘They just drove me insane because they are just, we are disadvantaged in WA. They just don’t *get* what we do here’ (emphasis in interview). With reference to representation on a national industry committee [not NRM] it was said that: ‘They consider we are quite strange. That we don’t need representation. [...] I looked at the composition of a committee [...] Western Australia was not represented *at all*, whatsoever’ (emphasis in interview). The participant wrote to Ms Julia Gillard, then Deputy Prime Minister, to say how ‘appalled’ he was at the lack of representation and was advised that there was a national representative of the relevant body but this person was from the eastern states. He examined various committees and concluded that Western Australia doesn’t necessarily have representation proportional to its population which he said was patronisation of the state.

Another said that the Commonwealth knows what is best to do and ‘those states have their vested interests and their own politicians and they just make things difficult and get it wrong so we should run it’ (interview). Canberra was thought to be a very polite society and the people genteel and sophisticated in their dealings but it was thought that they felt themselves to be superior to the Western Australians. The Commonwealth had a parental attitude to the state. ‘You are a bunch of children and a bit of a rabble. You’ve got to be managed and corralled. We’ll be patient with you. We’ll listen to you’ (interview). Caring for our Country left judgements to the Commonwealth ‘in a very paternalistic fashion’ (interview).

The state patronised the regions. ‘I think you get a very paternalistic view from a government agency who kind of says: “We know what’s good for you don’t you worry about it community. We know what’s good for you. We will spend money here, here and here’ (interview). The participant said that if he were a politician he would seek advice other than from any government agency, to get a balanced community view between this and political sniffing of the electoral breeze.

A participant said that representatives from Canberra would come to Perth for a few days and like the proverbial seagull of management, fly in, crap on everything, and fly out. ‘We do that too’ (interview) he said referring to regions outside the Perth metropolitan area.

A metaphor of parental care was used in a state reference to the regional groups. ‘We treat them all equally and fairly; we don’t have favourites’.

Western Australia had local/material expertise. Commonwealth officials were ‘policy people’ without the ‘skill to deliver practical on-ground programs or the science to underpin them’ (interview). A major state soil problem was shown in the then current Caring for our Country business plan as occurring in the Swan area—‘the least of our problems’—but not the 11 million hectares at risk in the state. Perth Region NRM submitted a \$12 million bid to increase soil carbon based on this data which they were then advised was false. Further examples included members of a national expert panel not being asked to contribute to a national program on the subject area. A Commonwealth official running programs worth hundreds of millions of dollars had not observed the target phenomenon of the program and another was not across his brief which made a substantial difference in getting things done. The ability to make good decisions without knowledge of the subject was questioned.

That worries me. The centralisation is good in some ways because you get standardisation, but when you centralise it and give the people who don't have an interest, or, not an interest, but an experience, that can be profoundly wasteful of money. (interview)

The state agencies⁶⁸ thought that the Commonwealth didn’t recognise their scientific expertise. Expertise and priorities had been reconciled in NHT1 when each state listed its preferred priorities for applicants to consider in an open grants process. Applications were then deliberated by a state panel with final selection by a Commonwealth panel. With NHT2/NAP, there were two allocations of money, the non-regional and regional group components. Decisions were made on the first allocation by the JSC and approved by the Commonwealth and State Ministers concerned. Each regional group set out its priorities in a strategy which was accredited for subsequent expenditure by both state and Commonwealth. In Western Australia where the regional bodies were non-statutory from inception and as there was no-overarching NRM plan, the priorities were those of each catchment region, the policy intent. The state agencies had to apply to the regional bodies for NAP/NHT2 money with their claims based on expertise and capacity to undertake the contract.

⁶⁸ The state had its own hierarchy of expertise. ‘Traditionally Government agencies are not so confident in the less clear cut areas of social collaboration, intergovernmental and private mixes, community investment and the “social asset condition” of people’ (Hicks, 2006, p. 53). ‘Their more confident territory is probably the science—the biophysics—of NRM’ (p. 53).

There were other views. 'I think we are thought of as unsophisticated which we are in lots of ways'. Western Australia was described as a 'test bed' for new products by eastern states' businesses dating from the days when most communication was by newspaper but still true to an extent. Its isolation gave it an advantage as there was 'a certain time length before everyone cracks onto your idea'. If it worked in WA it would probably work in the rest of Australia, implying that there isn't that much difference between the states, counter to the small state/big state and sentimental differences just described, as *isolation* now makes the difference. The state's offer included 'good intelligence' but was hindered by the lack of 'absolute specialists' for example.

Agency character. The new Department of Water was an 'innovative and young organisation', 'it likes to move forward, it likes to look at new ways to do business' by contrast with DEC which is 'very much top down, doesn't like to partner, it doesn't look at new ways of doing things' (interview). 'Some [state] organisations retain a "control" culture at the expense of wider involvement and outcome delivery' (English, 2009, p. 21) and reference was made to 'reduced competition and enhanced collaboration between [state] organisations' (p. 21) which was needed to improve state-wide delivery of the NRM program. The 'troubled cooperation' with a 'crucial and difficult' dynamic in Swan River management by some of these same agencies (Robins et al., 2011) will be recalled.

Hicks, writing at the time when Robins et al collected the data, concurred.

Yet at times the work has been somewhat disorganised, highly individualist, sometimes at cross purposes, and with slim guidance on overall priorities. The Review sees little evidence of concerted, rigorous resourced [sic] timetabled state processes. (2006, p. 26)

Personal relations. Conflict was considered to be personal, perhaps unusually for predominantly public servants with their Weberian obligation to be without anger or fondness. 'It all boils down to personalities' (interview). Three participants mentioned personalities as a significant event and a further ten mentioned them as either instrumental in getting things done or affecting results of activities, or as a major factor. Adverse working relations with a superior and the capacity and quality of a superior or peer negotiator were mentioned but not often. Temperament, intelligence, perspicacity, ambition, interest, farsightedness, being across their brief, ability to negotiate around a problem brought to their notice, and cooperativeness were mentioned as assisting achievement. Lack of them impeded potentially beneficial actions.

Some had experienced acrimony and combative relations but they did not affect the professionalism with which the work was carried out but there was understandably less enthusiasm for working in this atmosphere. One participant said that ‘he got the feeling they [Commonwealth officials] liked dealing with us’—a regional body-- rather than the bureaucracy. A few state officials were thought to have been obstructive and unsympathetic to the ‘Commonwealth perspective’, observed as what they were paid to be doing, but they could have been more adroit.

In one early negotiation it was recalled that the state delegation literally took their time using the two–three hour difference between Eastern Standard Time (EST) and WST, to keep the jet–lagged Commonwealth representatives going until 11.00pm EST. Successive referenda have said ‘no’ to daylight saving which would align the state’s WST to EST. Perth, the capital city, shares a time zone with Singapore, Hong Kong and Beijing, increasingly a reason for retaining WST.

A comparison was made a number of times between regional groups where senior staff, besides having different priorities, took different stances and were more—or less—‘welcoming’ (interview) of contributions from more junior staff as an hierarchical *style* as there was no hint of conflict. The translation was altered when there was not the ease of communication. If something were to be done differently it was suggested that more active state engagement with the Commonwealth ‘right up front’ rather than arguing as occurred would have been more productive. This would have been done using ‘one on one personal relationships more than anything’ (interview). Arguments at senior level between Commonwealth and State senior staff prevented it, a view shared by Commonwealth. More effort should have been made to seek out more people like the few who were thought to have been ‘a breath of fresh air and absolutely brilliant to work with’ (interview).

Officials from the state public service were spoken of as ‘competitive’, ‘territorial’ ‘egotistical’ and ‘alpha males’ (interview). They were: ‘all the same [...] absolutely faceless bureaucrats [and] it is irrelevant which department they are in’ (another interview). Another participant observed the combativeness of some state senior public servants in a tea break at a function: ‘all of a sudden the room all went quiet, and these two were going at it hammer and tongs, and making accusations’.

The Chairs of the regional bodies had a huge work load of meetings and were 'burnt out' by:

Having to play all the politics, to play all these games that have been going on, the pushing and pulling between the state and the federal situation, they've had a really difficult situation to try and work their way through to get what is, or what is now, pretty small amounts of money on the ground. (interview)

They were paid sitting fees but they were there 'because they want to protect the environment' (interview). 'They've burnt the chairs out pretty quick. [...]. The chairs if they last a couple of years they're doing well'.

Overall there did not seem to be much of Lindblom and Czarniawska's 'we feeling'. I checked the interviews to determine if any participants had been complimentary about the people they worked with: seven were with five complimenting public servants.

Summary

There are four observations. *First* the separate states are actants. It is not simply an empirical matter, something like New Yorkers walking faster than Londoners, which may be timed. My question on state program take-up time, demonstrates that states could be timed in how long they took to stroll round the same administrative block.

For most occasions and most people the states are intermediaries, invisible and silent. The difference in time zones is one of the few occasions when radio listeners, travellers, friends and relatives who live in another state, and some industries such as entertainment, are able to juxtapose a particular state quality. (Perth audiences for the big venue shows are said not to applaud as much or as fast). One participant had observed dramatic change over 40 years in the decreased importance of state governments by comparison with the Commonwealth as the most powerful influence on citizens.

To hear a state talked about in these unusual characterological terms, the speaker has had to experience it and the listener has to take this 'metaphysical innovation' (Latour, 2005, p. 51) seriously. The speakers' standpoints were such that they could translate factoids such as policy acumen and different categorisations into more universal observations about the form of a state. Facts such as areal differences between Victoria and Western Australia, relevant to a policy dealing with them one would think, have been black boxed which is not to say that they were not influential on other occasions.

There does not seem to be a language to talk about 'state' in these rarefied and uncommon interactions, no map or abstraction of it as an actor, except as instances of actions, and in the relatively universal end of the abstractive hierarchy, as members of a federation.

In Australia the persistence of states as entities, is taken for granted existentially despite Western Australia continuing to talk about secession⁶⁹ but what exactly is a 'state'? Certainly it is more than map coordinates and administrative convenience. Its character is derived from observations and experiences of it as a society, a complex route of actual occasions, of feelings: it makes relations and relations make it. Like de Laet and Mol's mutable mobile, they seem to peacefully change shape, bit by bit, but it need not be so.

To summarise, the states were actants and performed and were performed differently. I first thought that the states' personae were an interesting curiosity. Now I would say that they could signal different realities and could be examined as a fire object with federation as a shared characteristic. How is federation performed, is an unanticipated rephrasing of my research question.

Second the activities described start with a mixture of Shergold's 'high falutin rhetoric' and 'bite size chunks', the activity at the vertex of locality/materiality contained in the relative universality of 'rhetoric' manifest as the textual public communiqué. One resources the other. The little material instances such as the diabetes program, instantiate the potentiality of the rhetoric as the abstractive hierarchy moves along a route of actual occasions, 'industrially' from the relatively universal to the more local/material.

Third considered as an abstractive hierarchy, there is a pattern of patronisation of locality/materiality by the relatively more universal, between Commonwealth and state, state and

⁶⁹ 'Twenty-five years ago we all boarded the good ship Commonwealth for a lifetime voyage, with the full assurance that there would be only one class for all the passengers,' [said Sir William Francis Latham, former Lord Mayor of Perth]. 'During the voyage we found to our great surprise that there were four classes. Victoria and N.S.W had secured all the saloon cabins, South Australia and Queensland the second class, little Tasmania was put in the steerage, whilst W.A. is compelled to work for her passage in the forecastle.' (Constitutional Centre of Western Australia, undated). The state felt short changed by the Federation shortly after joining it in 1900 and attempted to secede in 1933 prompting the Constitutional Centre to ask if it was exceptional or whether it reflected deeper feelings. The Premier of Western Australia recently referred to the state becoming the Republic of Western Australia (Alston, 2012, p. 52). Anecdotally, Western Australia's exceptionalism is not new amongst historians.

region, and region and locality, which goes both ways. The relatively more universal objectifies or black boxes the more material/local, by pointing to its lack of administrative expertise, manners, wealth, malleability, or maturity. The counter flow exploited the insensitivity of the relatively universal to locality/materiality, by wielding superior biophysical knowledge. Perth Region NRM advantageously combined scientific and local knowledge by seeking and commissioning expert knowledge from scientists as observers, board members, and volunteers.

Local time (WST) was deployed to make eastern officials wait, even if only for their bed time. Both governments made much of regional group financial and performance accountability despite favourable state audit findings (Auditor General of Western Australia, 2004, 2007). A participant observed more accountability in Perth Region NRM than in government. Regional group feelings of culpability because of official lack of trust and stringent governance requirements have been mentioned. There is tension in governance networks between 'democratic legitimacy and accountability' (Ansell, 2008, p. 1) with accountability considered more as network responsiveness and inclusion than financial. Here is another version of it with democratic legitimacy of groups being questioned via financial accountability. It could be understood and theorised as tension between locality/particularity and universality.

Finally, despite the persisting theme of conflict in public life, Hoggett's *intrinsically* conflicting public purposes were not often mentioned by the participants who attributed conflict to personalities, gender, lack of shared purpose, and state persona. Connectivity was thought to be fostered by allocational fairness; a 'softer' decision-making climate when money was being handed out in NHT2/NAP; its architecture; and dealing with a non-government organisation. In the following, 'the big picture' and lack of it, as a source of conflict is examined.

The Big Picture

In interviews, of 21 participants, ten referred to the 'big picture' or 'bigger picture' including one who referred to the Commonwealth's 'helicopter view' and another who referred to a 'bigger focus'. To what did the 'big picture' refer? Whitehead wanted his metaphysics to be consistent with common sense and here is a good example of demotic metaphysics at work. Latour (2005, p. 103) refers to his own obsessive literalism and I have applied it.

Local groups were unable to work together because they were more concerned with saving a little bit of nearby environment. Hence 'they didn't have a common purpose'; they were

'insular, being very insular, not being bigger picture on it' (interview). The insularity of decision making was more local/material with the big picture relatively universal. Gradual agreement *was* achieved about the big picture (see Statements 9 and 14 in Tables 9 and 10) but this could be lost with Caring for our Country as mentioned before.

In the following the biodiversity program manager acts as kind of pedocomparator, turning matter into form: 'And that can help them have a bigger perspective than just themselves'.

If you've got someone, that is why I like the regional model. If you've got someone who's a step outside of the project, like the biodiversity program manager who's good at their job and being strategic, then they can take that, you need someone outside of the project, which is why you get a consultant in, then they can have that sort of touchstone to the bigger picture because you still need the small scale stuff. It only ever works by small scales. (interview)

The 'sort of touchstone' seems to be performing as an eternal object, between the smaller and bigger, more universal pictures.

The participant instanced another group in an objectification rut which they got out of through Learning II.

[They] started to think strategically. [...] And it all needs land use planning, planning, planning, planning. Now they knew that, knew that, knew that, knew that, but the project kept it, kept it, kept it, kept it, kept on doing what it was doing.

Participation led people and groups to realise they were 'part of a bigger thing' in a larger, more universal sphere of relevance like the model of cooperation (Lindberg & Czarniawska, 2006). This is not just about 'old' us but another bigger, better connected and more real us. To repeat: 'The regional groups were getting a lot out of it, more than the money that the Commonwealth was putting in. And as I said, there was that networking thing and people feeling part of a bigger thing'.

The big picture was associated with levels. A participant talked about people he knew, indeed, most people's NRM involvement which started in a small community group. 'Then they've realised that they were part of the bigger catchment, and then they realised they were quite often in an LCDC [Land Conservation District Committee], so they would get themselves elected, and then they would be in part of a sub-regional group' and so on, through a defined hierarchy of groups and processes, in an ever-expanding sphere of relevance rising from member to chairman in a Batesonian 'zigzag' of classes.

As chairman of the Swan Catchments Council [...] you're part of it at the state level and all of a sudden you find yourself going to meetings with the state, and then occasionally

they come to national meetings. So you go from being involved and interested in your local creek, before you know it [...] over about an 8-10 year period, you're up there at the national level involved in all sorts of things. (interview)

In government:

We've got our team with the director at the head and we deal with their team and then we have our executive directors. When they are brought in they are dealing with a different level of issues, the bigger picture issues that need to be discussed. (interview)

Noted before was Botterill's suggestion that 'the big picture issues cause difficulty and are increasingly handled at the level of COAG' (2008, p. 193), that is the higher level.

Another spoke about a relative's involvement in increasingly significant issues as he rose through the NRM ranks. 'It gave him a feeling of doing something bigger than his own farm, it was really a maturing thing I guess'. A broader sphere of relevance is associated with maturity.

A place has 'to pay for the paraphernalia necessary to reach every one of the other places it purports to sum up, and to establish with it some sort of continuous, costly two way relation—if it doesn't foot the bill to the last cent it becomes a panorama' (Latour, 2005, p. 192). 'Government' like society, overshadows us as a panorama, 'the Big Picture which is just that: a picture' (p. 187), but as I am endeavouring to show, establishing a continuous two way relation with the objects of its helicopter vision, is arduous.

The status of panoramas is 'strangely ambiguous' (p. 189) as they are local sites too, where everything happens, as well as being central, equipping participants 'with a desire for wholeness and centrality' (p. 189). From them:

We get our commonsensical idea that interactions occur in a wider context; that there is an up and down; that there is a local nested inside a global; and that there might be a Zeitgeist the spirit of which has yet to be devised. (2005, p. 189)

The big picture is not simply a hackneyed phrase but implies expectation of ever-expanding continuity and ordered relations, something that is worth having, indeed, wholeness. Another participant referring to an agency restructure, talked about 'having that alignment, commitment there, that we are all part of the bigger picture' (interview).

Stengers asks how 'does the demand for coherence order experience?' (2008, p. 106). The big picture is an ordering potential for me or us, for performances as a 'maturing experience' (interview). It is an eternal object, 'never encountered as such but only as aspects of those

occasions in which they find their ingression into a particular entity' (Halewood, 2011, p. 73). In community whiteboard sessions individuals put 'have your say' stickers on the whiteboard, where their view would be incorporated into the big planning picture: the 'some' (object of many individual stickers) becomes the 'any' (object of all stickers together applying to any of us) through an eternal object in a translation/transformation.

Levels

Every society must be considered with its background of a wider environment of actual entities, which also contribute their objectifications to which the members of the society must conform. Thus the given contributions of the environment must be at least permissive of the self-sustenance of the society [...].

Thus we arrive at the principle that every society requires a social background, of which it is itself a part.

Participants were asked about their relations with the three levels of state, Commonwealth and region without much thought about what else these levels might imply and that the question might be hierarchically loaded. Reference to the three levels of government—federal, state and local—is common in Australian administration and governance. For example, the subsidiarity principle in NRM refers to nesting of governance levels based on capacity to discharge responsibility (Marshall, 2009a).

A computer find function search for 'level' confirmed participants talked about a hierarchy of levels where things happened and decisions were made. Of 21 interviews 19 referred to levels in the bureaucratic and governmental hierarchy as well as other levels uses such as 'groundwater level', which I did not count. I was particularly interested in transitions to the policy level and political level to find out where they lay and what they did.

Many interviews referred to 'levels' as 'up' or 'down'. In practice there is a readiness towards 'up': 'more', 'health', 'life', 'good', 'virtue', 'status' and 'alive' are all 'up' (Lakoff & Johnson, 1980) and so is government as 'power' ('overpowered') especially by contrast with on-ground. Speaking and thinking of hierarchies is biased towards the vertical. In Shergold's 'iceberg' a small peak of rulers swells to a subaqueous bulk of officials (Kelly, 2012) In environmental management, Morrison (2009) speaks of 'scaling down' from government to community control, 'scaling up' from regions to government, and 'scaling out' to overcome problems of 'legitimacy' and 'integration' (p. 229). Some participants were more hierarchically minded than others but a subtle gradation of levels was evidenced with examples shown in Table 11.

Table 11

The language of levels

‘Officer’ level’, ‘officer to officer’ level, ‘operational officer to officer’ level, ‘senior officer’ level, ‘very senior officer’ level, ‘senior executive’ ‘political level’ ‘state level’, ‘bilateral level’, ‘policy level’ ‘Joint Steering Committee level’ ‘that top level’ [of CEO and Board], ‘the other level up’, ‘grassroots level’, ‘regional level’, ‘regional group level’, ‘on-ground level’, ‘not at project level’, ‘very high level strategic plan’ ‘smaller levels’ ‘the high bureaucratic level’, ‘the next level down in terms of operatives’, ‘the regional level, ‘the more senior levels’, ‘national level’, ‘federal level’, Commonwealth level’, ‘sort of management level’, ‘high level decisions’, higher level decisions made by headquarters type people’, ‘higher levels in head quarters’, ‘state level Commonwealth people’, ‘person to person or officer level interaction’, ‘the next level up’, big picture level’, ‘bigger picture levels’, ‘a different level of issues, the bigger picture issues’, ‘the big picture things at bilateral level’, ‘all levels or spheres of government’, ‘the lower levels’, ‘the highest levels’, ‘ the detail level’, ‘smaller levels, ‘our level’, ‘the next level down’, ‘that top level’, ‘the high level stuff’, ‘director level downwards’, level 5 or 6’, ‘all levels’

Commonwealth officials were thought to be obsessed with levels: ‘it’s about where your office is, it’s the level you’re at’ (interview). There was ‘no commitment’ as officials moved frequently between jobs⁷⁰. When a participant went to Canberra to discuss business with a senior policy official (not NRM), he had ‘*absolutely no interest* in the topic [...] *scarily so*. They don’t connect, they have no connection with us, they’re not interested in what we are saying [or] the 20 reports we have written on this’ (emphasis in interview).

In terms of ‘the next level up, the political side of things’ there was a political level, a senior political level and a Cabinet Ministerial level. The political level was usually but not always associated with elected politicians and controversy and occurred where rationing decisions had to be made.

⁷⁰ I understand this to be human resource policy. The Premier of Western Australia also expressed a desire for senior Western Australian public servants to move between agencies more (Barnett, 2009a).

Commonwealth, state, regional local, at every level because there are so many things [...] that need to be done and there is not nearly enough money to do them all so there is a continuous [...] contest. (interview)

Or irrational decisions.

If there are dollars on the table there is a mad scramble and objectivity goes straight out the window. [...] It's the same between the state and the Commonwealth. It just seems to be a human trait. (interview)

In the case of officials: 'Negotiations can get a bit tricky at the high level' (interview) also referred to as the 'bigger picture levels'. At 'the very highest levels [the relationship of officials] was frosty, that's not the right word, lacking in commitment' (interview).

Occasionally regional groups would 'go political' (interview) by publically stating views counter to the state government, antagonising it. Some officials were negative about Perth Region NRM's use of political contacts to leverage a large grant, and also their offer to go as citizens directly to politicians to resolve impasses, which they as officials could not. To summarise, the political level is for some an object, a relatively stable set of processes; or a 'silo' (see below) permeable to citizens but not to public servants; a narrative of 'tricky negotiation'; a site of contested rationing; or a weak personal bond lacking in commitment.

There was a proportionality as well as a hierarchy of levels. 'At the DEC [Department of Environment and Conservation] level the relationship between Commonwealth and state is neither here nor there' (interview).

There didn't seem to be one policy level. Reference is commonly made to 'decision-makers' and Sturgess refers to a 'policy class' (2012, p. 1) preoccupied with imposing their 'Platonic ideals' (p. 2) on what he termed the 'dirty world' of front-line service managers in contact with human frailty in a major hospital. Like Lipsky's street level bureaucrats these solved rationing decisions as there are 'never enough resources to cope with demand' (p. 2). They too, may like Lipsky's administrators, teachers and others resolve '*legislative* conflict' (cited in Hoggett, 2006, p. 179, my emphasis) the conflict of public purposes, and the public disowning of problems.

Sturgess implies some magisterial parting of the waters but more likely there is the steady drip of Shergold's multi-level decision making iceberg. In my research, 'high level decisions' or 'higher level decisions' were made by 'headquarters type people' from a 'headquarters level' or 'a higher level in headquarters', wherever headquarters was. 'At the higher level there is an

element of the Commonwealth, they don't know what they are going to do about this' (interview). Another referred to 'high level decisions' made by senior officers. But decisions are made at every step of the translation/transformation for example by choosing to follow one accounting protocol rather than another. It is not as Sturges makes, a jump between two entities, the Platonic world of form and the 'dirty world' of locality/materiality, but a sequence of exchanges.

Levels are pervasive. Knowledge about local level collaboratives 'cannot be readily mapped onto policy level arrangements' (Robinson et al., 2011, p. 856). No, because both are the results of ordering translations, made clear by all the gizmos in the Boa Vista Forest translation/transformation and mapping would be 'jumping'.

They seem to refer to a real and sequential arrangement of difference and could be the expression of Whitehead's 'layers of social order' with, to repeat, its 'defining characteristics becoming wider and more general as we widen the background' (1929/1960, p. 138). Does the governmental 'one size fits all that doesn't fit anybody' not encapsulate this idea? I may be seeing what I want to, but occasionally, participants gave pithy examples of Whitehead's metaphysics. Both he and Latour (2005) refer to the relation between the metaphysics and common sense, but it is going too far afield to do anything more than note it here.

Levels are *maintained* and it may also be that they demark a wavering summary zone of successful (more real) and unsuccessful (less real) passes of Serres' ball, a quasi-object, which is why they are important and referred to. Will the gap be crossed or not and the transformation take place *this* time?

Levels create time and denote the before and after, the result of ontological politics in which some-thing becomes more real. 'Time does not pass. Times are what are at stake between forces' (Latour, 1988, p. 165, cited in Harman, 2009, p. 30). They stabilise or slow down, making us wait, as matter for mediation to the next form which will in turn act as matter. Latour's Figures 2.21 (1999a, p. 71) and 2.24 (p. 73) depict a gap between the two.

In a separate empirical exercise people could be asked to talk about 'levelling', how levels develop. How do they work –or fail—to connect locality/materiality to relative universality, or rather, to *make* the abstraction, and what work is required. More esoterically it may be asked to

what extent does the gap between matter and form represent Honig's dilemmatic space, the space of decision.

My research would indicate that the proliferation of levels produces a gradient of differentiation which both enables and controls communication. With reference to both government and the local community: 'It was an apparently unquestioned natural law for case study participants that controlling hierarchies exist in society, exemplified by constant reference to appropriate "levels" of decision making and getting "down to grassroots"' (Allan & Curtis, 2005, p. 419, emphasis in text). Gatekeepers were said to control access between levels. Gate open, equality. Gate shut, difference.

Are hierarchies *necessarily* 'controlling'? A pathway up these rural ranks to state and national participation has been described. Clearly there is more than encompassed by a cliché. Laid on their sides, hierarchical levels now demark a flat plane such as a 'level playing field'. Levels denote 'equal to', an isopleth. Whitehead's two adjacent trains are briefly equal to *some-thing* in time and space. Levels both plot positions (are stable) and are 'turning away' (Chia & Holt, 2009, p. 164) like Whitehead's train carriages running parallel for a time, enabling passengers to plot each other, and then they move apart. Fast staff turnover in Commonwealth officials made this positioning unsatisfactory for a participant dealing with them as the level (represented by a senior policy official) was 'turning away'.

Levels are another great stabiliser like the big picture. They prevent jumping, the 'salto mortale', by creating a gradient of minor differences, crucially important in bureaucratic translation/transformation from world to word and vice versa. 'What makes an event a problem is that it does not fit into existing routines' (Hummel, 1991, p. 33). The maintenance of levels, proportionality, and the contents of the datum for each one, for example hierarchies of committees and job classification ingredients, are watched obsessively to maintain parity (see also Hernes, 2005).

'Silos' are another topographical figure. Latour suggests that connecting metaphors be taken literally and ask 'what it means for an interaction to *frame*, to *structure* or to *localize* another?' (2005, p. 194, emphasis in text). As the metaphor implies, silos keep some things in, exclude others, retain their rigid shape, and are conceptually vertical. They are a particular kind of Latourian localiser (Chapter 3, note 17, p. 51), now developed with particular reference to an Australian preoccupation, the tyranny of distance.

Silos

In interviews five participants used 'silo' to describe a stable, circumscribed pattern of communication between employees, or a specific purpose program, for example controlling a particular noxious weed. A participant contrasted the 'siloishness' of these bureaucratic programs with the 'regional level [where] there is a richness of interaction and a breadth of view'.

Silos occupy both the situation of influencing and the situation of the object. A study of one multidivisional organisation of 30,000 employees tracked millions of electronic communications over three months (Kleinbaum, Stuart & Tushman, 2008). It found that a pair of individuals sharing a business unit, job function and office spatial location, communicated by electronic mail about 1000 times more often than other pairs. These three factors were localisers as if you were already close through them, electronic mail expressed and intensified relations and vice versa. Social category—gender and tenure within the firm—was another. Without a very few 'category spanners', people who crossed communicational boundaries, the firm studied would 'devolve to a structure of clan-like silos separated by relational voids' (p. 4).

Electronic communication used instead of personal contact, and together with it, comprised connectivity. 'Apart from the experiences of subjects [humans and nonhumans] there is nothing, nothing, nothing, bare nothingness' (Whitehead, 1929/1978, p. 167 cited in Halewood, 2011, p 27), the void between silos.

Lack of connectivity produces distance with location 'ex silo', a 'relational void', 'bare nothingness' or Latour's 'plasma' (2005, p. 258). Australians use the 'tyranny of distance' geographically to explain the exigencies of communicating but the distance could be a business unit or the adjacent cubicle for that matter. The sparsely or unconnected becomes a vaguely differentiated elsewhere.

Maintaining distant relationships exacts a high cost in time and energy.

They called a meeting that started at 12 o'clock on a Monday, which meant that everyone in the eastern states could get there for 12 o'clock and we all had to fly on a Sunday. I'm just saying: 'I'm not doing it. It's another work day. It's another day'.

Connecting flights to large Western Australian towns in the relatively more populated greater south west involved long waits for the one or two daily flights. It was an even greater disadvantage for people living outside the Perth hub. 'A lot of down time. That's tyranny of

distance' (interview). An object makes us wait, whether it is an official with whom we can't get an appointment, a land mass, or a sparse airline schedule.

When Commonwealth ministers go to an international meeting, they arrange a string of bilateral meetings with ministers from other countries and the minister wouldn't go unless there was an active program of these 'to give the visit *substance*' (interview, my emphasis). However, state ministers when they attend a COAG Ministerial Council meeting, were said not to arrange bilateral meetings either with each other, or with their Commonwealth ministerial counterpart. A former state minister recalled that formal dinners were always held around Ministerial Council meetings. Ministers from the same political party tended to gravitate to one another, although not always. Informal chats by phone were with other ministers from the same political party and with the same portfolio or a particular interest such as the status of women⁷¹.

One of the peculiar things about the Australian Federation is that there is almost no bilateral contact. *Ministers* (interviewee's emphasis) don't do that. State ministers don't come to Canberra and sit down with their Commonwealth counterparts and have a chat. (interview)

I asked why not. 'It's very rare. I have no idea. It's just not done. It's not the sort of thing that happens. No one has thought of it [...] or whatever'.

Western Australian participants thought that decisions in the east were already made by the time Western Australia arrived because people there were always meeting in places such as airport lounges⁷² and having lunches, and conversations in 'the backs of cars' (interview). 'In an informal political sense, the Commonwealth works it all out over on the east coast and we're not there'. The Eastern bureaucrats, but not necessarily the politicians, see each other all the time and are 'always sounding each other out. [...] We miss out on all of that'. The Commonwealth seemed to be strategic about it and got a feeling for what the 'bigger' states think first. In negotiations for NHT2/NAP it was stated that Queensland and South Australia 'folded' (interview) and the other states followed.

An east coast participant emphasised that it *was* a concern 'over in the West', often raised with him, but did not happen as often as people thought. In his experience officials had never made arrangements to have bilateral talks, much less lunch. There had been one or two meetings in 13

⁷¹ Anonymous, personal communication (2 October, 2009).

⁷² Air travel between Melbourne and Sydney in 2008 measured by passenger numbers between similar cities around the world was fourth highest, exceeded by Hong Kong/Taipei, Los Angeles/New York, and London/New York (Bevan, R., 2009).

years between senior Commonwealth public servants with state counterparts. They had an agenda and went through the issues of both sides, literally as they sat on separate sides of a table. The participant thought that it was a good idea.

There was communication by phone and email but a phone call to one state is just as easy as it is to another. There was very little face to face contact, unless there was a hot issue. Silos dot the landscape.

Caring for our Country distanced Western Australian regions.

I know [with] Caring for Our Country the program has moved to be far more distant. We are just another stakeholder in a series of stakeholders under Caring for our Country. So the relationship has changed considerably.

When you say distant um what you do mean by that?

For instance the priorities under NHT2 were determined by the regional strategies and so the investment allocations were according to regional strategies so *regions* made the decisions. Now the decisions about where the priorities are across the nation are made in Canberra, the targets are Canberrean targets and we're useful only if we can assist the Commonwealth in implementing *their* targets. So they are no longer our targets, our priorities. We're useful in terms of their larger, their larger targets. It is a very different relationship. (participant's emphasis)

Relationship distance is measured in decision-making and influencing or 'contact- kilometres', rather than simply located distance. 'Regional groups I don't think have the ability necessarily to influence at the federal level because it is so far removed' (interview) and the same participant talked about having 'a far closer relationship' with the state government than with the federal agencies and 'able to influence them much more'. The relational voids were widespread.

The disadvantage of course of being in Canberra is ah, being WA, is that we are so far away.

From the decisions. From the scanning and from the back scratching.

And for the influencing.

So question number five: 'What are the key issues in your view that influence relationships between you i.e. your committee and Swan, and the Commonwealth government, would be too far away, the influencing is too far away so our issues don't get on the agenda.'

Yes.

Either as West Australia or as an aspect of business or something like that, because there's no one around to push it.

Probably all of the above.

Greater decision- making distance enabled ruthlessness in changing 'the play of interests' (interview). The state is 'more at the pointy end of where the issues are' while the Commonwealth is 'a bit *more removed* so it can be quite, quite, off and on' (my emphasis).

The participant instanced the speedy switch from NHT2/NAP to Caring for our Country

When you are dealing on-ground a lot, it's difficult to make that switch very quickly where the Commonwealth seems to be able to do it a lot quicker and ah ignoring the grass roots impact.

Why do you think they can do that?

Because I think they are more removed from the grass roots.

So it's like hard heartedness.

Hard hearted. Yes. They're in Canberra and can make some of these hard decisions which sometimes state governments find harder to do.

The states were thought to have empathy, a sort of feeling distance, as there was 'inertia of change' (interview) resulting from the involvement of resources and people, and constituents. For some time I did not equate this rather unusual little phrase with Serre's slowing of history by objects'⁷³ but it says it all.

So there is a bit of entrenchment.

Yes [participant's emphasis].

The state tried to be in there for NRM over the long term because 'you don't just switch and swap but the Commonwealth do tend to switch without putting the long term effort in and so that's when it gets a little bit difficult to balance the two approaches' (interview), to make a smooth running chain.

Lipsky's street level bureaucrat dealing with locality/materiality was, despite seniority, the shop front, hands on and making rationing decisions in response to relative universality. There seems to be jumping, that is, lack of harmony in the translation/transformation between the

⁷³ March, 8, 2013.

Commonwealth and state not necessarily because of political motivations or an unworkable system but in the nature of things as illuminated by a particular metaphysics. A dialectic between locality/materiality and relative universality takes time to overcome.

Time here is not the Newtonian container in which events occur, but is made by events. To Whitehead an event is a society, an actual route of historic occasions, and he gives a molecule as an example (1929/1960, p. 124). Empathy or lack of it, locality/materiality such as state legislation, constituents and interests contribute to 'the inertia of change', the persistence of these mediators.

Ecosystem events such as drought and tides have their own proper times which must be conformed to in a tyranny of time. It was hinted that ministers with non-agricultural backgrounds may have found this hard to appreciate. Time frames for organising another program did not include local and seasonal temporal peculiarities like Christmas closure for contractors, the wet season in northern Australia, and harvesting in the Western Australian wheat belt⁷⁴. In NAP, remediation times for dry land salinity were at least 10-20 years, longer than the program's duration (ANAO, 2004-05). Whitehead's philosophy of organism and Latour and Serres work enable theorisation of isolated instances as intrinsic to the local/material.

The Commonwealth as 'more removed', the indulgence of distance, is more likely driven by other times. Perhaps the technical committees in Botterill's research (2007) owed their harmony not only to shared subject matter but a notionally shared phasing imposed by their shared objects, instanced here by long experimental times. Formal policy arrangements were slower than the 'fleeting influence' (Robinson et al., 2010, p. 16) of direct communication by those of like mind in informal collaborative networks. The former is more stabilised, made more inert, by locality/materiality while the latter is less so.

Category spanners across relational voids. A state participant described the translation/transformation as '*endlessly* (participant's emphasis) trying to figure out how to fit the state priorities and the Commonwealth priorities together so that something constructive can be done' (participant's emphasis). Some people 'shuttled constantly back and forth to Canberra to try and find ways of keeping worthwhile things on the ground happening despite the

⁷⁴ "“No Minister” is hard to say and it looks like: Oh God here come those public servants again. They're just telling us not to do this””(interview)

continuous changes of the background politics and agreement'. They tried to maintain continuity with an overarching goal of technical soundness.

So while ministerial attention was sparser and more generic, officials' attention was directed towards shaping the policy agreement productively. Another said that: 'We all wanted what was best', recalling moral dilemmas where there is 'often no right thing to do, all we can do is "act for the best"' (Williams, 1973, p. 173, cited in Hogget, 2006, p. 186) and live with the conflict that cannot be resolved. Both governments wanted better outcomes on-ground. Something that 'comes through a lot' (interview) was that all wanted to work together to get these results.

After some meetings when there had been 'harsh words' between officials at the 'high bureaucratic level' (interview) at the end of the day, when 'there was still a lot of tension in the room', two peers would go 'down' to an office because they could 'see where things are at upstairs'. 'But how are you and I going to make it happen?' (interview)

Two senior managers, let's call them Bill and Ian, in two different organisations formed what was effectively a collaboration to deal with unresolved issues, to keep the policy translation/transformation going. One said to the other: 'We're the mugs who have to make this work'. They were now Lipsky's street level bureaucrats and the boundary spanners in a translation/transformation.

'We worked, we worked *hard* at making it work' (participant's emphasis). How did they do it? Bill and Ian trusted each other. 'It was that sort of open and frank' (interview). There was not necessarily agreement with the other's government policy perspective because 'they might have a completely different view themselves as an individual and sometimes we express our views as individuals. We say: "Well, look. This is what the minister wants and we've got to bloody well go and do it"' (interview).

'It is understanding and having that trust' and being able to say that 'this is not the way we would like to do it but this is the way we have to do it to put in place to make it all happen' (interview). If there wasn't trust then you would be a 'straight down the line public servant' and not as open.

Officials could become faceless to others and objectify them by ‘blocking out unwelcome detail’ (Whitehead, 1929/1960, p. 154), without anger or favour. Individuals would be ignored and regarded as one nexus, turning many minor differences into one major, one-size-fits-all difference. Then there was an alternative: ‘So it’s appreciating the other person’s position, not necessarily agreeing with it, and trusting that that person is going to do the right thing by you in the long run’ (interview).

Contact relied on that ‘day to day, hour by hour literally sometimes, emails, phone calls, and face to face meetings wherever and whenever we were able to’ (interview). Visiting by themselves, other staffers individually, and occasionally as teams, was done deliberately to build up a relationship, recognised as an ‘important aspect of delivering it’

In addition to Lindberg and Czarniawska’s (2006) mimetic (visiting) and cognitive (telephone and emails, and unmentioned documents) translations, these were moral (trust and acceptance of joint responsibility), temporal (day to day communication and the assumption of long term trust), and purposive (effort to a common end). The tense atmosphere of Commonwealth/state relations was thought to be distinctive and both found the going heavy (emotional). It resembled the tug of war of ‘crucial and difficult’ relations (Robins et al., 2011) perhaps expressing federational dysfunction. Blame could be in the air I surmise, if Serres’ ball stopped with them, ‘the mugs’ who had to make it work.

Silos may signal something else. Earlier I have mentioned Mol’s exposition of an object being performed as different realities depending on whether it was weighed (heavy), sliced (fleshy), or ‘bombarDED with ultrasound (thick and opaque)’ (1999, p. 77). These performances were effectively silos. As she observes, technicians performed these irreducibly different realities side by side, or they were even performed by the same technician without demur. It may be asked if vertical silos demark different performances of different realities, separated by relational voids, potentially making more than relatively superficial horizontal relations not so much problematic as incidental. The two boundary spanners, Bill and Ian, were team building and cementing communications electronically, but for most, like state participants at COAG Ministerial Council meetings, the ‘real work’ (Botterill, 2007, p. 192) was elsewhere. ‘Levels’ refer to dense interaction and maintenance of isopleths, otherwise airy as Serres’ clouds, like the expressed hopes for horizontal trust, not so much a manifestation of horizontality but of contrasting deficit. It may also be asked, as a next theoretical step, to what extent states are

performed along these lines. Tasmania has been patronised since Federation. NSW has 'different homes for things'. Policy was weighed by Victoria but not by Western Australia which was manipulable.

DISCUSSION

A general pattern of relations emerged in the translation/transformation based on who each participant met with, what they said they did, and what their key issues were. In some cases there was a broad span because of other affiliations and previous employment. It could be expected that the more general the sphere of relevance and less specific locality/materiality the more senior the person. While language was not examined in detail, however there seemed to be a mixture of a 'language of responsibility' and specific details. Generalities of salinity, biodiversity, and water quality were talked about much more than actual creatures (kangaroos, weeds) and apparatuses (monitoring bores).

Painter's 'peculiar mix of mundane details and high principle' and Shergold's 'high falutin rhetoric and bite size chunks' of 'nitty gritty' will be recalled. A similar pattern occurred in the examination of responses to Question 9 on adaptive management with personal experience and particular examples mixed with theoretical descriptions. As with the IUD committee, the more general language enabled participant discussion to proceed, with me at least, but probably more widely in a translation/transformation of world to word.

There is a pattern of attempts to impose or continue a difference in order to create or continue a hierarchical gradient of differences, isopleths. Figure 2, the diagrammatic prototype for this analysis shows a horizontal gradient of differences, a translation/transformation, with 'a trade-off between what is gained and what is lost at each information-producing step' (Latour, 1999a, p. 71). The increasingly dematerialised and unlocal but still present forest was propelled along a complex and historic route of actual occasions, necessary for its realisation (or increasing its reality) by *making such a difference*.

Similarly the policy nectar makes its way from COAG to on-ground. It cannot be emphasised enough that policy is not only that which emanates, signed off, from the vertex of a governmental hierarchy, but that which is performed, decreasing the difference between rhetoric and nitty gritty. As a society it appears in all sorts of matters and makes all sorts of things happen, this thing designated as NHT2/NAP.

Differences were registered on a gradient. Perth Region NRM was attentive to *sub-regional* members' concerns and used accountability to demonstrate expenditure by project. However these more local groups had felt disenfranchised—overlooked—by two other relatively more universal regional bodies (Johnston et al., 2006). The state was dissatisfied with Perth Region NRM, because it was overstaffed, too focussed on doing, but not in the proper localities, or on the right things, and behaved not merely as a contractor. A participant recounted that they 'were always telling everyone that they were different' to the other five regional bodies, based on attributes such as being largely metropolitan, which he found 'frustrating' presumably because he wanted all regions to be the same form or passive intermediaries. It didn't seem to know its place.

Western Australia felt disenfranchised through lack of consultation and representation, by federal government and national bodies respectively. Lack of representation is more than just a feeling, but a shorter chain of translation/transformation with perhaps the relatively universal now either doing it itself, or omitting altogether the tasks of locality/materiality. Bateson's example is of the Chief of Police handing out parking infringements, or 'jumping' in Latour's term, between logical types (1979/1988).

The Commonwealth's 'switch and swap' short termism was problematic for the relatively more local/material *state* because of the 'inertia of change'. It was even more so for the even more local /material *regional groups* who were first swamped by NHT2/NAP funding and then threatened by its withdrawal.

For the Commonwealth, there is not *that* much difference which could have been made to the NHT2/NAP program by the incoming federal government because of the widespread involvement of people around Australia and the political impact of any major change. What constituted major and minor change depended on proportionality (no jumping) and the standpoint of the observer.

Participants said that *the states* didn't work together as did Botterill (2007) In NHT2/NAP dealings with Western Australia, it was thought that *state departments* concerned didn't work together making it harder to reach agreement. They didn't work together in Robins et al. (2011) either. Participants thought that there was 'a lot of infighting in Canberra between the different agencies and the different ministers' (interview) which taken together with turnover of officials, made it hard to develop relationships and understanding.

The state didn't think that the regions worked together and wanted them to do so. Participants thought that there was 'disunity' (interview) between the regions. In Perth Region NRM there was 'a lot of tension' (interviews) between the sub-regions. It seemed that the relatively universal wanted a Whiteheadian smooth running chain of truth from it to the relatively more local and material, if only because then they didn't have to make or finesse these to do it.

The Commonwealth agents patronised state agents who patronised the regional bodies. Perth Region NRM didn't feel patronised however. The politeness and gentility of the people of Canberra were contrasted with the roughness of the Western Australians, manners conventionally marking hierarchies of minor difference (Blok, 1998). Lesser ranked employees were patronised by the higher ranked or humbled themselves as being of lower rank. Patronisation produces a congenial uniformity of inferiors with no individualising details. Government as a whole was said to patronise the community.

Paternalism is not quite the same as patronisation but has in common with it, presumption of the inferiority and immaturity of the children. 'There is an attitude comes across that they [the Commonwealth] are the parent and we [the state] are just aberrant children' (interview). Tingle refers to the Australian habit of 'state paternalism' (2012, p. 33). The metaphor was used to describe growth and learning as roles were exchanged between the government centre and the learning children (regions) who grew up and surpassed the government parents.

Some scientist administrators patronised both 'up' and 'down' based on their grasp of science as the truth and the facts in environmental management by comparison with local and administrative knowledge and the environmental 'passion' (interviews) of community people. Passion was compared disadvantageously with reason but also in two interviews given as the glue that kept the regional group together.

Perth Region NRM was praised for astutely accessing scarce and expensive technical knowledge for free, an ingredient thought to have reassured the state administration about its projects. Technical knowledge was used to gain advantage in discussions as a point of difference and to patronise regional representatives and for example, their 'passion [and] belief' (interview) that 20 hectares here and 50 there of tree and salt bush planting was as good as scientifically targeted planting in remediating dry land salinity. The regional person 'basically didn't get it' and was 'quite shocked' that planting needed to be targeted (interview). Furthermore, 'if public dollars are to pay for it, it has to be a public benefit'.

Last, the east patronised the west. To repeat: 'They consider [...] that we don't need representation' (interview). The equal, and the distinction was made between *fair*, and not *uniform*, treatment of the states by the Commonwealth and the regions by both, was ostensibly and legitimately to avoid difference but indeed may have enhanced it. Western Australia requested recognition for fair treatment with regard to previous expenditure on remediation of dry land salinity, resulting in an intergovernmental spat, reported in the national press. Regions experienced uniformity, indifference to difference, rather than fairness.

Groups maintained a gradient of horizontal difference epitomised by the reported seating arrangements at Perth Region NRM where government sat on one side of the table and the community groups sat on the other. A participant described community groups who wanted to save their lake and nothing else, until it dried up and then the next lake within walking distance became the transitional object. To repeat: 'It's very hard to have a rational conversation with someone who is so desperate' (interview).

This participant saw a gated wall in Belfast, still there in 2008, between the Falls Road and Shankill Road and running parallel to them. A legacy of The Troubles, it was still locked every night at about 9 o'clock in the evening and 11 o'clock at weekends. 'So it's electronically locked. And at the first spark of trouble it locks' (interview). The taxi driver, who was telling him the story, said that when this happens it can be a 'bloody nuisance' because if you're on the wrong side you have to go four kilometres around. When asked if he thought the wall would come down, he replied: "'Not in my lifetime'". He was so definite that they would never see the wall come down in his lifetime'.

There was no difference in what happens in Belfast, it's a bit of an extreme example but what happens within these community groups. They can't see that working together is better to solve these issues. It's very much about my lake. And my lake is more important than your lake. [...] I don't see them giving up any bit of their lake' (interview)

The participant concluded that the community groups would never work together either. He observed that it was 'very hard to bring all these groups together', partly because there was no common purpose, thinking was 'insular' instead of 'big picture', and there were no state director generals on the committee so that there was no external decision-making feedback, the 'touchstone' alluded to by another.

However as previously noted, after three years, ‘the more considered view that there were other things to save’ (interview) prevailed suggesting another ebb and flow. Consensus was achieved about joint sub-regional effort through a process which ‘worked’ (interview).

Achievement of ‘a bigger picture’ is a higher logical type, a different punctuation of experience, or level of learning. The scenario of the gate shutting automatically and the taxi driver then having to go the long way round, exemplifies Zero Learning (or habit) that is, ‘simple receipt of information from an external event in such a way that a similar event at a later and appropriate time will convey the same information’ (Bateson, 1972, p. 284). Like Bateson’s noon whistle signalling lunch, the shut gate teaches the taxi driver that it is 9.00 pm or else ‘trouble’ and means he has to take the longer route. Consequently adaptation, may occur at quite a high level of complexity with zero learning, and no novelty. How does this occur and why is it relevant?

The society of gate/driver/wall/trip is stabilised (black boxed) through this specialisation because it responds in the same way to the same signal, an economy of activity, navigating rather than wayfinding. Similarly the relative sameness produced by each of the devices Latour mentions as used in translating the forest, is specialised and stable provided it is used in the same way. Zero Learning is a plus, enabling persistence of a relatively stable, complex but specialised society. ‘Thus the problems [sic] for Nature is the production of societies which are structured with a high complexity and which are at the same time unspecialized. In this way intensity is mated with survival’ (Whitehead 1929/1960, p. 154). As the society can’t learn and so cannot take on new functions, its survival is threatened by important changes in its environment. Zero Learning excludes trial and error (stochastic processes) or admission of novelty, unlike the other types of learning. It reproduces the order of the past.

A Zero Learning society blocks out ‘unwelcome detail’ (p 154), by ‘eliciting a massive average objectification of a nexus, while eliminating the detailed diversities of various members of the nexus in question’ (p. 154). ‘It depends on the fundamental truth that objectification is abstraction’ (p. 154). The Boa Vista forest becomes more specialised.

People on the other side of the gate (or table) are abstracted as either ‘us’ or ‘them’ without their locality/materiality. The strategy turns many minor differences into one standard difference. ‘It ignores diversity of detail by overwhelming the nexus by means of some congenial uniformity

which pervades it. The environment may then change indefinitely so far as it concerns the ignored details—so long as they can be ignored’ (p. 154), that is, the black box does not leak. The solid wall allows each side to objectify by abstraction, dismissing the other and the environment as ‘*one* nexus, and not in its multiplicity as *many* actual occasions’ (Whitehead, 1929/1960, p. 154). One size now fits all as a kind of summary. The societies on each side bolster each other and become more entrenched as ‘them’, or form without detail.

Objectification by omission of these unwelcome details through abstraction, describes how each hopes to turn the other into a passive intermediary by disowning some pervasive ‘congenial uniformity’ (p. 154)—them/their lake—bolstering the survival of us/our lake. The Commonwealth’s ‘switch and swap’ also in this way objectifies locality/materiality. Perth Region NRM’s claims to uniqueness are dismissed. The strategy excludes most novelty but not quite all. The silos had a few ‘category crossers’, the ‘leak’ of Latour’s black boxes.

Freud’s narcissism of minor differences ‘manifests itself in emphasis and exaggeration of subtle distinctions vis-à-vis others with whom there are many similarities’ (Blok 1998, p. 48). I have mentioned his ‘campanilism’, the avowed difference despite their similarity in all major features, between village people who live a church bell away. At Cambridge University colleges ‘one is encouraged, even expected, to see one’s own institution as *unique*, a tendency which is strengthened by differences in local customs and titles’ (Dell, 1987, p. 74 cited in Blok, 1998, p. 37, my emphasis). Both attempt to distance the actant or quasi-object of human plus nonhuman from the similar others, and to objectify them as an undifferentiated mass, a ‘them’, mating intensity with survival (Whitehead 1929/1960).

Some examples in the thesis of the narcissism of minor differences have already been summarised. Others included the limited cooperation in Swan River governance attributed to the Swan River Trust which ‘doesn’t listen’ and a preponderance of bilateral SNA ties with no shared ties with a third party. Blocks ‘talked past’ each other (Robins et al., 2011, p. 1306) or seemed to objectify them. Regional groups were said to be slow to act jointly when their survival was threatened by reduction of NHT2/NAP funding, said to be because of strong individual group leadership and perhaps because of minor differences.

The Australian federation is almost a recipe for the minor differences which I have described as *personae*.

It is always handy for the Commonwealth to be beating on a bolshie state or two. A good example is Great Barrier Reef stuff where the voters in Sydney and Melbourne love to hear about the Commonwealth government getting tough with Queensland to protect the reef and Queensland voters love to hear about the Queensland government standing up to those cockroaches in Canberra. (interview)

The figuration occurs in two steps. First there is a readiness for mutual objectification. Blok cites Schopenhauer's parable of freezing porcupines huddling together for warmth but the closer they get the pricklier it becomes so they separate again. Bateson uses the example of an unfertilised frog's egg which contains an '*immanent question*' (1972, p. 396, emphasis in text) about the outside world which it has a '*readiness*' (p. 396, emphasis in text) to answer, whether it is by a brush bristle which can fertilise the egg, or frog sperm. 'Readinesses' exemplify *relationality* of learning, that is, the 'retaining capacity in the process [...and] *links* different states in the process of change' (Weik, 2011, p. 668, my emphasis). In Weik's model change is 'the actualization of potentialities that creates a modified being from a previously existing being' (p. 668) and has two aspects, relationality and activity. Becoming differs from change as it 'creates being from non-being' (p. 668).

It is not just the closeness, but the continued expectations of warmth met by quills in a sequence of actual occasions. The retaining capacity is the readiness, perverse or not, which enables and links succeeding states as the 'we feeling'. By my understanding, each readiness is of a higher logical type than each instance of it and enables repetition of the whole sequence from the first, entrenching the porcupines ever-deeper into a chreod or necessary path.

'Each phase in the genetic process presupposes the entire quantum' (Whitehead, 1985, p. 283 cited in Weik, 2011, p. 663). In other words: 'To act or be one end of a pattern of interaction is to propose the other end. A *context* is set for a certain class of response' (Bateson, 1972, p. 275 emphasis in text)⁷⁵ or the link between different states. The porcupines are secure but never learn.

⁷⁵ Whitehead gives the example of a tuning fork eliciting a note from a piano which already has a string tuned to the same note. A participant in my research described practical action as 'what hits a chord' with the predominant 'down to earth' people involved in the regional groups. 'In the same way the expressive sign elicits the existent intuition which would not otherwise emerge into individual distinctiveness' (Whitehead, 1996: p. 133, cited in Stengers, 2008, p. 106). The existent intuition is an eternal object, and I have instanced helpfulness.

Another example is of a nagging wife and withdrawing husband. The more she nags the more he withdraws and the more he withdraws, the more she nags (Watzlawick, Beavin & Jackson, 1967). The survival of the relationship depends on changes in both. If one stops doing what he/she usually does, survival of the relationship between them is jeopardised (Bateson, 1972, p. 339). Bateson regarded these kinds of relationships as almost impossible to change because again, each instance presupposes the whole series of differences. Incrementalism is more likely to succeed as continuation, or Weik's 'change', without catastrophic loss but with no becoming in her sense either.

A participant's astute observation 'that they are not warring states' draws attention to the relative harmony between states, Commonwealth and states, departments and regions, something taken for granted. There is bickering, acrimony, 'contentious negotiations' (ANAO, 2004-05, p. 13) and contestation (Robins et al., 2011) but no violence.

Freud thought of the narcissism of minor differences as a relatively harmless satisfaction of aggressive inclinations. However Blok proposes that 'the imminent loss of differences precedes the use of extreme violence' (p. 46) instancing the Balkans after the break-up of Yugoslavia, amongst others. Minor differences rankle but keep a society together with historically knowable regularity, better at the time, than a risky attempt at Learning II. These two registers of feeling are discernible in the relations discussed.

The *marriage* is an *enduring object* a sequence of sequences, connected by the relative and habit-like constancy of readinesses and slamming doors which resource it as a society. Indeed a participant in my research surprisingly used marriage to describe relations between the Commonwealth and some of the states in NHT2/NAP in which Western Australia remained the only 'puzzled partner', alluded to before.

The succession of states comprises a society, a sequence of linked but identifiable states. These 'endure and keep their mutuality together in a specific manner' (Halewood, 2011, p. 87), which both changes and remains the same (Law and Singleton, 2005, p. 338) just like the squirming porcupines. The next question is whether the *more* the ALD changes, the *more* it recognisably stays the same, like the porcupines, the married couple, and the ebb and flow of centralisation and decentralisation, or much more speculatively, the Commonwealth of Australia.

The figuration of minor differences is difficult to detect as a pattern of patterns or Bateson's Learning II. Law (2004) suggests allegory and the participant's allegory of Shankill Road certainly drew my attention to a classic example of a terminating system which is stable or enduring as it oscillates between two extremes (Waddington, 1977).

In Western Australia the environmental collaboration started out with such high hopes and ended in 'bitter realism' (interview).

I suppose reflecting back, the mistake we made was in being too idealistic five years ago and making this quantum leap from where we were to what we put in place. We just didn't let the pendulum swing slowly. We just pushed it right to the other end and now we have to bring it back. (Interview)

A participant's reference to Putnam (1993) contrasted more recent government obsession with accountability, control and hierarchy with the looser, wayfinding of Northern Italy where the journey was better than arrival. In another example a participant referred to the decentralisation and empowerment of others and then government 'claws it back' in a 'perennial thing'.

I think it [Caring for Our Country] is confounding what was in retrospect increasingly seen as a very brave experiment by both governments actually to pick up some of the funds and some of the authority and give it to regional catchment groups, and secondly it recentralises and brings a lot of administration and decision making back to Canberra which is very remote from the reality of the issues of the catchment, irrespective of how people in Canberra feel that they know it *all* and they don't.

Do you think that, how would you, if you had to pick a mechanism, or something how would you describe that?

[...] It just keeps... It's like a tidal system. It just comes and goes. (interview, participant's emphasis)

Strategic alliances, broadly defined to include partnerships and collaborations are 'subject to multiple, contradictory, and largely unmentioned tensions' (de Rond & Bouchikhi, 2004, p. 59), conflicting forces which 'just are' and which 'we think, merely co-exist' (p. 66). Their examples include a mixture of moral notions such as vigilance and trust, compromise and conflict, control and autonomy, competition and cooperation as well as more cosmic forces such as expansion and contraction, design and emergence (see Figure 1, p. 66).

De Rond and Bouchikhi attribute these dialectical forces to the 'plurality of interests' which individuals bring to alliances (p. 66). Government as continuously contested public purposes as groups and anti-groups argue about our lake, our river, and our turn, not to mention that government—'they'—should do something about this for us, could benefit from understanding

how these forces work. These authors also talk about the swing to a contrary configuration and conclude that alliances are 'best thought of as a largely unintended succession of peaks and valleys with no predetermined progression towards a final state' (p. 66), the ebb and flow.

CONCLUSION

The personae and *amour propre* of the sovereign Australian states, signal habits, Zero Learning, minor differences. By these accounts, the states ignore each other most of the time and the federation is taken for granted, a matter of fact. Discussion is on-going about whether it would be more efficient and effective without the states, relying more on local government, the more local /material end of the federation. The metaphysics of translation suggests that the federation could be made less real by reduction in chain length and 'jumping' if the states were disbanded. Translation/transformation is a fragile achievement and easily disrupted, as evidenced by events surrounding the new program, Caring for our Country.

Allegories are able to assemble the present and absent, make multiplicity single, enabling it to be worked with. We are made aware of something other than what is actually being said and Law refers to it as perhaps '*the mode of discovery*' (2004, p. 98). It is about the '*apprehension of non-coherent multiplicity*' (p. 98, emphasis in text), whether as ALD or adaptive management. Allegory enabled recognition of a dynamic between 'ebb and flow' and 'the pendulum', as the swings of relationality between centralisation and decentralisation. The actual workings would be a fruitful research project especially in the relation between dialectical forces and minor differences in strategic alliances, bearing in mind the amount of work done to maintain minor differences, an equal amount would need to be put into changing these relations, not without its dangers for the alliances.

Schopenhauer's porcupine allegory makes the multiple single but also the single multiple. It invites the reader to follow an inevitable repetitive movement between the 'we feeling' and the quills, otherwise unknowable.

The Chinese style of brush painting 'allows the brush to express to the full the liquidity and immediate flow of the ink' (Bryson, 1982, p 89 cited in Chia, 1998, p. 361) and so the viewer may follow it too, backwards and forwards between the more material, the brush strokes, and the relatively more general, 'the picture'. The tip of one translation/transformation is inside the other as the inflexion, the flick of thought, the mediator. In oriental terms the symbol of Yin and

Yang shows the tip of each within the other, with Law's 'absent' never entirely absent, but minimally present as the principle of novelty. 'We are in the world and the world is in us' (Whitehead, 1938, 227, cited in Halewood, 2011, p. 52)

Chapter 9: Conclusion

WHAT CAME INTO SIGHT

Wayfinding as method

In my early painstaking comparison of Yin and Stake's methods, I made a note of Columbus' application to Queen Isabella as Yin's prototype of good research. Columbus specifies the number of ships he needs, where he is going, and how he will know when he gets there (see Box 4, p. 25, 2003). However this description of what should be decided in advance of the research didn't tally with what Columbus actually did and was more relevant than I realised.

On his first voyage Columbus navigated as far as the Canary Islands and then was a wayfinder, as he sailed in uncharted waters. Landing in the Bahamas and Cuba, he allegedly thought these were the Orient. His research had not gone according to plan and neither did mine. I had thought of case study methods as reliable entities which I would use to navigate towards a waiting but unknown reality which I would then report.

In this exploratory research I have related some portions of how the transition to naïve realism occurred in order to maintain the feel of wayfinding through Latour's 'vast ocean of uncertainties' (2005, p. 245). As he says, we have no idea about the sort of social science required to understand our chains of attachment to earth and this was my own research experience. The topic was concerned with some of these fragile chains, namely the relations in NHT2/NAP, and the thesis is the story of methodological wayfinding and the encounter with naïve realism.

Law suggests a quieter, slower and more poised approach to research, which includes doubt and responsiveness to subtle cues. Shotter describes our need to be 'oriented or related to our surroundings' (2009, p. 237, emphasis in text) which following Todes (2001) he calls 'poise'. I became a different, more poised researcher, who pays more attention to her abstractions. Perth Region NRM was not simply located in Midland (Whitehead's situation of the object) but was in a sense, present everywhere (situation of influencing). Case study, was not a simple object either, but like the IUD, was both single and multiple, or better, both subject and superject.

Examination of location uncovered the bifurcation of nature, Stenger's bane of modern thought. The proposal to study interorganisational collaboration with organisations as entities and humans the sole means of doing the relating became logically inconsistent. Naïve realism allows for a

world in which there is nothing *but* relations, including non-humans, which solves this problem but clashes with Cartesian method.

Social science as usually practised means that a researcher can never find the Americas because 'it is not possible to know messy objects' (Law & Singleton, 2005, p. 333; Law 2004, 2007b). '*Our methods are not geared up to detect or know [them]*' (p. 333, emphasis in text) for example ALD, or adaptive management, both complex societies in Whitehead's term. Naïve realism requires different approaches, as Law (2007) suggests about actor-network theory, more a sensibility. I would now describe this, taking a cue from grounded theory, as respondent-directed, including things: as Latour says, we learn from them. The trouble is objects are quite chatty given the chance, making for slow progress.

Law examines the 'common sense realism of research' (2007a, p. 597) in which there is a reality, 'out there', which precedes attempts to know it; is definite; singular and more or less shared; and is independent of us and our perceptions. It is not the same as reality 'out there' dependent on our actions. If as Whitehead says, we are in the world and the world is in us, facing possible environmental catastrophe, the notion of this independent research world needs to be systematically opened up.

Most social scientists work within this metaphysics of common sense realism, according to Law. Constructivism, the basis of qualitative research, itself quite exotic, is a minority interest. Once attuned to customary realism and its potential alternatives, it is possible to compare the disadvantages and advantages of each (Weik, 2006). Rather than a dogmatic split between qualitative and quantitative research for example, researchers could juxtapose different standpoints, rather like supra-scenarios. Having said that, I found it difficult to maintain my earlier tenuous grasp of naïve realism in my biophysical/economics oriented workplace at the time because of the 'calcified' division of reality into academic subjects (Halewood, 2011, p. 8) and professions.

What did I set out to find?

The chief objective of describing how two levels of government and an incorporated catchment body implemented adaptive management in an environmental collaboration has been addressed. To an extent the question was wrongly asked because actually there was a series of nested contracts/agreements through which the Commonwealth and the State of Western Australia agreed to perform certain functions in NHT2/NAP. The state in turn contracted Perth Region

NRM to perform these. Perth Region NRM contracted government agencies, amongst others, to undertake some tasks and volunteers did others. Intermittent governmental collaboration occurred (the Bill and Ian story, and the JSC), and non-governmental collaboration through Perth Region NRM's reference groups (the 'our lake' story).

The research question asked how the theories of action between government and regional bodies influenced the relationships. I expected that these theories would be people's mental maps of espoused and in-use theory (Argyris & Schön, 1978). I have described how this thinking was overtaken to include materiality, examination of otherwise hidden relational micro-processes, and alternative data treatments.

Where to start

The researcher has to start somewhere. The quotation from Shotter (2009) heading Chapter 1, written with regard to bodily readiness, described the need for 'a new way or ways of looking' (p. 241) at new forms such as texts or music in order to 'to see in it or them the possibilities they might express or portray' (p. 241). My emphasis was on changing my readiness from seeing feelings as personal and rivers as entities to understanding them as networks, objects or societies. What I wanted to get was a means of registering what they said, as 'a new event' (p. 241). I needed 'a *manner of search*' (Bateson, 1979, p. 99, emphasis in text).

Interviews used as both feasible and navigational, were perturbed by some unique events which included repeated mishearing of interview tapes. This recalled Latour's scientists' mistrust of their intelligence and reliance on intermediaries in the Boa Vista Forest. Ironically Kvale and Brinkman's exposition exemplifies a translation/transformation—including intermediaries such as recorders and software—of local and material sounds and situations, into a circulating text but they dexterously eject objects from their phenomenological proceedings.

The bricoleuse uses and appreciates what comes into view. Taking mediators seriously, Latour's obsessive literalness (2005), and concentration on micro-processes depend on noticing. 'Quite simply *mapping*' (Ingold, 2000, p. 231) is not only processually consistent but also an ethic. How does noticing happen, under what conditions, and how may it be encouraged? 'Intuition' is an unusual research virtue, although Kvale and Brinkman refer to it (see p. 278, Box 16.3, 2009). 'Coming-into-sight' (Chia & Holt, 2009, p. 164) relies on crystallisation of the nascent (Stengers, 2008, see p. 106), which could be explored further as an ingredient in Whitehead's philosophy but not Latour's. A key moment was my noticing, or 'communion of intuition' (p.

107)—or freeze frame—with the word ‘amplification’ in text and interview, giving a clue to transformation/translation.

Data ordering techniques drew on sociology, qualitative social science research, and actor–network theory. The techniques used are all data near, not thematic, not causal, and useful in process research for attending to connectivity. Other researchers provided clues as what to look for as plug ins, or prototypes, which enabled comparisons, particularly Lindberg and Czarniawska (2006). Their categorisation was a ‘pattern of connection’ (Bateson, 1979, p. 18) of connectivity, namely mimesis, cognition and emotion. The need for trust in connectivity was often mentioned introducing a *moral* connection. *Temporal* connection occurred as ritual afternoon tea and there are probably more kinds of what Whitehead calls causal efficacy, ‘a passing on of data, of reasons, of motion, of feeling’ (Halewood, 2011, p. 55) which could be explored.

What did I find?

The necessity of things. Examination of object relations introduces new relational possibilities. Lockie (2007) asks how actor-network theory can contribute to practical environmental decision making and proposes that people act as spokespersons for the environment. However nonhumans are not humans’ handmaidens but are decisive in the endurance of society.

Harman’s likening of translation to the transmutation of Arabian oil into something intelligible to the internal combustion engine (2009) implies something more subtle. How do humans translate themselves into something intelligible to ecosystems? In my research, the reverse often applied with clock or calendar time trumping the temporality of natural events in quarterly submissions, the NAP dryland salinity program, and the ‘inertia of change’ in locality/materiality. My analysis of adaptive management was not envisaged as an answer to this question, but it is, and could be reconsidered accordingly.

Objects make different realities. Object performances make different realities, side by side. I experienced this extraordinary idea at a large eye clinic at dissertational midnight. I had been escorted from one machine to the next and was squinting at a travel article outside the specialist’s office when it hit me. In this translation/transformation different eyes were being performed in different offices, with different equipment, side by side. Tomography performed a topographic eye showing the dips and bumps of its retina. Using other equipment the Humphrey Field Test extracted performances of peripheral vision from each eye. In the next office an optometrist agreed about the production line but I lost him with the different eyes and he said he

liked measuring things. Each local material eye became more real, more textual and comparable as a nectar, a less complicated reality, intelligible to the eye specialist. He assured me that against the gold standards of calculable, absent, healthy eyes, mine were fine. I gave permission to use these results for research generation of a relatively universal eye, separate from its personal socket, at other times and other places. To me, my eye was virtual, either observed in a mirror as an absent presence, or rubbed and felt as a material presence with vision absent.

These different realities—not just perspectives—are hard to discern because of habit. I have mentioned some possibilities (the Arcadian river and the polluted river) but now I would go prospecting as follow up research. Were different realities, not only cultures, performed by the different departments in the SNA for example, or in any clan-like silos, such as the Australian states? Mol's ontological politics *may* be signified by the conflict found in the SNA and public service *dilemmas* over which performance will become reality: 'Itself' (1999, p. 77). I have claimed that minor differences were produced from universality but now wonder what or if they say something about different realities, produced side by side.

In another key, we learn from the actors by following them. I followed regional strategy as a quasi-object, including its bookish performance as a heavy object. Across the entity barrier, NRM too was followed. Both were used to organise data and test beds for the idea of object relations. Analysis of them produced something single (more fact-like) and also multiple like Dugdale's IUD which enabled their negotiation and discussion, and indeed their coherence as objects. These and other objects are summarised in Table 11 together with some suggestions for further research.

Adaptive management. Adaptive management is a series of foci and versions included groups of people managing projects; other groups on-ground; scientists who do both these differently; officials who by their own account were doing more different versions of it; and American courts which may potentially change the final agency toggle to the adaptive dial.

Localised Learning II in the adaptive management question was important for connectivity and two examples follow. Rather than wholesale change, these micro-processes showed switching from Ingold's navigating—travelling across charted waters to a known destination—to quite simply *mapping*—wayfinding—and then via charting to navigating again.

- Adaptive management was 'seeing the links' between charted performances and a potentially new route to another perhaps mutually desirable performance, then using *this*

performance to navigate (Learning II). The participant then ‘linked the links’ between the two instances he gave me. Meanwhile, the researcher was making a few links herself as she charted this novelty aided by participant, paper and pencil (Analysis I, pp. 171-179).

- Return to the centralised and restricted learning loop of Caring for our Country after adaptive management as Learning II by catchment groups nationally (Analysis I, pp. 168-170).

Other examples included two instances by Perth Region NRM, namely:

- management of small business water pollution as NRM; and
- reinventing a project ‘which kept on doing what it was doing’ (interview) by realising that land use planning was the answer and they had to stop doing ‘the wrong thing righter’ (Ison & Collins, 2008).

Another instance was the systematic second guessing used by a potential grant applicant to decipher the new program’s targets, which gradually ‘became obvious’ (interview), or ‘came into sight’ (Chia & Holt, 2009). This oblique approach was used to avoid compromising the grant program’s integrity by revealing advantageous information to some applicants and not others (Analysis III, pp. 207-213).

Further insights. The interview help given to me by some participants seemed to be new to research. Participant feelings, candour and sincerity were unexpected, indicating attachment to their part in the NHT2/NAP policy task, consistent with Neal and McLaughlin (2009), and the public good (Hogget, 2006). Nobody interviewed was indifferent, although they may have thought others were.

The participant who spoke about amplification also said that work could be useless if it wasn’t incorporated into something bigger either as practice or through its stabilisation in bureaucratic central, textual retention. These small instances are important in naïve realism because of the part/whole relation of Extensive Abstraction. ‘In a certain sense, everything is everywhere at all times. For every location involves an aspect of itself in every other location. Thus every spatio-temporal standpoint mirrors the world’ (Whitehead, 1925, p. 114). (Irvine, 2010, unpaginated). Stake’s naturalistic generalisation becomes more interesting as this mirroring.

The sensibility of actor-network theory and naïve realism recognises these instances and promotes more, just like fastening each interlocking element of a never-ending zipper. This

metaphorical connectivity resembles the zigzag alternation of matter to form (Bateson, 1979; Latour, 1999a).

Allegory revealed the theory of action. Allegory is ubiquitous, bringing to presence and amplifying (Law, 2004). My use of it was first prompted by a participant's allegory of the Shankill Road gate which enabled disparate observations about levels, state personae, and the big picture to be brought together. The theory of action within the collaboration, if these terms may be used, indicated a shared narcissism of minor differences talked about as patronisation and state, regional or sub-regional exceptionalism. It relied on Euclidean objects such as the efficacy of patterned versus incidental tree planting; local geography such as 'our lake', 'our own little patch', and 'our weeds' rather than their nationally significant weeds; our regional strategies; seating arrangements at meetings; simply located NRM works, preferably at iconic sites; polite gestures; scientific qualifications and employment; and possibly the researcher's choice of hotel. It also relied on non-Euclidean objects such as states which were not simply landmasses or map coordinates, but mediators making other actants do things.

The ebb/flow dynamic of Schopenhauer's parable evinces a pattern of absent presences: snuggled porcupines cannot occur together at the same time and place as discrete porcupines. One 'others' the other and allegory reveals persistence of the sequence as a kind of pulse. The reported flow of centralisation and decentralisation could be another of these dialectical forces which 'just are' (de Rond & Bouchikhi, 2004). These examples could be conceptualised as entrenchment of a gradient (chreod) which becomes untenable and changes phase to preserve the whole.

The Australian federation is said to be dysfunctional but it endures. How it actually holds together could be examined and compared as a strategic alliance beset by dialectical forces. Participants observed and experienced what Robins et al. termed 'troubled co-operation' (2011, p. 1310) which encapsulates this dialectic, in some intergovernmental-relations between state and Commonwealth officials. Said to be forced by program architecture, poor relations gradually improved and then diminished with the new policy. Comparison of the literature of federation with that of organisational strategic alliances would be instructive.

In instances of bureaucratic voluntarism between, amongst others, Bill and Ian, and in 'making the financial links' difficult relations were resolved. Governance is a broad term but these relations are an instance of it with officials sharing some responsibility for holding the federation together both as their job and because they made it their business. Lindberg and Czarniawska's

translation of health reform was paradigmatic of both connectivity and a successful collaborative public sector joining up, which as they say is rare, despite the rhetoric.

Important in early conceptualisation of my research was the idea of endogenous connectivity (Hernes & Weik, 2007) which Weik (2011) later classified as a mode of relationality. This is apt for joining up or horizontal coordination, where the parties rely on some bootstrapping across a relational void to make the translations. The notion of governance could benefit from considering relations as translation rather than entification.

Policy does not come ready-made as I have demonstrated. Connecting chains of translation are fragile—ontologically labile—hardly recognised, if at all, in program evaluation with the tacit expectation that history, that is reality, can be made to order.

CONCLUSION

Law and Singleton's ALD urges caution when governments attempt to coordinate messy problems. What, how and if coordination of fire objects like it, such as adaptive management, could occur may be informed by this kind of analysis, remote from public administration research and practice. The implications for policy and program logic of these fire objects could be considered. As I have shown, the philosophy of naïve realism provides a means of understanding the micro-processes of government as connectivity. Lindblom's muddling through is sympathetic to translation through 'no jumping' and by providing a more reliable grasp (prehension) through Shergold's *agreed* bite sized chunks.

Serres's quasi-objects with a societal stabilising role include war, religion, money, and a reciprocal contact with nature, but strangely not bureaucracy, identified by Weber (Gerth & Wright Mills, C. 1948/1977). In my research, officials provided instances of their role as stabilising quasi-objects. Important in governance, this too could be explored further.

This difficult but fascinating field has languished for nearly a century. It goes against the Cartesian and common sense realism grains, giving immense scope for experimenting with different procedures and escape from what Stengers describes as problems of our own making.

Table 12
Object relations

Object focus	How and why was it chosen and studied	What did it do?	What was learned and further research.
<p><i>Quasi objects</i></p> <p>Public servants as quasi-objects</p> <p>The Central Task Group (CTG)</p>	<p>Emerged through observation of interview micro-processes and literature.</p> <p>SNA in which I had participated was used to prompt stake-holder reflections for my research. The focus question concerned a dilemma; urban development versus amenity of the Swan River. The results showed unusually high levels of conflict between what I observed were mostly public sector bodies.</p>	<p>Procedures slowed by officials performing as intermediaries, stabilising society and potentially reducing violence. As mediators they speeded micro-processes with less stable relations at first.</p> <p>CTG became Serres' 'ball' which made the group and it as potential victim. CTG had most ties—was more real—performing multiple functions for other groups.</p>	<p>Deployment of multiple selves may increase with governance, potentially reducing impartiality and speeding things up. Red tape or formality slows and stabilises.</p> <p>This aspect of governance may be in train through (1) public sector Codes of Conduct leaving more to employee discretion and (2) Self's more capable officials. What is the empirical evidence?</p> <p>Conflict in governance is less studied (Ansell, 2008) but actor-network theory could elaborate it through macroactors (Callon & Latour, 1981)</p>
<p><i>Fire object</i></p> <p>Adaptive management</p>	<p>A principle of NHT2/NAP was hardly included in 13 national evaluations.</p>	<p>In the literature and my research it was multiply performed around foci rather than single with different perspectives on it as I expected. Lumpy and contradictory, it maintains the same and even different names.</p>	<p>Definitional singularity is only half the story. Potential confusion is caused by confusion of same-named logical types. Singularity and multiplicity enable discussion and progress, like the IUD. Fire objects and 'wicked problems'</p>

		Included administrative instances of double loop learning, otherwise hidden. 'Seeing the links' was adaptive management by another name with 'linkedness' as an eternal object.	(Rittel & Weber, 1973) may share commonalities.
<i>Mutable mobiles</i>			
Regional strategies	Significance to participants disturbed my expectation of them as books. Followed as an actor.	They endured through-out NHT2/NAP as spokesperson for the regional body, translator of on-ground to centres of calculation and vice versa for release and acquittal of funds. Also a Euclidean object: an expression of consensus: indicator of confidently navigating strategists; and latent sign of forced collaboration between state and Commonwealth.	Highlights how events become more real and social stabilisers. Plans as mere beings (black boxes) may be ignored but these strategies made relations and relations made them.
NRM	A tenet of environmental studies and practice.	Like the IUD, its singularity and multiplicity enables practice to proceed.	Single notions, when examined more closely are multiplicities which could be examined as different realities.
<i>Feelings as robbery</i>			
Concrescence	Transformation of what was there to what is here through (A) a flow of feeling from participant to researcher, and (B) as participant's progress in understanding inscriptions as part of his relations with government.	Shows intermittent, tenuous connections and propositions in phases of translation of the new policy into funding applications were revealed. Required equal treatment for all potential grant applicants was met by second guessing, both question and answer.	Research nuggets need time to find and feel the researcher and modify her experience. She has to have a readiness to be modified. The same was also true of the participant's readiness to intuit what was meant.
Co(a)gency	Co(a)agents (person, map with blob, ringing phone, documents) parasitised the	Departure from interview data-as-usual (Learning I) to what it didn't explicitly disclose but could be intuited as context of	Co(a)agents mapped as wayfinding phases (learning) could be developed for group process.

	interview proper.	context (Learning II) was common to (A) & (B). Showed three phases of participant wayfinding; quite simply <i>mapping</i> (targets as rumours) cartography (second guessing) and navigating (what to include in grant application becomes obvious.) Targetness as an eternal object.	
Translation transformation of NHT2/NAP.	The research topic.	Revealed levels, big picture, state's personae, and a federal allegory.	Levels signify stabilised and maintained gradients of minor differences usually vertical as layered hierarchies but not necessarily. They register minor differences as for example, patronisation, where close 'gradients' may despise each other but the more distant is to either too powerful to challenge or too insignificant to matter. Levels maintain continuity in the chain of translation/transformation and their loss may precipitate violence or collapse. They may be a ritualised form of violence, and the wrangling noted through- out the thesis, its civil manifestation. NHT2/NAP was a congeries, not one thing, with attempts to coordinate it and make it single ('one size fits all'). How is this specifically played out in programs and with what results in a federation and a state?
State personae	Emergent and unusual element of each state described by participants. An actual performance was revealed by a trial question on timing.	Enabled strategic comparison of federation.	States usually considered as geographic, located, socio-economic entities, rather than feeling personae.

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Appendix I

CURTIN UNIVERSITY SCHOOL OF PSYCHOLOGY

PARTICIPANT INFORMATION SHEET

Who am I?

Mescal Stephens and I am a PhD student at Curtin University in the School of Psychology.

What is this for?

I am studying relationships between state and commonwealth public servants and members of regional bodies in the Natural Heritage Trust program with reference to the Swan Catchment Council as a case study. These relationships are important in determining how decision makers learn and respond to environmental changes and I will ask you about them.

How did you choose me for an interview?

I obtained your name from referrals or an organisational list.

Do I have to participate?

No, it is voluntary and you may withdraw at any time.

How long will it take and where will it be held?

The interview will take up to an hour in your office or by telephone. I will record it but if this is unsuitable, I will take notes. Please ask if you would like a transcript of the interview and if you would like to make any changes to it.

The information sought will be about the activities of public servants and members of non-governmental agencies in their professional roles and not about them as individuals.

If you are agreeable, I would like the option of briefly contacting you a second time if necessary.

How do I know the information will remain confidential?

The interview is confidential although if you would prefer to be acknowledged I am happy to do so. Your comments will not be individually identified in any way. They may be combined with those from several people in the same organisation, or into a non-specific role across organisations, to obscure identity.

My supervisor, Associate Prof Brian Bishop, will be the only other person to have access to your name and the interview.

Information from interviews will be used in my dissertation and also potentially academic papers. Interviews will be transcribed (your name will not be on it) and kept in a locked filing cabinet at Curtin University for five years. Recordings will be destroyed once transcripts have been made.

This research conforms to Curtin University's policy on ethical conduct in research involving humans which makes confidentiality a prime consideration. The secretary of the Curtin University of Technology Human Research Ethics Committee may be contacted at hrec@curtin.edu.au.

Who can I contact for more information?

If you have any questions about this project please contact me or my supervisor.

mescal.stephens@postgrad.curtin.edu.au

Tel. 08 9367 2565.

Associate Professor Brian Bishop may be contacted at brian.bishop@curtin.edu.au or on 08 93336291

Thank you for your interest.

Appendix II

INTERVIEW SCHEDULE (1)

DISCUSSION WITH A MEMBER OF A REGIONAL BODY

I am interested in finding out about the relationships between Perth Region NRM and government in the administration of the Natural Heritage Trust and Caring for our Country. I would like to talk to you first about the Commonwealth government with the first set of questions and then about the state with the same set of questions.

QUESTIONS ABOUT THE COMMONWEALTH

1. Do you have direct dealings with the Commonwealth government? If so, is this with ministerial staff or public servants? If not describe your general impressions.
2. How do you see the relationship with the Commonwealth government from your position?
3. Has this changed over time? Why do you say that?
4. If things go well, how do you think that this will evolve in the future with 'Caring for our Country'?
5. What are the key issues in your view that influence the relationships between you and the Commonwealth government? Are they different for the state and regional bodies?
6. Thinking back what were the significant events in the relationship?
7. How did these influence your work? How did you respond?
8. If you could have done something differently, what would it have been and why? Was there anything which would have prevented this?

QUESTIONS ABOUT THE STATE GOVERNMENT

I will now ask you the same questions about the relationship with the state government.

1. How do you see the relationship with the State government from your position with Perth Region NRM?

2. Has this changed over time? Why do you say that?
3. If things go well, how do you think that this will evolve in the future with 'Caring for our Country'?
4. What are the key issues in your view that influence the relationships between you and government? Are they different for the state and Commonwealth?
5. Thinking back what were the significant events in the relationship?
6. How did these influence your work? How did you respond?
7. If you could have done something differently, what would it have been and why? Was there anything which would have prevented this?
8. Once you have left this position, what would you like to be remembered for?

Adaptive Management

9. Using your own understanding of adaptive management, how do you think it is occurring?

Thank you for your interest and participation.

INTERVIEW SCHEDULE (2)

DISCUSSION WITH A COMMONWEALTH PUBLIC SERVANT

I am interested in finding out about the relationships between the Commonwealth government, and state government in the administration of the Natural Heritage Trust and the Caring for Our Country. I am also interested in the relationships between the Commonwealth government and regional bodies, particularly the Swan Catchment Council, now Perth Region NRM. I would like to talk to you first about the state government with the first set of questions and then about the Catchment Council (s) with the same set of questions.

QUESTIONS ABOUT THE STATE GOVERNMENT

1. Which agency (s) do you deal directly with in Western Australia?
2. (If none, ask; Could you please describe to me 'the chain of command' with respect to dealings with the States? Who do you deal with primarily? (May need to draw an organisational chart)
3. How do you see the relationship(s) between the Commonwealth and state from your position?
4. How have these changed over time? Why do you say that?
5. If things go well, how do you think that these will evolve in the future with Caring for our Country?
6. What are the key issues in your view that influence the relationships between you and the state government?
7. Thinking back what were the significant events in the relationship?
8. How did these influence your work? How did you respond?
9. If you could have done something differently, what would it have been and why? Was there anything which would have prevented this?

QUESTIONS ABOUT THE REGIONAL BODIES

1. Do you deal directly with the Perth Region NRM, and/ or the regional bodies as a group?
2. Could you please describe to me ‘the chain of command’ with respect to dealings with the regional bodies, (and Perth Region NRM).
3. How do you see the relationship(s) from your position?
4. How have these changed over time? Why do you say that?
5. If things go well, how do you think that this will evolve in the future with ‘Caring for our Country’?
6. What are the key issues in your view that influence the relationships between you and the Perth Region NRM (or regional bodies in general)? Are these any different to those for the state?
7. Thinking back what were the significant events in the relationship?
8. How did these influence your work? How did you respond?
9. If you could have done something differently, what would it have been and why? Was there anything which would have prevented this?
10. Once you have left this position what would you like to be remembered for?
Adaptive Management.
11. Using your own understanding of adaptive management, how do you think relations have furthered its adoption?

Thank you for your interest and participation.

INTERVIEW SCHEDULE (3)

DISCUSSION WITH A STATE PUBLIC SERVANT

I am interested in finding out about the relationships between the state government with first the Commonwealth government and then with Catchment Councils (Swan Catchment Council particularly) in the administration of the Natural Heritage Trust and Caring for our Country.

I would like you to talk first about the Commonwealth with the first set of questions and then about the Catchment Council with the same questions.

QUESTIONS ABOUT THE COMMONWEALTH

Do you have direct dealings with the Commonwealth Government? If so, is this with Ministerial staff or public servants? (May have to ask for a schematic).

1. How do you see the relationship with the Commonwealth government from your position with government.
2. How has this changed over time? Why do you say that?
3. If things go well, how do you think that this will evolve in the future with 'Caring for Our Country'?
4. What are the key issues in your view that influence the relationships between you and the Commonwealth government?
5. Thinking back what were the significant events in the relationship?
6. How did these influence your work? How did you respond?
7. If you could have done something differently, what would it have been and why? Was there anything which would have prevented this?

QUESTIONS ABOUT THE REGIONAL BODIES

I will now ask you the same questions about the relationship with the regional bodies, the Swan Catchment Council in particular.

1. Do you have direct dealings with the Swan Catchment Council? Which catchment bodies do you deal directly with?
2. How do you see the relationship with the SCC/regional bodies from your position with government.
3. How has this changed over time? Why do you say that?
4. If things go well, how do you think that this will evolve in the future with 'Caring for Our Country'?
5. What are the key issues in your view that influence the relationships between you and the SCC/regional bodies?
6. Thinking back what were the significant events in the relationship?
7. How did these influence your work? How did you respond?
8. If you could have done something differently, what would it have been and why? Was there anything which would have prevented this?
9. Once you have left this position, what would you like to be remembered for?

Adaptive Management

Using your own understanding of adaptive management, how do you think it is occurring?

Thank you for your interest and participation.

Appendix III

EXTENDED EXPLANATIONS OF ESSENTIAL TERMS USED

Brief descriptions of what Latour means by ‘metaphysics’ and ‘ontology’ are given below. A more complete understanding and critique including his use of Whitehead is given in Harman (2010) and a more rounded understanding of this venerable topic would be a separate thesis.

Metaphysics

Latour (2005) proposes the following, which are not so much definitions as statements of intent.

If we call *metaphysics* the discipline inspired by the philosophical tradition that purports to define the basic structure of the world, then *empirical metaphysics* is what the controversies over agencies lead to since they ceaselessly populate the world with new drives and, as ceaselessly, contest the existence of others. The question then becomes how to explore the actors’ own metaphysics. Sociologists of the social have answered by abstaining from metaphysics altogether and by cutting all relations with philosophy, that fanciful and non empirical discipline which represents the lowly infancy of the now mature social sciences. They have also strictly limited the set of agencies ‘really acting’ in the world so as to free actors from their delusion, prepare the ground for social engineering on a grand scale, and smooth the path toward modernization.

It is no wonder that this program ended up going nowhere. As anthropologists have tirelessly shown, actors incessantly engage in the most abstruse metaphysical constructions by redefining all the elements of the world. (2005, p. 50).

And elsewhere:

EXPERIMENTAL METAPHYSICS: Metaphysics is traditionally defined as what comes after or above physics, thus presupposing an a priori distribution of primary and secondary qualities that settles the problem of the common world [...] too quickly. To avoid this premature solution, I call experimental metaphysics the search for what makes up the common world, and I reserve the deliberately paradoxical expression “metaphysics of nature” for the traditional solution that gave nature a political role. (2004, p. 242)

That is, the metaphysics of nature refers to the Cartesian division and ‘experimental metaphysics’ refers to what follows from naïve realism. For Latour these terms are not out there in the mental aether, with the metaphysics of nature casting a customary shadow on for example, qualitative research, but as empirical metaphysics in the here and now, the fresh varieties offered by ordinary actors, human and non-human. Empirical metaphysics arises from his metaphysics of relationism that ‘a thing is defined solely by its effects and alliances’ (Harman, 2009, p. 75) which are continuously occurring through concrescence.

Ontology

Latour states of ontology: '[...] "ontology" is the same thing as metaphysics, to which the questions of truth and unification have been added' (2005, p. 117, n. 166). In the 'what follows' he says that ontology refers to 'what the *real* world is *really* like' (p. 117, emphasis in text). The multiplicity of actor metaphysics *may* be understood as so many perspectives of what the one world is like but this does not hold.

Controversies over ontologies turn out to be just as interesting and controversial as metaphysics except that the *question of truth* (of what the world is really like) cannot be ignored with a blasé pose or simplified a priori by thumping on desks and kicking at stones. Even once reality has fully set in, the question of its unity is still pending. The common world still has to be collected and composed. (p.118, emphasis in text).

'The world in the singular is, precisely, not what is given, but what has to be obtained through due process (Latour, 2004, p. 239). Due process offers 'the production of the common world as the equivalent of a state of law' (2004, p. 240) as an alternative to distinctions between nature and society and facts and values. It combines de jure (institutions) and de facto (individuals, parties), in a single formula.

The 'common world' refers to the 'provisional result of the progressive unification of external realities (for which we reserve the term "pluriverse") (p 239). The pluriverse, by contrast with the old uni-verse, 'designates propositions that are candidates for common existence before the process of unification in the common world' (p. 246). In other words the first is metaphysics and the second ontology concerned with unification into 'matters of fact', the truth.

Articulation of propositions

Articulation connects propositions to one another and overcomes the distinction between world and word. Propositions are first of all actants so in the Boa Vista forest both the Topofil Chaix, measuring out the forest floor, and the scientists using it are actants coming together as a proposition. Propositions 'are not positions, things, substances, or essences pertaining to a nature made up of mute objects facing a talkative mind but *occasions* given to different entities to come into contact' (1999a, p. 141, emphasis in text) or 'actual occasions' in Whitehead's terms. Propositions 'allow the entities to modify their relations over the course of an event' (p. 141).

'The relation established between propositions is not that of a correspondence across a yawning gap, but what I will call *articulation*' (p. 142, italics in text): 'concrecence' in Whitehead's terms. Articulation is another form of forms or process of processes.

Articulation is 'an ontological property of the universe' (Latour, 1999, p. 303). The question then is whether propositions are well articulated and so become unified—or not—depending on 'the assembly work we will be able to achieve' (p. 118). Harmony, unity and truth are an achievement, a result of negotiation and strife, to produce this stable 'matter of fact'.

An example he uses is the explosion of the 'Columbia' space shuttle (2011): before, a composed and unified object in the sky in touch with space control, and after, a 'matter of concern' (2008), that is, a mass of actants and an inquiry into the composition of the network of which it was comprised from frozen Thiokol rings to decision-making and rocket scientists. Matters of concern are not necessarily negative but their 'working parts' that is the actor-network that produces these 'gatherings' (2005, p. 114) need to be explored.

Appendix IV
ABSTRACTION AND MEANING CONDENSATION

Table A-IV reproduces the first two examples from Table 12.1 (Kvale & Brinkman, 2009, p. 206) which refers to the meaning units as ‘themes’, a term used widely⁷⁶. This is subtly different to a concise statement of what was said as it implies selection and restatement of an obvious major element as a section from a text. The title of Table A-IV is the same as their Table 12.1.

Table A-IV
‘Meaning Condensation’

Natural Unit	Central Theme
The first thing that comes to mind is what I learned about interior decorating from Myrtis. She was telling me about the way you see things. Her view of looking at different rooms has been altered. She told me that when you come into a room you don’t usually notice how many vertical and horizontal lines there are, at least consciously, you don’t notice. And yet, if you were to take someone who knows what is going on in the field of interior decoration, they would intuitively feel there was the right number of vertical and horizontal lines.	Role of vertical and horizontal lines in interior decorating
So, I went home, and I started looking at the lines in our living room, and I counted the number of horizontal and vertical lines, many of which I had never realized were lines before. A beam...I had never really thought of that as vertical before, just as a protrusion from the wall. (Laughs)	S looks for vertical and horizontal lines in her home.

Source: ‘An application of Phenomenological Method in Psychology’, A Giorgi, C. Fischer, & E Murray (Eds.) (1975) *Duquesne Studies in Phenomenological Psychology* (Vol. 2, pp. 82-103), Pittsburgh, PA: Duquesne University Press, cited in Kvale & Brinkman, 2009, p. 206.

The first ‘central theme’ is literal and is not for example, ‘interior decorators are attuned to visual qualities which others aren’t’. The second is still literal but it could equally be: ‘S learns to see like a designer’ which is consistent with Giorgi’s research aim to ‘investigate what constitutes ordinary learning for people in their everyday activities’ (Kvale & Brinkman, p. 205).

⁷⁶ Kvale & Brinkman refer to ‘natural “meaning” units’ (p. 205) and then ‘natural meaning units’ (p. 207) and it is unclear why the parentheses were omitted although it may refer to naturalisation of ‘meaning’. ‘Meaning condensation’ should not be confused with extraction of segments defined as ‘meaningful units of texts’ (Hrushka, Schwartz, St. John, Picone-Decaro, Jenkins, & Carey, 2004, p. 310) which may be any length of text from a word to an interview.

Appendix V

ABSTRACT OF QUESTION 10:

‘WHAT IS ADAPTIVE MANAGEMENT IN YOUR VIEW?’

Response	Abstract
<p>A very clear evaluation of what you are doing. Constant evaluation. And it’s not only of the outcomes of your projects, it is of your relationships, it’s of how people are feeling about what you do, whether they are happy with what you do... It is a whole level of evaluation constantly across a whole organisation. So we run those 12 reference groups with about 180 people engaged in those. We are constantly sitting down and going: ‘Is that reference group still working? Are you guys happy with what you are doing? Do you feel you are getting somewhere?’ If not, we have sat down and totally changed three reference groups already.</p> <p>If you don’t do that, if you persist when people have lost interest and are feeling that it is not working, then somewhere down the track you are going to realise that you have wasted a year. So constantly evaluating your relationships how people see you are doing. Are people still motivated? Are they still enthusiastic? And are you actually getting your outcomes towards the targets. And then being really ready to say: ‘I was wrong, this isn’t working and I have got to change it’.</p> <p>And that isn’t a sign of failure, it is a sign of success that you can recognise it early enough to not have wasted more time and money and that does take time and effort but you have to be able to put aside that time and effort.</p>	<p>Constant evaluation to determine if organisational actions are achieving project outcomes. Constantly asking people involved if they feel happy with what they and you are doing. Changes are made taking this feedback into account in achieving outcomes. Otherwise if people have lost interest and are telling you that it is not working you realise later that you have wasted a year.</p>
<p>Responding to stimuli whether good bad or indifferent. It’s responding to them. How you respond to them. So for example with the regional model. We got the stimulus, people saying: ‘It’s not working, it’s too expensive, it’s whatever’. So trying to say, ‘OK, what do we put in its place?’ That is the frustration you get from working in government. You can’t just go ‘bang, this is it and go and do it’. We</p>	<p>Response to stimuli such as complaints about the regional model; looking at what to put in its place. The government requires consultation and openness but then adaptation may be too slow to be seen as adaptive. When inquiries are made about complaints, there is no response. Adaptive management is difficult.</p>

have to be open and consultative and all those sorts of things. I would like to think that we do adaptive management but I am frustrated by the pace.

And even things like complaints about reporting. We've had the comment: 'It's too onerous'. But when we try to respond to it by saying: 'What do you mean by onerous? Is it a quantity issue? Is it a quality issue in the sense that the questions we were asking are irrelevant or rubbish?' But we just don't get a response. So I would like to think we are adaptive managers, but it's just difficult.

Appendix VI
PERMISSIONS

Doctoral dissertation

Inbox; Tuesday, 12 March 2013 10:58 PM AssisBL [assistante.latour@gmail.com]

Actions

To:

M

Mescal Stephens

Le 05/03/13 08:09, Mescal.Stephens@postgrad.curtin.edu.au a écrit :

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Of course, you can reproduce the figure! Can you quote it as: Weik, E. (2006): **Working Relationships. A Meta-View on Structure and Agency. Theory & Science** 7(1).

Best wishes

Elke

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11 April 2013

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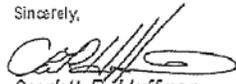
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