Curtin University Sustainability Policy (CUSP) Institute

What It's Like to Ride a Bike:
Understanding Cyclist Experiences

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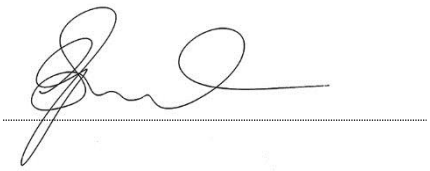
Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

Human Ethics The research presented and reported in this thesis was conducted in accordance with the National Health and Medical Research Council National Statement on Ethical Conduct in Human Research (2007) – updated March 2014. The proposed research study received human research ethics approval from the Curtin University Human Research Ethics Committee (EC00262), Approval Number # HURGS-14-14.



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Abstract

Sustainability research recognises the role transport plays in shaping cities, and the destructive consequences of automobile dependency. As a low carbon, affordable, healthy and efficient transport mode, cycling necessarily contributes towards making cities more liveable and sustainable. Research thus far, however, has failed to fully engage with the experiential aspect of mobility, missing a window into both the liveability of cities and the success or failure of the transport systems within them. In response, this thesis explores how people's experiences cycling in urban environments can be understood and used to inform transport policy. Its objectives are to contribute better understandings of urban cycling mobilities, and how such understandings can inform Australian sustainable transport policy, by comparing Western cities of high and low cycling amenity through using a combination of semi-structured and go-along interviews.

A phenomenological, multi-case study framework is developed, using tools from mobilities studies to explore how people experience cycling in three case study cities, namely Perth and Melbourne in Australia which have low cycling amenity compared with that provided for the private car, and Utrecht in the Netherlands which is traversed by many established cycling routes and well serviced by public transport options. Volunteers were recruited in each city to participate in a novel combination of both semi-structured and go-along interviews. For the go-along interviews the participants simultaneously recorded a narration of their experience and GPS track of a cycling journey. The data from the go-along interviews are visualised as spatial transcripts, including snapshots of maps plotting participants' comments on their ride. Interpretative Phenomenological Analysis is applied to identify key themes in the interview data, providing an insightful comparison of cycling experiences between the three case study cities.

The findings demonstrate that the experiences of cyclists in highly automobile dependent contexts are heavily influenced by preoccupation with cycling identities, which in turn compounds the stresses associated with negotiating urban environments and cultures that are unsupportive of cycling. How these stresses are ultimately perceived by cyclists depends on their personal capacity to overcome environmental and social barriers to cycling. In order to achieve a substantial shift in transport mode share away from car driving, and fully integrate cycling into a network of sustainable transport modes, policy in automobile

dominant contexts such as in Australia must incorporate cyclists' views and experiences into the policymaking process. Deliberative democracy techniques combined with spatial transcripts can be used to negotiate urban space and transport planning. Understandings of cyclist experiences can illuminate the performance of transport policies, and offer the possibility of countering negative cultural attitudes toward cycling present in highly automobile dominated contexts.

This thesis contributes to mobilities studies by demonstrating the efficacy of combining traditional and go-along interview methods for developing understandings of the embodied experience of cycling, particularly within the situational frame provided by the multi-case study. The production of the spatial transcripts through using open source tools to create a web application further extends previous qualitative research in cycling. The methodology used in this thesis has applications beyond cycling research to a variety of mobilities studies. In addition, the methods used are adaptable to a policy environment, particularly when combined with other innovative methods, such as deliberative techniques, as an aid for engaging with the community about cycling policy and infrastructure. This thesis concludes that developing understandings of how people experience riding bikes in cities is valuable for informing sustainable transport policy in Australia.

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List of Abbreviations and Acronyms

CBD	Central Business District
DKK	Danish Krone
Freo	Fremantle
GDP	Gross Domestic Product
GPS	Global Positioning System
MAMIL	Middle Aged Man in Lycra
MHL	Mandatory Helmet Legislation
PR	Public Relations
PSP	Principal Shared Path
PTA	Public Transport Authority
RACV	Royal Automobile Club of Victoria
RSC	Road Safety Commission
Uni	University
UV	Ultra Violet

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Preface

I don't know exactly what a prayer is.
I do know how to pay attention, how to fall down
into the grass, how to kneel down in the grass,
how to be idle and blessed, how to stroll through the fields,
which is what I have been doing all day.
Tell me, what else should I have done?

- Mary Oliver, *The Summer Day*

This thesis had its inception several years ago when I was an undergraduate student immersed in the world of ecophilosophy, and discovering ideas about journeys and perception. In particular, I became fascinated with how we perceive and connect with the world and the layers of meaning we ascribe to the inputs received from our senses. We experience the world as it is revealed to us moment by moment as we move through it.

Though I love being in nature, most of my time is spent in the city. I long for opportunities for myself and for my community to connect with the world beyond screens, and to have opportunities for play and daydreaming. I want to live in a city where it is easy for everyone, whatever age, ability or disposition, to connect with the world around them as they go about their daily lives. I believe planning cities for people to cycle can move us toward lives of greater connection with the world and each other.

In the urgency to create sustainable cities, too often musings on the nature of reality and how we connect with the world – the human-centred as well as the more-than-human – are pushed aside and dismissed as being frivolous and indulgent or perhaps more generously, irrelevant. However, for sustainability to be more than a vague unreachable ideal, it must facilitate the realisation of our full humanity by acknowledging and supporting the needs of our sensing selves. We can do this by building visions of sustainability that incorporate our embodied experiences of cities.

Crucially, it is people who must be involved in the process. Who else after all are we planning cities for?

Chapter 1 Background

1.1 Introduction

We live mobile lives. Movement is a fundamental characteristic of existence, and something to consider seriously when planning to shape the world in which we live. Thirty years ago, *Our Common Future* (World Commission on Environment and Development, 1987) defined sustainability and gave the world a blueprint for sustainable development. The message from *Our Common Future* was that human flourishing is intimately entwined with and irrevocably dependent upon the Earth. It was met with a dawning global comprehension that our actions impact on the Earth's capacity to sustain us. The statement brought to the forefront the idea that cities are important sites for action when dealing with complex global problems such as extreme poverty and climate change. Cities after all consume 75% of the world's energy and produce 85% of greenhouse gas emissions (Newman, Beatley, & Boyer, 2009). They are home to more than half the world's population, and are growing rapidly (United Nations, 2016).

For several decades now, as a response to growing ecological footprints and inequalities, sustainability scholars have worked to create realizable visions for living better in cities. These visions generally include integrating mixed-used urban density and increased quality of the public realm. A key element of sustainable cities is efficient, low carbon, accessible transport networks (Kenworthy, 2006).

1.2 Transport and cities

Sustainability scholarship has targeted transport due to the creative role it has played in shaping the urban form of cities as well as the philosophies of the people that live and use them (Newman & Kenworthy, 1999). The winding narrow streets of the earliest cities were shaped by pedestrians. These remain as the urban core of many older European and Asian cities. With the advent of the railway and mass transit, cities began to be configured around transport lines with nodal concentrations of development at stations. Today, many cities are shaped and dominated by the private automobile, typified by the low density urban sprawl and limited provision for non-car transport modes (Matan, 2011; Newman et al., 2009; Newman & Kenworthy, 1999, 2015).

Each of these progressive stages reached a temporospatial limit known as the Marchetti Principle. This describes that the maximum comfortable radius of a city is however far one can travel using the dominant transport mode in thirty minutes. People cannot reasonably sustain travelling for more than an hour each day for work while also engaging in caring responsibilities, recreation and rest. Beyond the thirty minute radius, the city becomes dysfunctional (Marchetti, 1994; Newman & Jennings, 2008).

The expansion of the automobile city intensified after the Second World War, as policy makers and planners designed cities to accommodate individual car ownership and travel while deprioritising public transport, walking and cycling (Newman & Kenworthy, 2015). The acceptance by both planners and the public of designing cities around the car came as the result of decades long campaigning by vested interests in the automobile industry to shape public perceptions of how streets should be used and who had most right to use them (Norton, 2007). Once the domain of people, streets became spaces in which fast, motorised transport took priority.

A vicious cycle of public transport closures began as policies encouraged the construction of suburbs. As urban density decreased, the lower population in suburbia confirmed the financial unsustainability of public transit, further decreasing its availability while increasing the favourability of the car as the dominant transport mode. Cities that once boasted extensive transit networks of trams, trolley buses and trains were given over to cars as public services were steadily removed to favour private transport modes (Newman & Kenworthy, 2015). Over half of Australian adults, for example, now cite lack of access to reliable public transport as a reason for commuting to work by car (Australian Bureau of Statistics, 2014).

The dominance of the private car for transport has led to a profusion of negative repercussions. The design of automobile dependent cities both promotes car use and inhibits the use of other modes of transport, increasing the likelihood of inhabitants leading sedentary lifestyles and developing related health problems such as obesity (Matan, Trubka, Newman, & Vardoulakis, 2012). The pollution and noise from traffic is associated with increased incidents of hypertension, stress and lack of sleep (as summarised by Newman & Matan, 2012). Countries with high levels of automobile dependence such as Australia, Canada, and the United States, have higher rates of obesity than those less car dependent (Bassett, Pucher, Buehler, Thompson, & Crouter, 2008; Frank, Andresen, & Schmid, 2004). The economic costs of car dependence are also well established. Road trauma in Australia alone costs around $30 billion per year (Australian Automobile Association, 2017) and

reliance of fossil fuels coupled with suburban sprawl has been identified as a key factor in the Global Financial Crisis (Newman & Kenworthy, 2015). Car use contributes significantly to the production of greenhouse gases, with domestic transport responsible for 18% of Australia's total greenhouse gas emissions in 2016-17 (Australian Government, 2017b, p. 14).

The success of the automobile lobby in making physical and conceptual space for cars in cities is now manifesting as a lack of mobility as car drivers struggle to experience freedom while trapped in a traffic jam (Fincham, 2006; Paterson, 2007). The Marchetti Principle is in full effect and automobile dependent cities are reaching the limits of how much time people are willing to spend battling traffic on their commute, with clogged roads and further distances to travel through the urban sprawl. In Australia, all capital cities now have an average commute time approaching or surpassing 30 minutes (Australian Government, 2017a).

Though car use had been consistently rising since the mid 20th Century, transport scholars have noted a plateau and even decline in car use in many cities in developed economies in the past two decades (Goodwin, 2012; Goodwin & van Dender, 2013; Metz, 2013; Newman & Kenworthy, 2011). The reasons given for this change in car use include rising fuel costs and changes in urban form such as increased rail supply and densities that combined to reduce the necessity of, and provide alternatives to, the car. The changes in car use may also reflect a reverse in the suburban migration of previous decades as more young people as well as those from senior generations move to the inner city to be closer to jobs, services and recreational opportunities (Headicar, 2013; Newman & Kenworthy, 2011, 2015; Newman, Matan, & McIntosh, 2015). Additionally, since the early 2000s there has also been a sustained dissatisfaction with traffic congestion and the subsequent increase in travel time, which has in turn led to increased demand for alternative transport such as train, light rail and cycling (Newman & Kenworthy, 2011).

Despite the above evidence, it remains difficult to predict future rates of car use with any certainty, with many scenarios possible including that car use may again rise (Stokes, 2013). With no guarantee that the future will be car-free, given the present negative effects of automobile dependence it remains essential that transport planners strive to create cities that support sustainable transport modes. Now is the time to capitalise on the discontents of the automobile city, and use Peak Car as an opportunity to build momentum for supporting the use of low carbon, inclusive and healthy travel options such as the bicycle. After all, when people have alternatives to driving, they drive less (Newman et al., 2009).

1.3 Cycling for sustainability

As climate change has become overtly observable and urgent, the focus of sustainability scholarship has shifted toward mitigation and building the resilience of cities (Newman et al., 2009). In response, the vision for sustainable cities increasingly focuses on low carbon modes of transport. Cycling is frequently represented as part of the suite of measures employed in planning a sustainable city that includes shifting transport toward low-carbon modes and away from car use (Koglin & Rye, 2014; Nielsen, Skov-Petersen, & Agervig Carstensen, 2013; Spinney, 2009). Increasingly, the bicycle is seen as a substitute for the car, with governments globally in car-dependent contexts keen to see increasing cycling rates solve the problems caused by decades of prioritising automobiles (Fincham, 2006; Pucher & Buehler, 2012b).

Designing cities to support cycling in combination with other active transport modes is vital for improving population health outcomes across a broad demographic (Buehler, Pucher, Merom, & Bauman, 2011; Garrard, Rissel, & Bauman, 2012; Götschi, Garrard, & Giles-Corti, 2016; Matan, Newman, Trubka, Beattie, & Selvey, 2015; Matan et al., 2012; Newman & Matan, 2012; Pucher & Buehler, 2010). Increased cycling rates are positively correlated with improvements in mental health, cognitive functioning and emotional well-being in addition to addressing chronic lifestyle diseases such as diabetes and obesity (Bassett et al., 2008; C. Rissel & Watkins, 2014). There is also a clear association between high levels of active transport and a reduction in all-cause mortality as well as increased life expectancy, increased aerobic fitness and a decline in a range of negative health markers (Pucher & Buehler, 2010). Commuter cycling is specifically associated with a reduction in all-cause mortality, cardiovascular disease and cancer (Celis-Morales et al., 2017). In the Netherlands close to 50% of all journeys are made by active transport, including walking and cycling. This figure is held responsible for the prevention of an estimated 6500 deaths annually (Fishman, Schepers, & Kamphuis, 2015). While there are benefits of increased active transport to the population as a whole, the implications for certain groups are even greater, such as for senior citizens and people with disabilities. This is particularly the case due to other transport modes being of limited accessibility to these groups (Aldred & Woodcock, 2008; Black & Street, 2014; Fishman et al., 2015; Ryan, Svensson, Rosenkvist, Schmidt, & Wretstrand, 2016).

Cycling generates substantial positive economic outcomes. It is estimated cyclists benefit the Australian economy in the order of $144.3 million a year through savings related to reduced traffic congestion, air pollution and health costs (Bauman et al., 2008). The health benefits of cycling alone in the Netherlands are worth €19 billion per year, equivalent to 3% of the

nation's Gross Domestic Product (GDP) for 2010-13 (Fishman et al., 2015). Cyclists in Copenhagen are found to contribute DKK 1.54 to the Danish economy with every kilometre cycled, compared with a cost of DKK 5.64 for every kilometre travelled in a car (Cycling Embassy of Denmark, 2017).

The justification for including cycling in visions of sustainable cities as an effectively zero-carbon transport mode is so self-evident as to be almost unquestionable. So linked has the bicycle become with sustainability that, without cycling, "it becomes almost impossible to imagine a truly sustainable city" (Fremantle Mayor Brad Pettitt in Marshall, Heal, & Kostusik, 2014, p. 5). Because cycling meets so many of the criteria for a sustainable transport mode by being beneficial for health, the environment, society and the economy, an assumption may be made that anything that might lead to an increase in cycling rates is necessarily positive and will result in a sustainable city. However, if cycling is "increasingly constructed as a practice enabling 'sustainable development'" (Horton, Rosen, & Cox, 2007b, p. 8), then the attention of policy-makers is shifted to the technical and functional aspects of cycling as a component of the transport system, rather than on how cycling is experienced by practitioners.

1.4 Understanding cyclist experiences

A "catalyst for reawakening dormant senses" (Jungnickel & Aldred, 2013, p. 9), cycling is an inherently physical, unavoidably embodied practice. It requires not only that the practitioner use their own body as the means of propulsion, but to engage in a sensual exchange with their surrounding environment, open to connection and interaction with urban life (te Brömmelstroet, Nikolaeva, Glaser, Nicolaisen, & Chan, 2017). Transport cycling holds more physicality and corporeal vulnerability than motorised modes such as private car or public transport, and the possible speeds and hazards associated with riding a bicycle mean cyclists have different needs again when compared with pedestrians. As such, it is incumbent on policymakers to engender empathetic understandings of how the cycling practice is embodied and experienced in order to make good transport planning decisions for cyclists. Investigations relating to cycling should at the least acknowledge the physicality of this mode of transport, but ideally, should make attempts to grapple with how the embodied experience of cycling manifests in people's lives, and what this might mean for how we develop sustainable transport policy (Jones, 2005).

1.5 Need for this research

Looking to the work of two of the most influential writers on cities, Jan Gehl (1987, 2010) and Jane Jacobs (1992), the importance of planning and building cities that work effectively for the people who live in them seems obvious. However, as mobilities scholar Tim Cresswell argues, transport researchers "have not been so good at telling us about the representations and meanings of mobility either at the individual level or at a societal level. Neither have they told us how mobility is actually embodied and practised" (Cresswell, 2010b, p. 19). Unfortunately, much of the research conducted on sustainable transport does not engage with how people experience transport, only the functional aspects of time, speed and efficiency (Spinney, 2009).

This thesis suggests that in both scholarly and policy contexts, the sustainable transport and cycling literature do not adequately engage in how people experience mobility in cities, nor the influences of mobile experiences. By maintaining a focus on the mechanical and technical aspects of transport that prioritise frequency, efficiency and speed of transport networks, sustainability scholars miss the opportunity to engage with a fundamental aspect of our lived experience of cities: how we move through them. By developing ways of understanding the embodied mobile experience, those engaged in the work of planning cities can make knowledgeable decisions that reflect the needs and desires of the people they serve. The creation of positive mobile experiences has the potential to enable a shift toward sustainable transport systems in cities. This thesis argues that by developing innovative approaches to understanding the needs of cyclists we can design cities where people are empowered to ride a bike for their everyday transport.

1.5.1 Research question and objectives

This thesis serves to contribute to the sustainable cities agenda by offering a methodological exploration of the embodied experience of cycling and how understandings of cyclists' experiences can be used in transport planning. This is achieved through investigating the effectiveness of combining two methods of qualitative data collection within a multi-case study framework.

The research question this thesis seeks to answer is:

How can people's experiences of cycling in urban environments be understood and used to inform transport policy?

In answering this question, the thesis aims to meet the following four research objectives:

1. To contribute to understandings of urban cycling mobilities;
2. To compare experiences of cycling in Western cities of high and low cycling amenity;
3. To understand how the combination of semi-structured interviews and go-along interviews can be used to capture the experiences of cyclists; and
4. To analyse how cyclists' experiences can inform sustainable transport policy in Australia.

1.5.2 Scope of the study

This study explores the experiences of adults riding bikes for transport in the inner areas of three cities in developed, culturally Western countries: Perth and Melbourne in Australia and Utrecht in the Netherlands. The participants involved in the study were experienced at cycling and capable of riding safely both with other traffic, on separated cycling infrastructure and sharing space with pedestrians. To participate in the research, they each rode a bicycle, provided by them, without powered assistance.

1.6 Thesis structure

The remainder of this thesis is structured as follows:

Chapter 2: Literature Review reports the present state of the English-language cycling literature, identifies limitations and areas for further investigation, and locates where this thesis makes a contribution.

Chapter 3: Research Design describes the methodological framework and the methods of data collection and analysis used to answer the research objectives.

Chapter 4: Cities and Participants provides an overview of the case study locations and a description of each participant group.

Chapter 5: Semi-Structured Interview Results presents the results of thematic analysis of the semi-structured interview transcripts. Key themes are identified and explored with quotes from the research participants.

Chapter 6: Go-Along Interview Results presents the results of thematic analysis of the go-along interview transcripts. The themes are identified and illustrated with both representative quotes from the participants and maps of the location of the quote from their go-along bike ride.

Chapter 7: Discussion provides an assessment of the results from the interview analyses against the reviewed cycling literature. The suitability of the methodology for meeting the research question and objectives is critiqued.

Chapter 8: Conclusions and Future Research defines the contribution of this thesis, including identification of policy implications for sustainable transport in Australia, and suggestions for the direction of future research on cycling and sustainability.

Chapter 2 Literature Review

2.1 Introduction

The past decade has seen an increased interest in cycling for transport by governments and policy makers as a means for addressing multiple challenges for creating sustainable cities. Subsequently, cycling has also risen as a topic of interest for researchers in fields including transport planning, geography and sociology, noted by the publication of several key works including compilations (Horton, Rosen, & Cox, 2007a; Pucher & Buehler, 2012a) and a special section of the *Journal of Transport Geography* ("Cycling and Society," 2013) and *Transport Reviews* ("Cycling As Transport," 2016).

In this chapter, English-language literature relevant to developing understandings of how cyclists experience cities is reviewed. The chapter begins with an overview of the work on cycling infrastructure and policy reviews. The contributions of this broad body of research are significant for understanding the movements of cyclists around cities, however the focus is largely on technocratic strategies for increasing cycling mode share, rather than on developing insights on how people experience cycling. The nature of much cycling research precludes investigation of the role political, social and environmental contexts, culture and identity play in how cycling is perceived and experienced. Furthermore, very few studies of transport cycling prioritise the perspective of the cyclist. As a counter to the above limitations, sociological and ethnographic approaches and methods for understanding cycling are being explored by mobilities scholars. The remainder of the chapter serves to review literature within the mobilities paradigm that aspires to capture different aspects of how people experience cycling including the interplay of identity, culture, society and politics. Finally, within the mobilities literature on cycling, the work on mobile methods is reviewed. Of greatest relevance to the research presented in this thesis is what is absent from much of the literature, namely that it does not strongly feature the direct experiences of cyclists in their own words. It is this gap that this thesis hopes to fill.

2.2 Cycling and the city

The cycling literature is predominantly concerned with assessing the impact of infrastructure and policy on increasing cycling mode share. An acknowledged limitation of these texts and this thesis, is a focus on cycling in cities, as opposed to regional cities and

towns. In Australia this is a growing and important area for future research (see Brabazon et al., 2015; Cooper & Leahy, 2017).

Previous studies tend to have a geographic focus on Northern Europe, in particular the Netherlands, Germany and Denmark. Several cities within this region are described as setting the global standard for best practice cycling infrastructure, policy and culture (Lanzendorf & Busch-Geertsema, 2014; Nielsen et al., 2013; Pucher & Buehler, 2007, 2008; Pucher, Dill, & Handy, 2010). Research seeking to understand the reasons for and policy responses to typically low cycling rates in highly automobile dependent urban contexts tends to focus on parts of the UK, the USA, Canada, Australia and New Zealand (Bauman et al., 2008; Alexandra Macmillan et al., 2014; Moudon et al., 2005; Pucher & Buehler, 2006; Pucher, Buehler, & Seinen, 2011; Pucher, Garrard, & Greaves, 2011; M. Smith, 2016).

Cycling research has expanded globally, in line with the increased interest in and need for sustainable solutions for urban transport. Recent examples of cycling research from around the world include representations from Egypt (Abdelgawad & Kinawy, 2015), Ghana (Acheampong, 2016), India (Anantharaman, 2016; Verma, Rahul, Reddy, & Verma, 2016), Mexico (Meneses-Reyes, 2013), Greece (Milakis & Athanasopoulos, 2014) and Thailand (Sengers, 2016).

2.2.1 Infrastructure and policy

The most important and comprehensive policy reviews have been conducted by cycling scholars John Pucher and Ralph Buehler, with a focus on uncovering the most important aspects of policy and infrastructure that positively influence cycling rates (Buehler & Pucher, 2012; Pucher & Buehler, 2008, 2011, 2016). Several of these reviews, in addition to those conducted by others, have found that the main factors positively influencing cycling mode share are the provision of separated cycling infrastructure, lowered vehicle speed limits in multi-modal traffic zones, and street design that prioritises cyclists, combined with cycling-sensitive policy. Additionally, cities that incorporate cycling-friendly design element experience increased positive behaviour from other road users (Buehler & Dill, 2016; Buehler & Pucher, 2012; Furth, 2012; Pasha, Rifaat, Tay, & de Barros, 2016; Pucher et al., 2010).

Groups that are typically underrepresented as cyclists may be particularly responsive to the provision of separated cycling infrastructure (Aldred, Elliott, Woodcock, & Goodman, 2017). Strong preferences for separated cycle ways are shown by women (Garrard, 2003; Garrard, Rose, & Lo, 2008; Heesch, Sahlqvist, & Garrard, 2012), senior citizens (Black & Street, 2014;

Ryan et al., 2016) and children (Kaplan, Nielsen, & Prato, 2016) as well as significantly increasing the likelihood of adults cycling with children (Aldred, 2015).

The above findings conflict with advocates of vehicular cyclist theory, who promote mixed cycling and motorised transport, arguing that this approach results in safer outcomes for cyclists and that cyclists are individuals with as much right to road space as car drivers (Haake, 2009). This idea is philosophically compelling given the problematic manner in which cities have become dominated by cars. In reality, however, the claims rely on cyclists having the physical and emotional capacity to cope with the logistical challenges of cycling in heavy traffic as well as potential conflict with other road users (Furth, 2012). For a range of reasons, the underrepresented groups cited previously are less likely to fit the demographic of cyclists able to overcome the physical and mental stresses of cycling in and with motorised traffic (Pucher & Buehler, 2009). Nevertheless, despite widespread evidence for the effectiveness and desirability of separating bicycles from car traffic in locations with high cycling rates and diverse cycling demographics, the philosophy of vehicular cycling continues to influence transport policy in automobile dependent cities (Furth, 2012; Pucher & Buehler, 2008).

While certain groups do benefit from transport networks that prioritise cycling through the development of separated infrastructure, the implementation of such plans needs to be done sensitively and through a considered process of consultation. The absence of inclusive decision making processes for cycle network planning may not impact positively on all members of the community, frustrating efforts to create sustainable cities in a holistic sense. Hoffmann (2013) argues that the building of cycle paths through some cities in the US has served primarily to benefit upwardly mobile, middle-class white people as a tool of gentrification, to the detriment of black citizens and other minorities who feel they are being pushed out of their own neighbourhoods. The literature also suggests most cycling increases occur in areas already undergoing gentrification (Danyluk & Ley, 2007; Pucher, Garrard, et al., 2011; Spinney, 2016).

In Launceston, Tasmania, community tensions continue to simmer as “white line fever” infects a community in disagreement regarding the benefits of newly painted cycle lanes crisscrossing the city (Vreugdenhil & Williams, 2013). Finally, Bonham and Cox (2010) question the fundamental legitimacy of separated cycling infrastructure, arguing that rather than merely providing a space for cycling to occur, cycle paths are in fact assuring the primacy of motorised automobility. By creating extra space for cycling, instead of reducing or removing the space available for private motorised transport, the production of cycle paths

reinforces the current hierarchy of road users and does little to address the unsustainable political and social structures that guide automobile dominated transport systems.

2.3 Cycling mobilities

Much of the cyclist literature consists of macro-level studies aimed at uncovering the best infrastructure and policy solutions for low cycling rates. More nuanced explorations of the practice can, however, create understandings of equity and gender issues and relationships between the individual, society and environment, beyond its more obvious aspects such as transport and recreation (Horton et al., 2007b). As such, cycling offers a lens with which to view the broader issues relating to sustainability and cities, and requires a range of approaches for developing proper understandings (Fishman, 2016). Mobilities studies is one field that offers theoretical and methodological approaches for uncovering the complex social and political dynamics of cycling in cities (Koglin & Rye, 2014).

The mobilities paradigm in sociology highlights the importance of including movement in studies of society, and the relationships between human lives and the world(s) surrounding them (Sheller & Urry, 2006; Urry, 2007). It is concerned with investigating the meanings behind the movement of people, things and ideas, recognising that these meanings are often interconnected, political, and have a relationship to power. The interplay of these elements consequently has implications for how mobility is experienced (Cresswell, 2010b).

Eminent sociologist John Urry initially defined mobilities as a paradigm within the social sciences in his work *Sociology beyond Societies: Mobilities for the twenty-first century* (Urry, 2000) as "a manifesto for a sociology that examines the diverse mobilities of peoples, objects, images, information and wastes; and of the complex interdependencies between, and social consequences of, these diverse mobilities" (Urry, 2000, p. 1). The mobilities paradigm was further crystallised six years later with the creation of the journal *Mobilities.* The publication of a key paper on the "mobilities turn" of the social sciences (Sheller & Urry, 2006) served as an important statement regarding the consolidation of the mobilities paradigm, and one of several in-depth works in the coming years to continue to define and document this relatively new field (Adey, P., Bissell, D., Hannam, K., Merriman, P. and Sheller, 2014; Cresswell, 2006, 2010a, 2012, 2014; Faulconbridge & Hui, 2016; Merriman et al., 2013; Sheller & Urry, 2016).

The study of movement is not new, and Cresswell (2012) reminds us that scholars have been grappling with the concepts found within the mobilities paradigm for some time in historical

geographies of sport, vagrancy and the right to mobility, travel and exploration, and education. Nevertheless, mobilities scholars have criticised the traditional worldview of the social sciences for its preoccupation with the rooted and sedentary, lacking acknowledgement of the interconnectivity of people and things (Cresswell, 2012; Urry, 2007), and for "[failing] to examine how the spatialities of social life presuppose (and frequently have conflict over) both the actual and the imagined movement of people" (Sheller & Urry, 2006, p. 208). For mobilities scholars, "movement is a structuring principle of contemporary societies that can generate culturally rich experiences of place" (Aldred & Jungnickel, 2012, p. 524). Mobilities studies offer methodological and theoretical tools for recognising "that mobility and movement are entangled with relations of power, identity and embodiment" (Spinney, 2009, p. 823).

Cresswell articulates a politics of mobility as a means of identifying "the ways in which mobilities are both productive of … social relations and produced by them" (Cresswell, 2010b, p. 21). He embeds the practices of mobilities into their social and economic contexts, and provides a framework for understanding how peoples' mobilities behaviours are influenced by their social environment. Koglin and Rye (2014) critique and extend this framework to develop a politics of velomobility and create a theoretical approach for bicycle planning. Their framework includes the elements of physical movement, power relations, positive representation of cycling and the everyday practice and experience of cycling, and seeks to contextualise bicycle transport planning within the economic and social environment of modern cities.

Through critiquing the notion of transport being purely functional and utilitarian, and using mobilities as a framework for viewing cycling, mobilities scholars have questioned the need to prioritise developing the economics and speed of transport to more quickly and efficiently shuttle people from one place to another (Scott, 2016). In rejecting viewing the dynamics of transport merely in terms of its functionality, mobilities also rejects the notion of the individual being a solo actor, rather seeing individuals as intimately entwined and engaging with other individuals, entities, ideas and objects (Hanson, 2010).

2.4 Perceptions of cycling

Imbalances in the reporting of cyclist fatalities due to their sensational nature contribute to public perceptions that cycling is an inherently unsafe activity (Alex Macmillan, Roberts, Woodcock, Aldred, & Goodman, 2016; Sun, 2014). The perception that cycling is a dangerous practice is a major barrier to increased cycling participation in cities with low cycling mode share

(Bauman et al., 2008; Chataway, Kaplan, Nielsen, & Prato, 2014; Horton et al., 2007a; Manton, Rau, Fahy, Sheahan, & Clifford, 2016). The effect of the physical appearance of cyclists on public perceptions of cycling has been explored in the literature. While wearing cycling specific clothing may not influence driver behaviour toward cyclists (Walker, Garrard, & Jowitt, 2014) there are indications that helmets and high visibility clothing may influence people to think of cycling as more dangerous than it actually is and thus reduce cycling participation rates (Aldred & Woodcock, 2015; J. Larsen, 2016). Bike share schemes therefore may help to normalise the perception of cycling, as most users are dressed in everyday clothing and do not appear to require the use of special equipment or a change of clothes at their destination (Goodman, Green, & Woodcock, 2014). Anecdotal evidence also suggests that dock-less bike share schemes, such as in Washington DC and Chicago, may serve to increase the diversity of the cycling population due to the lower upfront costs and access beyond the typically affluent neighbourhoods associated with docked bike share programs (Greenfield, 2017; Sturdivant-Sani, 2018). Additionally, bike share programs may further contribute positive images of cycling as it becomes more widely appreciated that their presence in cities is associated with lower rates of cycling-related injury, though the reasons for this are yet to be fully identified (Fishman, 2015). The opportunities for cities offered by dockless bike share schemes are, however, significantly clouded at this point in time. Reports of “bike graveyards” in China, the result of an oversupply of bicycles by several dockless bike share companies and subsequent abandonment of thousands of bikes by users (Taylor, 2018) is one example. The failure of several companies to take off in Australia due largely to issues with bikes being dumped in inappropriate locations such as waterways and up trees (ABC News, 2018) is another negative example.

2.5 Cycling citizenship

Freedom of movement and access to a range of mobility options are intimately entwined with modern constructs of citizenship (Cresswell, 2013; Spinney, Aldred, & Brown, 2015). Aldred (2010) discusses the ways in which constructions of citizenship can be linked with transport cycling. Through conducting interviews with cyclists in Cambridge, UK, she develops a model of the cyclist citizen that is a composite of four types of citizen: the environmental; the self-caring; the locally rooted; and the cyclist in the community. Specifically, she argues that the cycling citizen is constructed in comparison to forms of citizenship enabled by the automobile. For the Cambridge cyclists in her study, cycling contributed to positive constructions of citizenship as a practice that connected them to their local environment and community.

Green, Steinbach and Datta (2012) further explore the relationship between citizenship and cycling. They define citizenship as a reflexive process, rather than a fixed state, and that as such, experiences of citizenship differ between groups. They argue that cycling has become constructed in government policy as the ultimate representation of the travelling citizen who is healthy, environmentally friendly and autonomous. This representation is problematic because it further marginalises the citizenship of those who are unable to partake in cycling due to limitations of ethnicity or class. It is also evident that these same groups are often already excluded from other transport modes.

Osborne and Grant-Smith (2017) continue this work by identifying the presence of the cycling citizen in Brisbane cycling policy documents. They argue that the cycling citizen is actively constructed by cycling policy, with representations of cyclists being reduced to MAMILs (Middle Aged Men In Lycra) with little or no inclusion of women, people of colour or diverse body shapes. The major implication of constructing cycling citizenship in this way is that policy is created for this type of cyclist, while others are ignored. As discussed earlier, favouring already over-represented groups within cycling promotion can negatively impact on the cycling rates of underrepresented groups (Aldred, Woodcock, & Goodman, 2016).

2.6 Cycling cultures and identities

Cycling cultures and identities are further explored in the literature. Steinbach, Green, Datta, and Edwards (2011) examine how transport choices are shaped by gender, ethnicity and class identities through interviews with cyclists and non-cyclists in London. They argue that people identify with cycling through the lens of their other personal identities, and that this will influence whether or not they cycle and how open they will be to cycling promotion from governments and advocates. Aldred and Jungnickel (2014) similarly make the case that culture matters when making transport policy. They argue that the meanings cycling holds in different localities will necessarily impact on how successful different policy interventions will be, and that cycling promotion and policies should reflect the diversity of the population they target, and be informed by a variety of identities and experiences.

An article by Aldred (2013) explores how cycling identities were linked with stigma in two UK cities, Hull and Cambridge. Both cities have high cycling rates for the region, though each has its own meanings associated with the practice. She found that participants in Hull did not see themselves as part of a cycling culture, largely due to cycling being used as a mode of transport through economic necessity. Cambridge, by contrast, had a more intentional

cycling culture, due to its largely middle class demographic. Despite these differences, participants in both cities experienced stress managing the stigma associated with conflicting negative cycling identities of being either “incompetent or too competent” at cycling. Too competent referred to being a "proper" cyclist, someone who has expensive equipment, rides in a fast, confident and perhaps aggressive way, and wears a helmet and other cycling specific clothing. Incompetent referred to being tentative or less than confident, not wearing the “right” clothes and not knowing how to behave in traffic or to maintain a bike. Both possible stereotypes of cyclists are seen as negative, therefore, it was difficult and stressful for people to manage these identities.

There has been alternating debate about the framing of cycling identities and their subsequent associated behaviours. Aldred (2010) takes issue with the distinction made by Cupples and Ridley (2008) between the “good cyclist” and the “bad cyclist”, in particular that cyclists who engage in certain behaviours are “fundamentalists”. She notes that certain negatively stereotyped behaviours of cyclists are in fact reflective of environmental, policy and social contexts in automobile dominated cities that are at best unsupportive of cycling, and at worst openly hostile towards it. While the focus of Cupples and Ridley’s article is on cycling as an environmental response, and the reflection that there are in fact many ways to respond to the environmental crisis, that cyclists shouldn’t take the higher ground with issues around equity is missing from their analysis. As Koglin (2011) responds, transport planning needs to include provision for cyclists because doing so will provide for a fair and equitable city. With the stresses of managing conflicting and unwelcome negative stereotypes, the cyclists in Aldred’s 2010 paper are reflecting a larger perception and experience of unequal consideration of cycling in the structure of urban spaces.

2.7 Embodied experience

Cycling scholars are beginning to engage with the embodied aspects of the practice, in order to develop understandings of how cycling is experienced. Topics of investigation have included mapping sense-scapes of commuter routes in Utrecht (Duppen & Spierings, 2013), auto-ethnography of cycling in different urban contexts (Jonas Larsen, 2014) and the embodied experience of becoming a bicycle commuter (Lee, 2015).

Jones (2012) explains the way in which commuter cycling makes visible divergent and radical ways of being. He discusses the physical and emotional intensity of the experience of cycling in opposition to the carefully curated sense-scape of middle-class western societies. He

proposes that cycling, due to its physicality and direct engagement with the world via the sensing body is a small act of deviance in an increasingly sanitized and controlled world. He argues that in places where cycling is not normalized, cyclists necessarily have different levels of affective capacity to cope with both the physical and emotional challenges of cycling as well as acting contrary to societal messages about appropriate behaviour and comportment. Jones (2012) argues that acknowledging different affective capacities can aid in developing understandings of cycling in cities. Jungnickel and Aldred (2013) continue with this theme, arguing that contrary to negative media representations, cyclists are not mindlessly travelling through the city, but rather are utilising different strategies, such as listening to music, to curate their experience by meditating negative sensory input from challenging environments, whether traffic or waterway or park.

2.8 Mobile methods

With the mobilities paradigm has come a rise in the use of mobile ethnography and accompanying methods of data collection. This has the potential to improve both academic understandings of how mobility is experienced, as well as improving the capacity to make sustainable transport policy (Cresswell, 2012; Sheller & Urry, 2016). In the context of cycling research, mobile methods are being used to capture non-representational aspects of cycling, including sensory, emotional and affective elements of the individual cyclists' experience (Spinney, 2015). This includes the researcher developing understandings of cycling through, for example, analysis of their own participation and performance of riding in the city (Jones, 2005, 2014) or auto-ethnography of different cycling contexts (Larsen, 2014); the use of mobile video ethnography (Brown, Dilley, & Marshall, 2008; Spinney, 2011); or a combination of methods including sound, video and GPS recording while engaged in a ride-along (Duppen & Spierings, 2013). A researcher accompanying the subject while they are engage in the activity under study is known as a go-along interview, and can take many forms (Spinney, 2015). The method complements the traditional semi-structured interview by allowing data describing the embodied experience to be collected immediately as the phenomenon under study is occurring, rather than after the fact as a recollection (Jones & Evans, 2012, p. 94). The method has facilitated data collection in a range of mobilities studies, from walking (Carpiano, 2009; Evans & Jones, 2011; Kusenbach, 2003) to wheeling (Parent, 2016) and cycling (van Duppen & Spierings, 2013).

While being with the participant can facilitate developing an empathetic understanding of their experience, the presence of the researcher in a go-along is not always necessary or

desirable. To take the case of cycling research, in locations where the lack of appropriate infrastructure makes riding alongside a participant hazardous, technology can be used as a stand-in for the researcher. Head, body and bike-mounted video cameras, for example, are used to visually capture cyclists' experiences from different perspectives (Brown et al., 2008; Spinney, 2009).

Merriman (2013), however, is less convinced about mobile methods, particularly forms of go-along where the researcher aims to develop understandings of phenomena as they occur. He is concerned that this form of methodology is to the detriment of older, more established methods of ethnographic enquiry such as semi-structured interviews that have been demonstrated to yield rich and valuable data and techniques for analysis. As Spinney (2015) counters, however, a variety of methods are useful for answering different questions. If, for example, the research question is regarding how someone experiences mobility in the moment, then a form of go-along analysis may yield more interesting and relevant information than a traditional sit-down interview, or even participant observations. The use of the go-along method in combination with other standard ethnographic tools or indeed quantitative research methods may prove to be particularly powerful.

2.9 Conclusion

There is a wealth of cycling literature examining aspects of the physical structures of cycling and strategies to increase mode share, yet comparatively little that considers the social and political context by which it is anticipated that cycling will increase. As this review of the literature has shown, in order to form sustainable cycling policies for a diverse population, cyclists need to be consulted in meaningful ways for policymakers to understand perceptions of cycling, ethnic, social and class identities and the embodied experience of cycling. Mobile methods can, in combination with traditional data collection, increase the possibilities for developing more nuanced understandings of cycling, by comprehending cyclist needs and desires, and ultimately designing relevant policy. The majority of cycling research has thus far been done "on" cyclists, and not with them. This thesis endeavours to bridge this gap by exploring how the combination of traditional qualitative data collection and a novel go-along method of interview can give voice to the cyclist experience by directly engaging with the cyclists themselves.

Chapter 3 Research Design

3.1 Introduction

In his 2011 paper on mobile methods, Spinney stresses the importance of developing an understanding of "those fleeting, ephemeral, and often embodied and sensory aspects of movement" (Spinney, 2011, p. 162) in order to make sense of mobility and transport, and in turn make better decisions when planning cities. In consideration of the central question of this thesis, which asks how can people's experiences cycling in urban environments be understood and used to inform transport policy, the methodology described in this chapter has thus been designed to capture the "fleeting" and "ephemeral" sensations people have riding bikes in cities.

The chapter begins with an explanation of the methodology underlying the thesis and how it enables and facilitates an understanding of experience in studies on mobility. The remainder of the chapter describes the methods chosen to undertake the research, namely desktop analysis, case studies, interview and thematic analysis, as well as how and why they have been included.

3.2 Methodology

This thesis uses phenomenology as a methodological guide for the selection and application of the research methods. Phenomenology asks that we acknowledge the world can only be known as it appears to perception. The methodology provides a framework for letting the phenomena under study tell about themselves, with the hope that in doing so, the essence of those phenomena will be uncovered. Hence, the intent is not to interpret but rather to "describe as closely as possible the way the world makes itself evident to awareness, the way things arise in our direct, sensorial experience" (Abram, 1997, p. 35). The research presented here, therefore, seeks to capture, represent and understand people's lived, embodied experiences (Clandinin & Connelly, 1998, p. 155), in this case of riding bikes in cities, and in the process uncover what might be common within those experiences (Patton, 2002).

Phenomenology has previously been used as a methodology for research in mobility (Darker, Larkin, & French, 2007; Evans & Jones, 2011; Kusenbach, 2003; Mann & Abraham, 2006). As discussed in Chapter 2: Literature Review, mobilities studies provide both theoretical and

methodological tools for developing understandings of the world that recognise mobilities as entwined in all aspects of our lives (Sheller & Urry, 2006; Urry, 2007). Indeed, as Thrift contends, "it would be possible to argue that human life is based on and in movement" (Thrift, 2009, p. 5). The primacy of movement for mobilities scholars resonates with phenomenology, as within this theoretical framework, all things are unified through holding both a potentiality of movement as well as potential trajectories that link them with all other things (Spinney, 2015, p. 234).

In order to develop deep understandings of phenomena, we need to focus our attention on the site of experience and knowing; the body. "Bodies sense and make sense of the world" (Buscher & Urry, 2009, p. 102), but crucially, it is the body-in-movement that illuminates our relationship with the spaces we inhabit (Merleau-Ponty, 2014, p. 105). In Kusenbach's words, "our experience of the environment is fundamentally based on the coordinates of our living body, giving 'place' primacy over 'space'" (Kusenbach, 2003, p. 455). This thesis centres on the embodied, mobile experience of cities, as described by people riding bikes, to develop an understanding both of mobility and the conditions that enhance and restrict it.

The bulk of cycling research, as explored in the previous chapter, is done "on" cyclists, and not from a first person perspective. Larsen (2014), however, has taken an auto-ethnographical approach to developing an embodied understanding of how affective capacity for cycling may increase over time and practise. The arguments he presents for using auto-ethnography to develop an intimate understanding of bike riding in different environments, and in particular to illustrate how engaging in a practice can impact on the body over time are compelling. This research, however, utilises a combination approach of general data collection through semi-structured interviews with a more specific and embodied data collection through the use of go-along interviews. The intention is that this approach will offer a similar level of intimacy to an auto-ethnographic study, yet with greater capacity to produce rich data collection through capturing a broader and more diverse range of experiences, and furthermore, increased applicability for use in a policy setting.

If phenomenology as a "philosophic system rooted in subjective openness" (Moustakas, 2011, p. 2) becomes used as a research methodology, with the intention "to focus attention on the relationship between subject and object and to describe the experience from the first person point of view" (Spinney, 2015, p. 233), then it is necessary to take steps to minimise, if not remove, the influence of the researcher on the results. Husserl, perhaps the most influential philosopher with regard to transcendental phenomenology as research

methodology (Moustakas, 1994), developed a theoretical tool for this, which he termed "epoche" (Moerer-Urdahl & Creswell, 2004, p. 6; Moustakas, 2011, p. 2). Epoche is a process whereby the researcher consciously sets aside their biases, "to perceive and receive that which is communicated without tainting its purity with preconceived beliefs, thoughts, or judgments"(Sheehan, 2014, p. 11) and be open to whatever data emerge from the phenomena at hand (Creswell, 2013, p. 80). This thesis utilises epoche in several ways: by providing an outline of the researcher's personal background to the subject of cycling and sustainability in the preface to this work; through the selection of methods; by careful construction of the interview questions so as not to "lead" the interviewee; through the conduct of the interviews; and in the approach within the thesis to thematic analysis. Nevertheless, despite best efforts, the removal of personal biases, developed over a lifetime of experiences, is an impossible task. While the intention of this research is to acknowledge the background and consequent biases of the researcher, while consciously minimising the influence these may have on the analysis and outcomes of the research, complete success in this regard is improbable.

In line with the above, the methods outlined in the remainder of this chapter serve to focus the researcher's attention on the relationship between those who ride bikes, and the act of bike riding, while making best efforts at minimising the influence of the researcher. The methods have been chosen for their use in capturing the lived experience of the act of cycling, as close as possible to the essence of the act.

3.3 Methods

In the following section, the suite of methods used within the phenomenological framework outlined above are described. Although the approach taken in this research is recursive and iterative, the general chronology of the methods used is: desktop analysis, multi-case study, interviews, thematic analysis and visualisation. The methods used in this thesis are chosen in order to address the limited work done on experiences from the perspective of the cyclist, based on an assessment of the methodologies of prior studies as reviewed in Chapter 2. As such, they have been selected for their efficacy in accessing the emotional and personal expression of the cycling experience as told by cyclists, and to enable a direct capture of the embodied experience of cycling. An ethics permit for this research project was obtained from Curtin University under Form C, Application for Approval of Research with Low Risk (Ethical Requirements), Approval Number HURGS-14-14.

3.3.1 Desktop analysis

As the previous chapters have outlined, the foundation of this thesis is a desktop analysis of the cycling literature relevant to developing understandings of cyclist experiences and how these understandings can be incorporated into sustainable transport policy. The review of literature relevant to this research informs all aspects of the thesis, including definition of the overall research objective and research questions, development of the methodology, application of the methods, interpretation and discussion of the research findings and formulation of policy recommendations.

A systematic approach was taken to the literature review, which progressed through the stages shown in Figure 3.1, adapted from Rolfe (2014). It should be noted that in practice this process is not linear; the third and fourth stages may be repeated to clarify discrete areas of the literature and determine the research question.

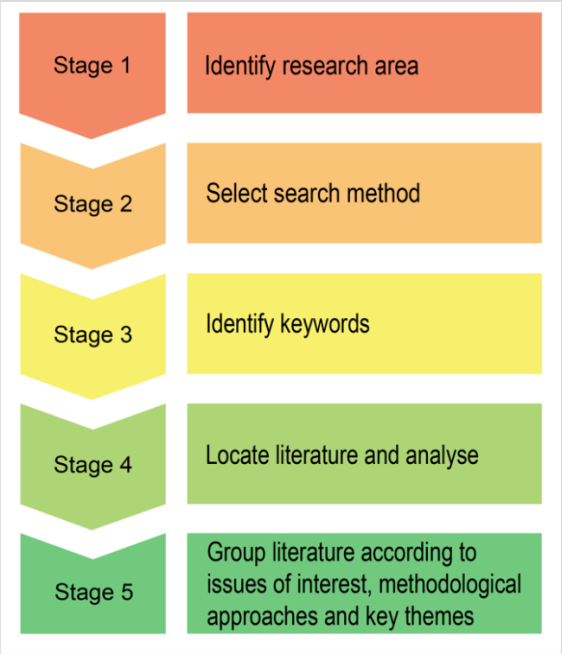


Figure 3.1 Stages undertaken in desktop analysis

3.3.2 Multi-case study

The research was developed as a multi-case study. This approach allows the researcher to develop an understanding of how the different contexts of each case may influence the kinds of experiences people have (Baxter & Jack, 2008, p. 556). This method was chosen with the intention of discovering how and why people ride bikes in three contrasting urban areas, and functions as a situational frame within which the other methods in this study work to meet the research objectives (Flyvbjerg, 2011; Yin, 2009).

Three case study cities, Perth and Melbourne in Australia and Utrecht in the Netherlands, are the basis for the fieldwork for this thesis conducted with bike riders. Specifically, the research compares the experiences of cyclists in the inner-urban areas of Perth and Melbourne with Utrecht. The case studies were chosen for their contrasts in geography and demography, as well as cycling rates, transport cycling infrastructure, governance and culture.

While the Australian cities of Perth and Melbourne have broadly similar urban form, with a denser CBD surrounded by lower density urban sprawl, the inner-urban areas, which are the focus of this study, have different geographies and compositions. Inner Perth has several small urban centres, areas of greater density and land use mix, however these centres are often several kilometres apart, separated by open space and suburbs. Public transport is very much focused on shuttling workers from the suburbs to the central business district, with poor cross-city connections. While in the inner city cycling is more likely to be seen as a potential transport mode, overwhelmingly the culture is one of Lycra clothing, expensive bikes and recreation. The infrastructure available for cycling is reflective of this culture; priority in resources and space is given to picturesque routes adjacent to the rivers and beach, or long-distance commuting alongside freeways. Inner Melbourne, by contrast, is much more uniformly dense and mixed use than Perth, with comparatively better intra-urban public transit options including bus, tram and train. Despite Melbourne's reputation for a vibrant transport cycling culture and cycling-responsive local governments, this image is largely confined to a small group of inner-north councils. Outside this cycling-friendly zone, infrastructure and acceptance of cycling is varied. South Melbourne's cycling culture and infrastructure, for example, bear more similarity of that in Perth. Both cities have low transport modal share for cycling, and lack an overall comprehensive network of cycling infrastructure, well integrated with other transport modes.

The Dutch city of Utrecht offers a striking comparison with both inner Perth and Melbourne, featuring "best practice" cycling infrastructure, policies and culture, and a high cycling mode share (Aldred et al., 2017; Pucher & Buehler, 2008; Pucher, Garrard, et al., 2011). The city as a whole is of comparable size and composition to the inner areas of Perth and Melbourne, both of which have substantially larger greater metropolitan areas. Utrecht features widespread and comprehensive public transport networks, complementing the extensive infrastructure for transport cycling. With most residents using a bike for transport at least some of the time, and one of the highest mode shares for cycling of any city, this way of transportation has become a normalised part of everyday life in Utrecht.

While Perth and Melbourne have their differences, they are more similar to each other than to Utrecht, which offers a very different climate, cycling culture and transport mix. The inclusion of Utrecht in this study provides an opportunity to explore how cycling is experienced in a "best practice" city, and what lessons may be learned from these experiences that can be used to inform the development of sustainable transport policy in Australia. The case studies are discussed in depth in Chapter 4: Cities and Participants.

3.3.3 Recruitment of research group

In 2015, the researcher recruited participants in the three case study cities. Participation was limited to people over 18 years of age who regularly live or work in one of the case study cities and who use a bicycle within the city on a regular basis, primarily as a mode of transport.

A snowball sampling method was used to recruit participants (Biernacki & Waldorf, 1981; Kumar, 2011, p. 208) through posting information about the project on the social media websites Twitter and Facebook, and through word of mouth. Potential research subjects were encouraged to share the project outline and contact details with other bike riders (Darker et al., 2007, p. 2174). The main benefit of snowball sampling for recruitment is that it allows participants to be found without the researcher having pre-existing networks in the case study locations. In the particular case of this thesis, there were no suitable "transport cyclist" databases to draw random potential participants from as an alternative to this approach. It should be noted, however, that using the snowball sampling method did result in a reasonably homogenous participant group as the nature of social media is that information is shared amongst peers of similar social, economic, cultural and class backgrounds, and this must be taken into consideration when reflecting on the particular biases the participant group may bring to the research. Nevertheless, the resulting participant group was comparably similar across the three case study sites, and yet did contain diversity of cultural, occupational and educational backgrounds as well as gender. More detail on the three participant groups is provided in Chapter 4: Cities and Participants.

To ensure the safety and comfort of the research participants, as well as compliance with Curtin University ethical obligations, the project and purpose of the interviews were simply explained in plain language, both verbally and in writing, to those interested in participating and their consent for involvement sought before interviews began (see Appendix A Information Sheet and Appendix B Consent To Participate in Research). Participants were advised that they were free to withdraw from the research at any time for any reason; that their privacy would be respected; and that any information collected would be kept in confidence (Moustakas, 1994, p. 110).

Participants' data (including verbal recordings, GPS tracking and contact details) and identities were anonymised. Descriptors were used in place of real names throughout the research process (Creswell, 2013, p. 174). To maintain a sense of the participants' identities, while maintaining anonymity, the names chosen for participant descriptors were culturally matched to their original. Anonymity was also promised to allow participants to freely express their ideas and opinions in case of a clash of ideologies with their own organisations or communities (Pucher, Garrard, et al., 2011, p. 333). Personal GPS data has not been released publicly, aside from an example ride accessible in the source code repository described below. The GPS data for this ride has had the start and end of the track removed so as not to potentially show the home or workplace of the participant. Individual go-along maps presented in this thesis do not contain the start and end points of journeys.

In total, 37 people participated in the research, with 10 in Perth, 18 in Melbourne and 9 in Utrecht. The size of this group is appropriate for a phenomenological study due to the in-depth nature of the inquiry (Darker et al., 2007, p. 2174), the exploratory nature of this research and for testing methods with the goal of understanding the processes involved in shaping cyclist experiences in a city with particular characteristics (Darker et al., 2007, p. 2181). It should be noted that while the small sample size cannot be considered representative of the populations in these case study cities, it is not the purpose of qualitative research to provide this or any statistical generalisation. Rather, as a qualitative study, this thesis offers analysis of repeated themes emerging from interviews with people who cycle in different cities, until a saturation point is reached. As such, the variations in sample size also do not pose a problem for analysis as once saturation with a particular theme is achieved, further data will not be advantageous.

3.3.4 Interviews

This research draws on two types of interview for data collection: semi-structured interviews and the "go-along" method. These two interview methods were chosen to be complementary, allowing the collection of different kinds of data, to build a picture of a participant's general cycling experiences and what was important to them, as well as a pre-reflective, specific description of a bike ride in-the-moment. Each research participant was interviewed twice, using both the semi-structured and go-along interview techniques outlined below.

3.3.4.1 Semi-structured interview

The semi-structured interview is a key source of material in phenomenological studies (Creswell, 2013, p. 161; Moustakas, 1994, p. 114) due to its ability to reveal aspects of a phenomenon beyond what can be observed (Kusenbach, 2003, p. 462). Semi-structured interviews are often used in mobility research similar to this thesis, for example, cycle commuting in Scotland (Bekkum, Williams, & Morris, 2011), citizenship and wheelchair use (Gaete-reyes, 2014), a controversial cycle network in Launceston (Vreugdenhil & Williams, 2013) and the influence of identity on healthy transport choices (Steinbach et al., 2011). In this study, semi-structured, in-depth interviews were undertaken face-to-face with participants in each case study city, to develop an understanding of the cycling experience which may be hidden from outside observation (Kumar, 2011, p. 144).

The backgrounds and prior experiences of both researchers and participants inevitably influence what data is collected during an interview (Clandinin & Connelly, 1998, pp. 165–6). For in-depth interviews to be undertaken within the transcendental phenomenological framework outlined above, the researcher must conduct the interviews in a way that brackets any pre-conceptions of the interviewer so that they may be fully open and present for whatever may arise in the conversation (Moustakas, 1994, p. 33). For this research study, this was achieved in two ways: firstly, through the selection of interview questions, and secondly through the conduct of the interview.

In order to meet the research objective, several categories of questions were decided on after analysis of the cycling literature explored earlier in Chapter 2: Literature Review. These categories were: Participant Background, Cycling Motivations, Embodiment, Emotion, and Route Selection. Within each of these categories were several questions (Table 3.1) relating to different aspects of the category. The questions were designed to be open-ended, and not lead the participant to answer in a particular way.

Table 3.1 Interview categories and questions

Category	Questions
Participant Background	• What is your age? • Where did you grow up? • What is your occupation? • How often do you ride a bike? • How long have you been cycling for transport?
Cycling Motivations	• What role does cycling play in your life? • Why did you start riding a bike? • Do you call yourself a cyclist? What kind of cyclist do you think you are? • Give one word that describes your experience of riding a bike in [city]?
Embodiment	• How do you feel when you ride a bike? • What external factors most affect your riding experience? • When you are riding your bike, do you engage with your surrounds? Or do you prefer to tune them out? • Do you listen to music/other while you ride? Does this change the experience for you? If so, how? • Do you notice smells, sounds, or temperature more when you are riding compared with other modes of transport?
Emotion	• On the whole, how do you feel when you ride your bike? Is it relaxing, stressful, exhilarating, calming, fun, annoying, confusing, satisfying, playful…? • What makes you feel most happy when you are riding? • Do you ever get upset while riding your bike? • Does your emotional state change in different cycling environments? • Does your emotional experience of cycling influence how often you cycle?
Route Selection	• Do you notice animals and plants when you ride? • What makes a road pleasant to ride down? Does the presence of certain characteristics make you more likely to choose a particular route? • Does your riding environment influence how much you ride? • Are there environmental factors which make you want to ride more and why? • Does riding make you feel like you know the city better? Does it give you a better “map”? • How does riding a bike affect your engagement with other people in the street (road users, pedestrians etc.)?

The interviews were conducted in a conversational manner, with the questions asked in a manner and order that maintained a relaxed and natural flow, without rigid time restrictions for answering. The intention of this approach is to minimise the influence of the researcher, by allowing the participant to direct the shape of the conversation, though the parameters of the study necessarily preclude extreme deviation from the interview format and content. Provision is made for participants to answer questions in a way in which they are comfortable, resulting in the interview expanding to topics beyond the initial scope, yet remaining relevant to the subject (Stuckey, 2013). On occasion in this study, some questions were found to be irrelevant and so in this free format, were able to be skipped without interrupting the flow of the interview. Importantly, this approach honoured "the centrality of relationship among researchers and participants" (Clandinin & Connelly, 1998, p. 168) by allowing for the conversational output to reflect what interviewer and interviewee brought to the interaction. Through the casual development of friendly rapport, participants could feel comfortable to share the intimacies of their cycling experience (Moustakas, 1990, p. 48).

To create an environment conducive to relaxed conversation, the semi-structured interviews took place in cafés and public spaces such as town squares and parks, as decided in prior consultation with the research participant. The interviews were conducted during the time period from March 2015 to February 2016, with a duration of approximately 25 minutes. An Apple iPhone 6 was used to record the conversations, which were later transcribed for thematic analysis.

3.3.4.2 Go-along interview

While acknowledging its value, Kusenbach (2003) explains that there are limits to using the semi-structured interview as a method for trying to uncover the essence of phenomena. Those being interviewed either may not want to talk about a particular experience, or they may be unable to talk about their experience because the structure of the traditional sit-down interview precludes "…those themes that do not lend themselves to narrative accounting, such as the pre-reflective knowledge and practices of the body, or the most trivial details of day-to-day environmental experience" (Kusenbach, 2003, p. 462). In such a case, mobile methods of qualitative assessment can create additional layers of understanding beyond the restrictions of the semi-structured interview and other traditional qualitative research methods (Spinney, 2015, p. 235).

This thesis uses an adaptation of the go-along approach of Jones and Evans (2012) by providing participants with a smartphone and lapel microphone to record their ride, in lieu of riding with a researcher present. Whilst in other similar cycling research (van Duppen & Spierings, 2013), go-along interviews do take the form of ride-along, for this thesis ride-along was deemed to be too high-risk in busy urban environments without consistent cycling infrastructure, separate from other traffic, as is often the case in Australian cities (Pucher, Garrard, et al., 2011). Using technology as a stand-in for the researcher has other benefits too. The fast-pace of a cycling journey can make it difficult to ask questions and record answers in the moment (Kusenbach, 2003, p. 465), and allowing the participant to narrate and record their personal experience avoids this limitation.

For this research participants were invited to create a 'snapshot' of a 'typical for them' cycling journey, the purpose being to record one of their regular, every day cycling trips. The narration of participants as well as their route was recorded onto the smartphone, with the data ultimately being presented as a mapped narrative of a bicycle ride. Operating within a phenomenological framework, this particular method of go-along has been chosen for its effectiveness in capturing pre-reflexive, in-the-moment descriptions directly from the cyclist. This minimises the influence of the researcher, who is only present via the presence of the recording device, as well as the participant, who simply does not have much time to reflect and self-censor their commentary on their cycling experience. By enabling "access [to] the ephemeral and the everyday in the performance of cycling" (Jones, 2012, p. 650), this method utilises recording devices in lieu of in-person data collection, providing a window into the direct experience of the cyclist with minimal influence or interruption from the researcher.

Limited instruction was given to the participants by the researcher in regards to how they should describe their cycling experience during the go-along, so as not to affect their commentary and create a data set representing a typical bike ride in each city. The go-along took place on a route familiar to and chosen by the cyclist, ideally during their usual daily activity (Kusenbach, 2003, p. 465). The time taken for the journey was requested to be between ten and forty-five minutes, which varied between case study locations due to differences in urban form, cycling amenity and physical capability of the participant.

As shown in Figure 3.2, to verbally and spatially record a bike ride, participants were issued a smartphone (Apple iPhone 4s) and a lapel microphone (Røde smartLav+), and used their own bicycle and other equipment if necessary (e.g. helmet as required by law in Australia). They were provided with both written (see Appendix C - Instructions to Participants) and verbal instructions

on how to use two necessary applications on the smartphone: a GPS tracker, Motion-X GPS, and the voice recording application Voice Memos, which comes as standard with the iPhone operating system (iOS). The accuracy of the iPhone's GPS was limited compared with a high-end, built-for-purpose device, however any inaccuracies in the tracks provided were not sufficient enough to affect the interpretation of the results. Using a smart phone had the additional advantage of requiring that participants only carry and use one device.

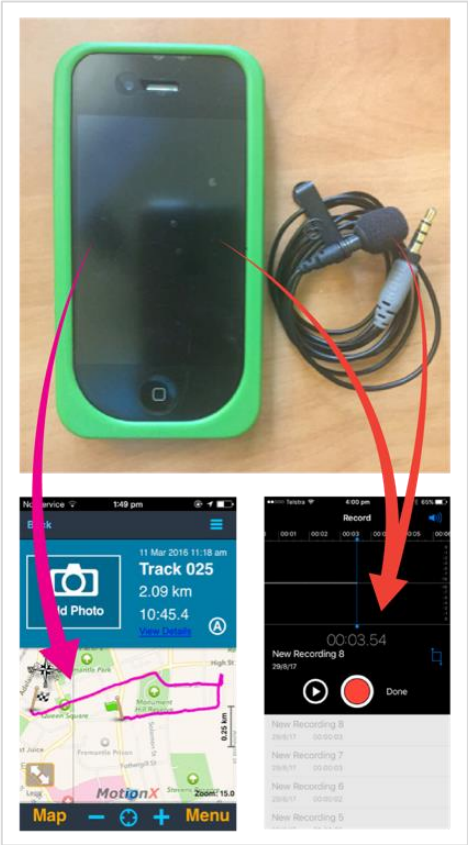


Figure 3.2 **Apple iPhone 4S and Røde smartLav+ lapel microphone, and screenshots of applications Motion-X GPS and Voice Memos**

3.4 Thematic analysis

Thematic analysis draws meaning from text, in this case, transcriptions of the semi-structured and go-along interviews. Through the identification of themes, the researcher is able to locate patterns within the data, and note commonalities and differences in experiences both between subjects and across case studies (Braun & Clarke, 2006; Kumar, 2011, p. 278). Working within a phenomenological framework, the approach to thematically analysing the semi-structured and go-along interview transcripts, Interpretative Phenomenological Analysis (IPA), is chosen for its ability to retain the voice of the participant while minimising the biases of the researcher (Darker et al., 2007; Mann & Abraham, 2006; J. A. Smith &

Osborn, 2008). Despite the intentions of this approach, this remains a “best effort”, as the researcher is still very much in control of the research process, with remaining implicit and explicit biases. It has been used in similar mobility research, including Bekkum et. al. (2011) on perceptions of commuter cycling, and Darker et. al. (2007) on walking.

The intent of IPA as a method of analysing interviews is to “understand what it is like, from the point of view of the participants, to take their side” (J. A. Smith & Osborn, 2008, p. 53). An essential condition for enabling this understanding is the epoche process described in section 3.2 Methodology, whereby the researcher necessarily brackets off their own presuppositions and judgements from the examination of the data. As an iterative process, IPA is aimed at drawing meaning from interviews by analysis of transcript text. The process begins with the interviews themselves, as initial notes are taken during the conversation with participants. Further emersion into the data occurs during transcription as the interviews are listened to again, and the researcher is reminded of their context, as well as the person being interviewed.

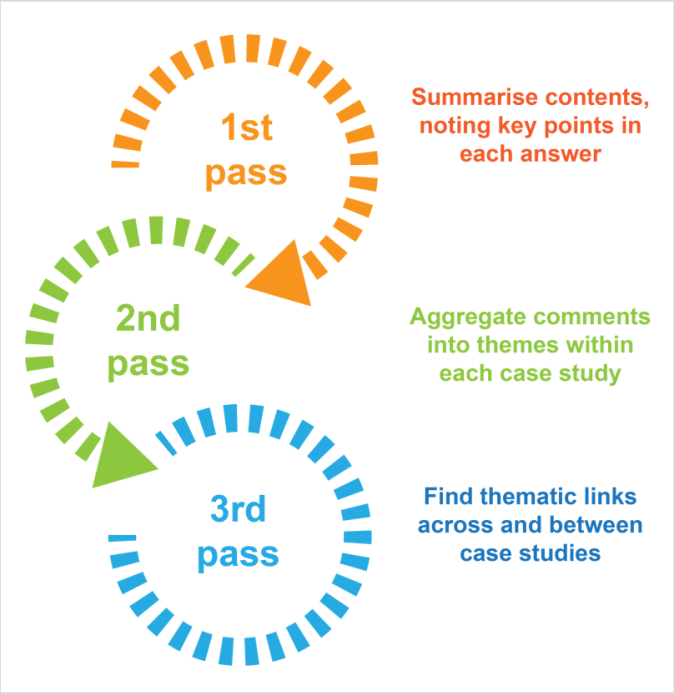


Figure 3.3 Stages of Interpretative Phenomenological Analysis (IPA) as applied to interview transcripts

In the core stages of IPA (Figure 3.3) the researcher makes several passes over the interview transcript while taking notes alongside the text, summarising and distilling the information into clear concepts. With each iteration and subsequent distillation of ideas, distinct themes emerge, and allow for comparisons of individuals’ experiences within and between interview methods and across case studies (Darker et al., 2007, p. 2175). The identification of the

themes presented in Chapter 4: Cities and Participants, and Chapter 5: Semi-Structured Interview Results, come both from the data itself, as was present in the words of the participants, and through analysis of the relevant cycling literature.

3.4.1 Visualisation

The style of go-along interview used in this study culminates in the collection of two sets of data; the transcription of a narration and a GPS track of the route taken. The combination of the two sets of data is represented in this thesis as a map showing the participants' comments plotted along the route of their bike rides (Figure 3.4). This is referred to by Jones and Evans (2011) as a *spatial transcript*, and it allows the two sets of data gathered in the go-along to be visually interrogated.

As a tool for visualising mobile experiences, "the spatial transcript represents a potentially powerful technique to explore how mobile subjects both conceptualise the spaces they move through and how these spaces in turn shape their reflections" (Jones & Evans, 2012, p. 92). Visualisation adds further layers of meaning to go-along data by providing the thematic analysis with a spatial context for interpretation (Jones & Evans, 2012, p. 93). This method draws on grounded visualisation, which in turn is based on grounded theory, whereby the researcher makes sense of data via the use of thematic coding and, after several reflexive iterations, the identification of patterns (Knigge & Cope, 2006, p. 2025). This mirrors the IPA process used to draw out themes from the text.

From the go-along data a spatial transcript was created specifically for this thesis in the form of a custom web application. The process of preparing the data to make the application was similar to that outlined in Jones and Evans' study (2012) in which the narrated rides were fully transcribed with comments time stamped to enable pairing with GPS data. However, the method used here deviates from Jones and Evans' (2012) by segmenting the transcript according to the natural flow of the narration, rather than in standardised 10 second intervals, thus maintaining the integrity of the comment as a complete idea, and preserving the intended meaning imparted by the participant. The method used for displaying the data also differed in utilising a web application rather than ArcGIS or similar proprietary software. This approach was taken due to the software development tools being open source and thus freely available[1].

[1] Obviously, a certain level of proficiency with programming is necessary to make use of open source tools for software development. For those keen to learn to code, there are many free courses available online, such as https://www.codecademy.com/ and free workshops and regular meetups globally, such as those run by https://djangogirls.org/.

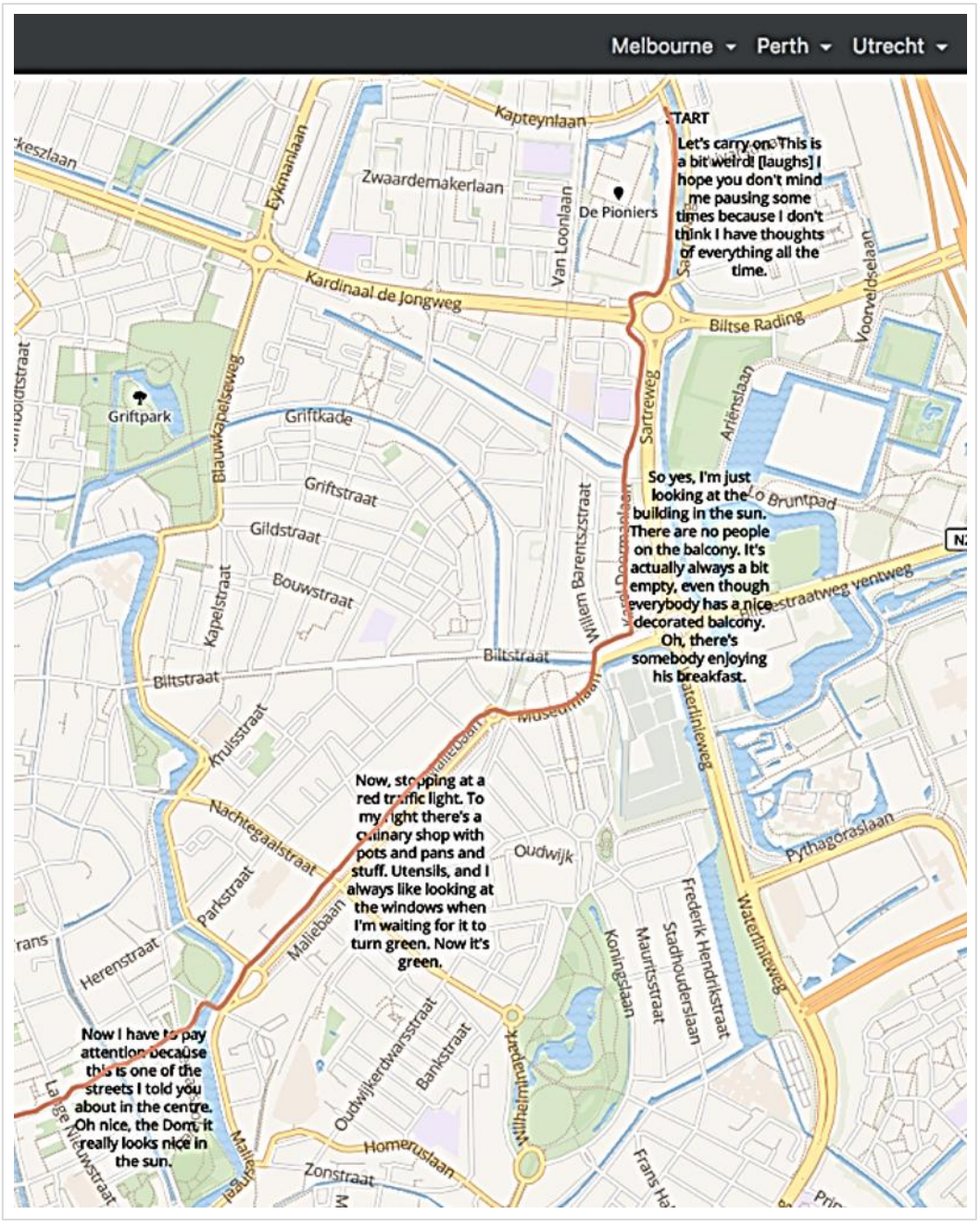


Figure 3.4 **Screenshot from an early version of the custom web application showing a go-along interview in Utrecht.**

The application was primarily created using the programming languages Python and Angular JS to combine the comments as *.csv files and GPS data as *.gpx files, and present the combined information on a Mapbox.org base layer map[2]. Identifying comments, such as references to colleagues, workplaces or acquaintances, within the text were omitted from

[2] While Mapbox.org has many features available for creating maps, the services offered are not sophisticated not dynamic enough to pair timestamped comments with GPS data and create spatial transcripts. The web application created for this thesis was custom built, using Mapbox primarily for its base layer map.

the raw data. Screen-shots from the application illustrating the go-along interview themes are shown in Chapter 6: Go-Along Interview Results as Spatial Transcripts 6.1 to 6.64.

Ideally, when creating open source software, the source code should be completely accessible to other users in an online repository, so that others may use, contribute to and potentially improve the application. In addition to the source code, the repository generally contains the history of major changes made during the creation of the application. This is helpful information for anyone who has not been intimately involved with a project to understand how the code was written and why certain decisions were made. A repository of the source code built to visualise the participants' go-along interviews in this thesis, nicknamed BikeMaps, is available in the GitLab repository https://gitlab.com/chidg/bikemaps. Identifying participant data has been removed from the source code, including the start and finish of the GPS track for the example ride given. Anyone with programming abilities can access this repository to run the application and modify it to suit their purposes.

In line with the phenomenological aims of this project, mapping participants' spoken thoughts about cycling both locates the comments in space as well as providing a way of accessing this locational context through visualisation. In an exploration of commuter cyclists, Jones and Burwood (2011) create thematic maps of cyclist commentary with the purpose of stimulating conversations about cycling through an exhibition. Visualisation through mapping is used here with similar purpose, for its potential application in a policy setting.

3.5 Summary

This chapter described the multi-method, phenomenological approach used within this thesis, with the entire approach visualised in Figure 3.5. The synthesis of the methodology and methods culminates to answer the core research question of how people's experiences cycling in urban environments can be understood and used to inform transport policy.

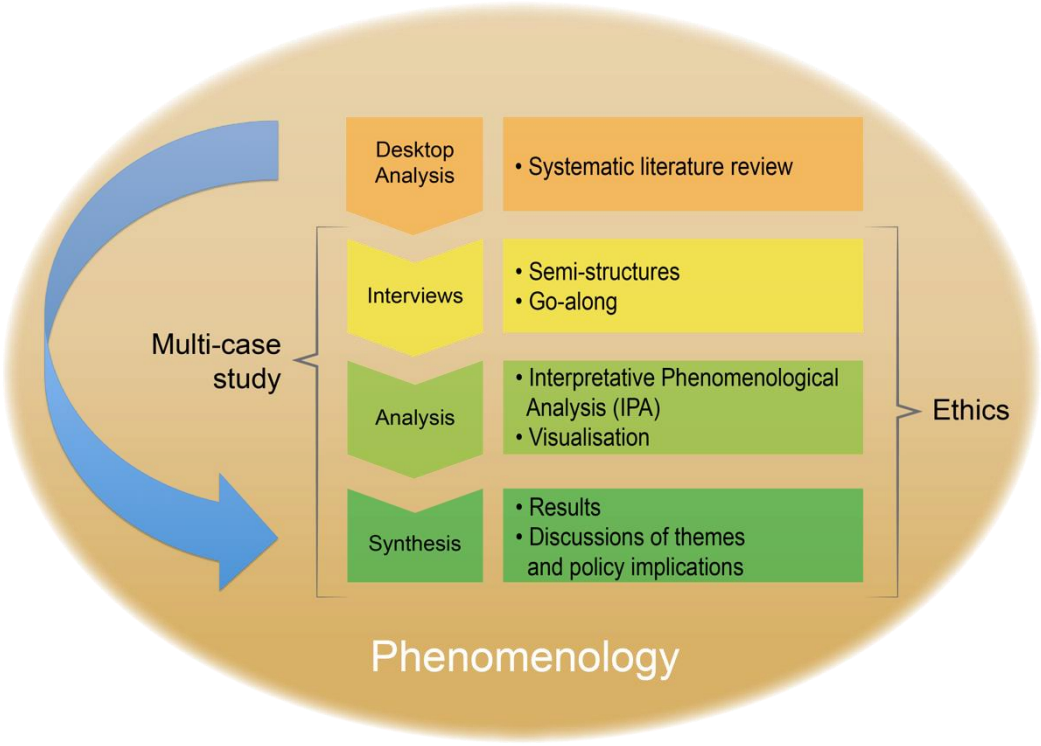


Figure 3.5 **Synthesis of methodology and methods used in this thesis.**

Chapter 4 Cities and Participants

4.1 Introduction

The data collection for this project took place across three case study cities, Perth and Melbourne in Australia, and Utrecht in the Netherlands. Within each city, cyclists participated in both semi-structured and go-along interviews, sharing their experiences of riding a bike.

This chapter describes and contrasts the characteristics of each city that impact on cyclist experiences including urban context, geography and climate, mode share, cycling demographics and policy context as described by the key documents available that relate to transport cycling. The participant group of each case study city is then described, providing the personal context for the results chapters to follow.

There are three main differences between the cycling environment in Utrecht and that of the Australian cities: culture, infrastructure and policy. The combination of all three has, together with geography and climate, created very different cycling conditions within each case study city. The approach of each city towards making policy for cycling is influenced by factors at the national level.

4.2 Australia

Though recent years have seen an overall increase in sustainable transport modes the rate of cycling averaged across Australia is not changing and the private automobile still remains the dominant transport mode (Mees & Groenhart, 2014, p. 70). Journey to work data (which includes people aged 15 years and older) collected in the national Census suggests around 2% of trips are made by bicycle, averaged across the country (Loader, n.d.). It should be noted, however, that the Census occurs once every five years in the month of August, which is often the wettest, coldest month of the year in Australia, particularly in southern regions. This timing may therefore not accurately reflect cycling levels, though it is unlikely they would be significantly higher (Loader, 2014).

According to recent data obtained by the Australian Bicycle Council in the National Cycling Participation Survey of 2017, 3.74 million people cycle each week in Australia, with 30.7% of those cycling for transport. The fact that 55.8% of households own at least one useable bike (Australian Bicycle Council, 2017a), and up to 20% of trips in Australia are less than

5km, indicates that there is scope to increase cycling for transport (Austroads & Australian Bicycle Council, 2010).

In a typical week, 20.4% of males and 10.7% of females, of all ages, will ride a bicycle with only 21% of commuter cyclists in Australia being female (Bonham & Wilson, 2012, p. 196; Heesch et al., 2012; Pucher & Buehler, 2008, p. 504). This feature of gender inequality is common to places of low overall cycling modal share, such as the US, the UK and Australia (Garrard et al., 2008; Steinbach et al., 2011).

The Central Business District (CBD) in Australian cities is an important financial, social and physical feature. Perth and Melbourne both have a comparatively dense urban core, which includes the CBD, surrounded by lower density suburbs with a predominantly dormitory purpose. The CBD has remained a strong focus for commerce, and much of the increases in inner city cycling rates can be attributed to commutes to the CBD for work (Burke & Bonham, 2010). In 2011, almost half of all bicycle trips in Melbourne were to the CBD (VicRoads, 2014). Cyclists now make up 17% of private vehicles entering Melbourne CBD in the morning traffic peak, greatly reducing the number of motorised vehicles required to transport people to work (Transport for Victoria, 2018b). This is also reflective of the impact of trip distance on cycling rates as those living in inner city suburbs have much shorter journeys to work in the CBD than those living further out (Pucher, Garrard, et al., 2011).

The most common reasons given for not cycling in Australia are that the distances are too far, or that they don't own a bicycle (Austroads & Australian Bicycle Council, 2010). However, perceptions of safety also remain a key reason for people avoiding cycling in Australia, with many potential and current cyclists expressing concern about sharing road space with motorised traffic (Chataway et al., 2014; Heesch et al., 2012; Office of the Auditor General Western Australia, 2015; Robinson, 2005).

Another barrier for transport cycling in Australia is the legal requirement for cyclists using public roads to wear a helmet. In the early 1990s Australian states and territories introduced mandatory helmet legislation (MHL), requiring all cyclists using public roads and paths to wear an appropriately fitted helmet. The penalties for not doing so vary from state to state with non-compliance attracting a $50 and $185 infringement in Western Australia and Victoria respectively (Insider Guides, 2017).

Legislation was introduced nationwide as part of a funding package from the federal government, requiring states to introduce MHL or funding for other road safety projects would not be provided. This introduction of MHL resulted in an immediate drop in cycling

rates. In the year following MHL introduction, cycling rates reduced by 36% in Melbourne, and 20% in Perth (Pucher et al., 2010, p. S114).

The Northern Territory later introduced an amendment stating that cyclists over the ages of 17 were exempt from wearing a helmet when riding on footpaths and cycle ways. This exemption has not led to an increase in rates of head injuries, and may be related to the higher proportion of people cycling for recreation and transport in any given week compared with elsewhere in the country (Transport Housing and Local Government Committee, 2013).

The topic of mandatory helmet legislation remains highly controversial. While a recent study found that helmets do prevent head trauma when used correctly (Cripton, Dressler, Stuart, Dennison, & Richards, 2014), critics argue that public policy should focus on population level health issues linked to sedentary lifestyle, such as heart disease, obesity and diabetes, that could be prevented with greater levels of active transport use (de Jong, 2012; Chris Rissel & Wen, 2011; Robinson, 2005, 2007). In addition, there are concerns that helmets may simultaneously promote the perception that cycling is an inherently dangerous activity, thus deterring potential new cyclists. Furthermore, wearing a helmet may imply that the wearer is safe simply by wearing a helmet, thus encouraging risky behaviour from both the wearer and other road users and reducing the need for policy makers to act to improve the built environment through the provision of cycling infrastructure (Aldred & Woodcock, 2015; Jacobsen & Rutter, 2012). Cyclists failing to conform to MHL are routinely targeted by the media as proof negative stereotypes of cyclists being reckless lawbreakers are true (Knowles & Taylor, 2017).

The evidence for and against MHL is conflicting and difficult to interpret due to inadequate pre- and post-implementation studies (Davies, 2013). One of the few studies to examine people's attitudes towards wearing helmets while cycling found that in Sydney, at least, 22.6% of respondents reflected that they would ride more if they did not have to wear a helmet. Of those who were classified as "infrequent cyclists", 19% said they would ride more. Comprising two-thirds of the adult population, increasing participation rates in this group would make a significant difference in mode share for the city (Chris Rissel & Wen, 2011, p. 181). The helmet laws are also attributed blame for the difficulty of bike share schemes in Australia achieving the same levels of success experienced in many other cities globally, although realistically, this is also a result of other issues, including infrastructure and the number of other cyclists on the roads (Fishman, 2016; Transport Housing and Local Government Committee, 2013).

A 2017 survey conducted by Bicycle Network, a cycling advocacy organisation based in Melbourne, found that of the 20,000 respondents, two thirds believed the law should change, either removing the requirement for a helmet altogether (17.6%) or maintaining mandatory helmet use in certain circumstances (40.7%) (Bicycle Network, 2017).

4.3 The Netherlands

The Netherlands is famous for its bicycles, with cities across the country featuring widespread, quality cycling infrastructure, which is well integrated with other transport modes (Pucher & Buehler, 2007, 2008). While bicycle riding has long played an important role in the country's transport mix, like other countries in the region (and indeed, around the world) after the Second World War, cities were planned to accommodate the increased rates of car ownership, with devastating impacts on both the urban form and cycling rates. Over the period of 1950-1975, cycle rates across several Dutch, German and Danish cities dropped from 50-85% of trips in 1950 to 14-35% of trips in 1975 (Pucher & Buehler, 2008, p. 502). This trend started to reverse in the 1970s as communities protested the incursions cars and their associated infrastructure were making into city centres (Goeverden & Godefrooij, 2011; Harms, Bertolini, & Brömmelstroet, 2015). A hard-fought community campaign began as a response to the high number of child cyclists and pedestrians killed in the late 1960s (over 400 in 1969), headed by organisations such as Stop de Kindermoord ("Stop the Child Murder"), and later the First Only Real Dutch Cyclists' Union. This, combined with the oil crisis of 1973 and a national focus on reducing energy needs, led to the Dutch rejecting freeways in city centres and moving government planning policies away from the private car to focus instead on creating streets for people, and the widespread integration of cycling and public transport (Pattinson, 2015; van der Zee, 2015).

In addition to wide-spread separated cycling infrastructure, the regulatory environment in the Netherlands prioritises the needs of pedestrians and cyclists over motorised transport (Fedtke, 2003; Pucher & Buehler, 2010; "Strict liability in the Netherlands," 2013). On average, the Dutch cycle 850km per person per year (Nielsen et al., 2013, p. 111) with 27% of total trips made by bicycle. More than half of cyclists are women (Pucher & Buehler, 2008). Despite the widespread use of bicycles for transport, car ownership in the Netherlands is still high (Pucher & Buehler, 2007).

The approach toward making helmets mandatory in Australia conflicts with that adopted by Dutch policymakers. The Netherlands has possibly the safest cycling rates of any country (1.1

fatalities per 100 million kilometres cycled) and yet only 3-5% of individuals who travel on bikes wear helmets. Furthermore, policy makers actively oppose implementing laws that would require the use of helmets, citing concerns that this restriction may make cycling appear more dangerous than it is while overstating their protective benefits, such as making cyclists more prone to risk-taking and other road users engaging in riskier behaviour towards the cyclist, such as passing more closely (Pucher & Buehler, 2007; Walker, 2007).

4.4 Case studies

The three cities discussed here exhibit different urban and geographic characteristics, as well as cycling demographics. The geographic focus of the case studies was the urban core of each city, as this is where most participants lived or travelled to for work.

4.4.1 Perth

Perth is a coastal city located in the south west of Australia (Map 4.1).

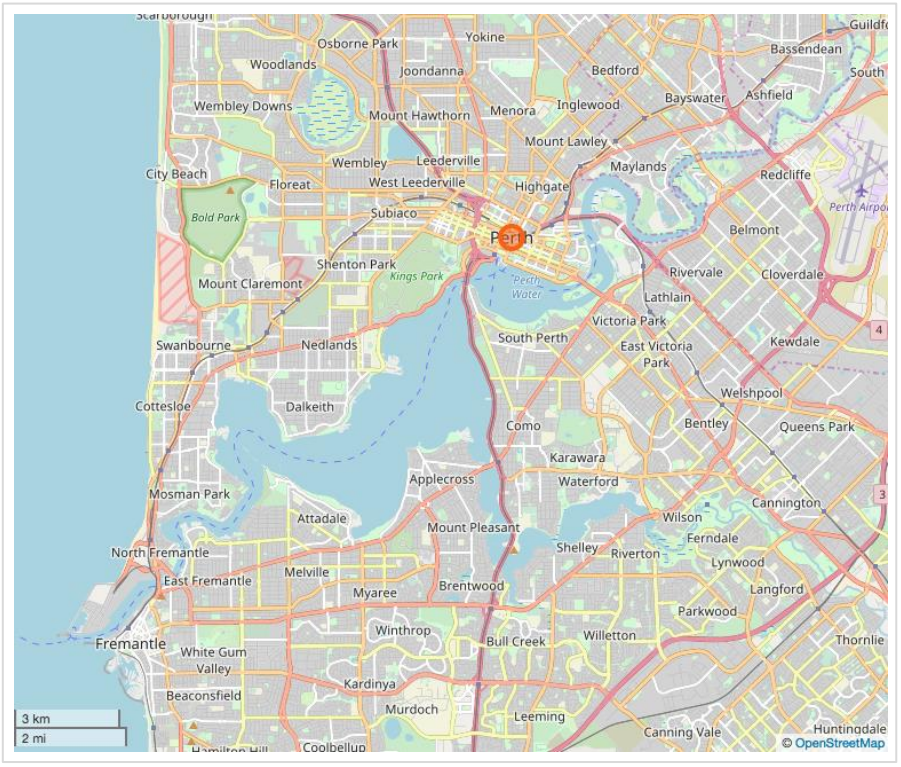
Map 4.1 Location of Perth, Western Australia

Sited on Whadjuk Noongar ancestral lands, Perth was founded in 1829 as an outpost of the British Empire (Department of Aboriginal Affairs, 2016). Selected characteristics of the city are provided in Table 4.1.

Table 4.1 Selected characteristics of Perth

Characteristic	Value
Population	1,907,833 (Australian Bureau of Statistics, 2017b)
% female	50.5 (Australian Bureau of Statistics, 2017b)
Median age	36 years (Australian Bureau of Statistics, 2017b)
Average household size	2.6 (Australian Bureau of Statistics, 2017b)
Households with at least one registered vehicle	92.3% (Australian Bureau of Statistics, 2017b)
Bicycles per household	1.58 (Department of Transport, 2014)
Median weekly personal income	$728 (Australian Bureau of Statistics, 2017b)
Median weekly household income	$1,642 (Australian Bureau of Statistics, 2017b)
Total land area (Greater Perth)	641,786ha (Australian Bureau of Statistics, 2017c)

The greater Perth metropolitan area stretches along the coastal plain bordering the Indian Ocean in the south west of the state, with the inner suburbs and CBD clustered along the river and coast (Map 4.2).



Map 4.2 Perth inner city area

The area experiences a Mediterranean climate with cool wet winters and hot dry summers when temperatures frequently surpass 30 degrees Celsius and occasionally rising to the mid 40s (Figure 4.1). Perth is sunny year round, even in the wettest months having on average 6

hours of sunshine per day (Bureau of Meterology, 2005). Perth experiences extreme UV levels throughout the summer months (Bureau of Meterology, 2008). The autumn, winter and spring months are generally ideal for cycling, with cooler temperatures and many sunny days.

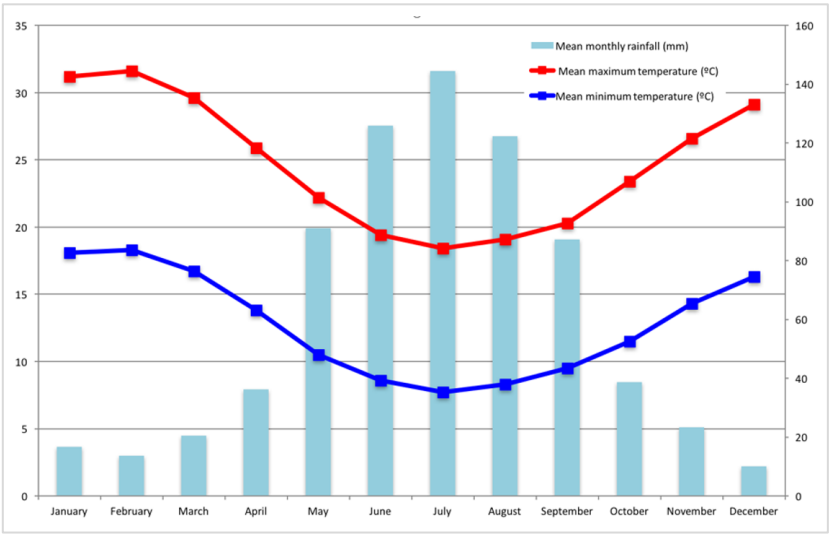


Figure 4.1 **Average monthly rainfall and temperatures, Perth, Western Australia** (Bureau of Meterology, 2017)

Perth is a very low density, sprawling city with higher density in the CBD and urban centres such as Fremantle (Figure 4.2).

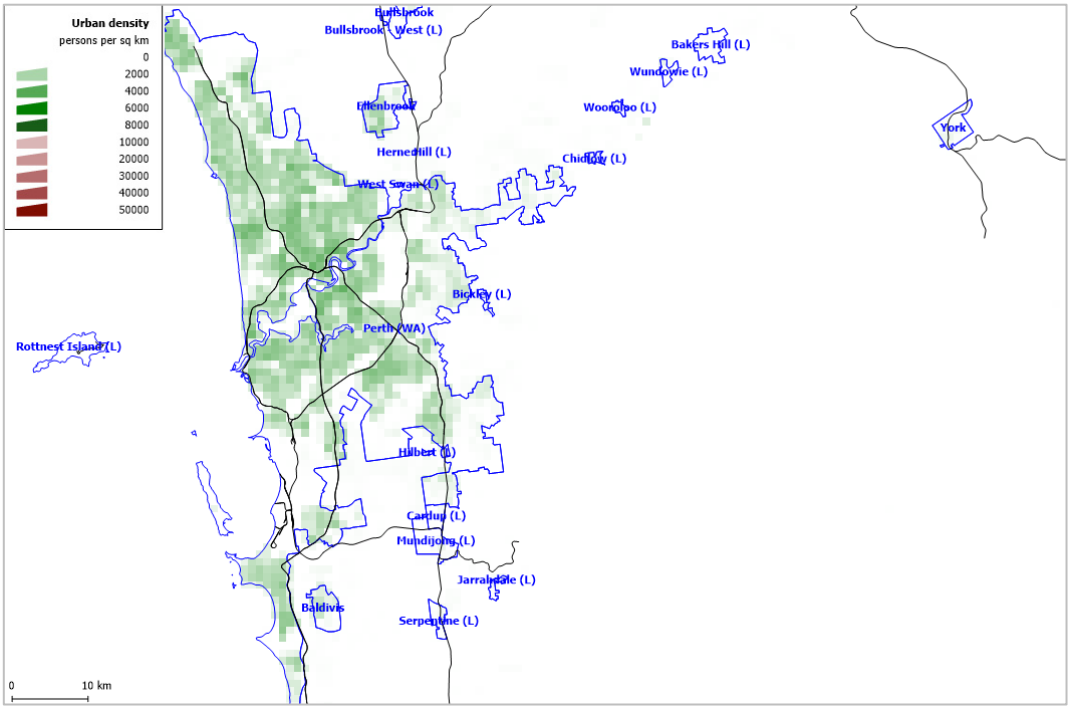


Figure 4.2 **Population density of Perth** (Loader, 2016)

The city has developed linearly parallel with the north-south axis of a main freeway which also includes a rail line and coast, now stretching 150km (Western Australian Planning Commission, 2015).

4.4.1.1 Cycling in Perth

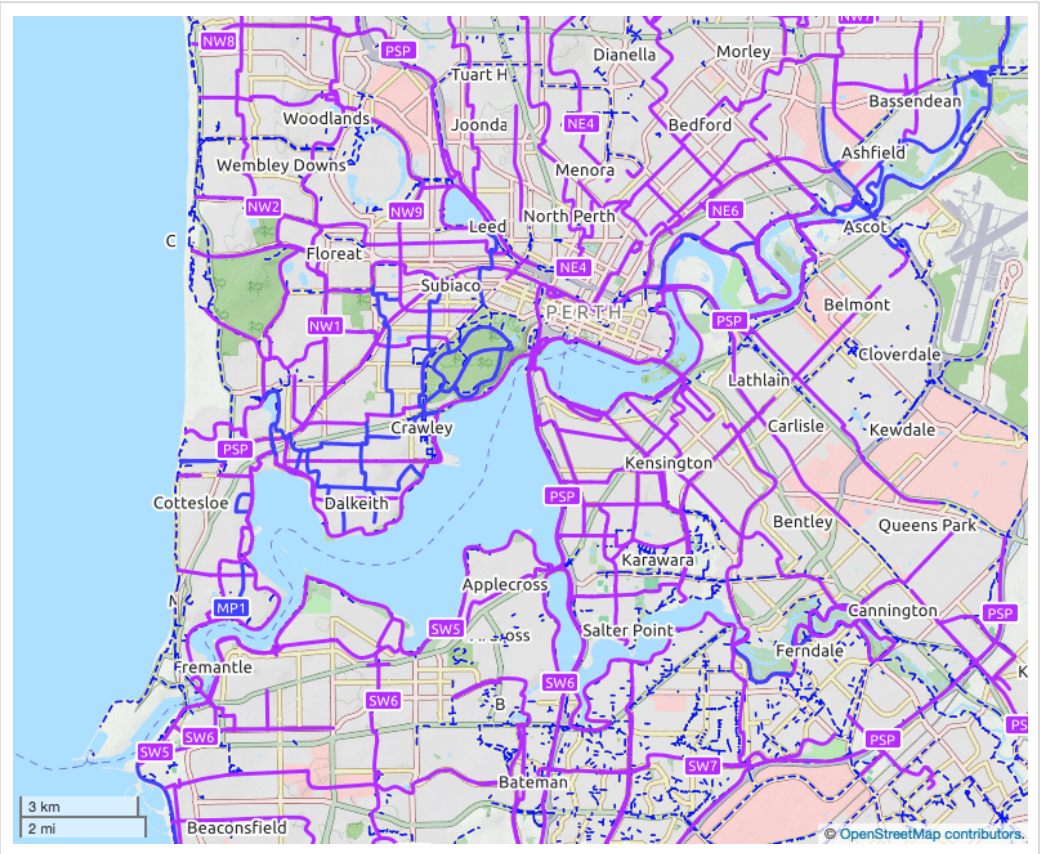
The mode share of cycling for journey to work in Perth is 1.1% across the greater metropolitan area (Australian Government, 2017a, p. 170). Inner Perth has much higher cycling rates which have increased from 2.6% in 2006 to 3.6% in 2016 (Australian Government, 2017a, p. 170).

There is one main cycling organisation based in Perth that is consulted by the state government on cycling planning matters, WestCycle, which describes itself as Western Australia's peak cycling organisation (WestCycle, n.d.). WestCycle operates as an umbrella organisation for several smaller groups with focuses on sport and recreation. As such, they are not strong advocates for general transport cycling. Bicycling WA is similar in that it serves a community of member cyclists and provides both insurance and access to group events but has interests spread across sport and recreation, with limited advocacy for everyday transport cyclists (Bicycling WA, 2018). Various community-based groups advocate for pedestrian and cyclist friendly streets in local neighbourhood areas, usually conversing with the local government.

4.4.1.2 Cycling policy and infrastructure

Cycling policy in Perth is most recently guided by the *Western Australian Bicycle Network Plan 2014-2031* (Department of Transport, 2014) and, more specifically, the *Cycling Network Plan – Transport @3.5 million* (Government of Western Australia, 2016). These plans, and other subsequent policy documents included herein, show little evidence of community input and consultation beyond the abovementioned cycling organisations. Data from the mobile application Strava was used to develop understandings of current network use, which due to the recreational nature of the data has limited value for making transport planning decisions, though this is acknowledged in the document.

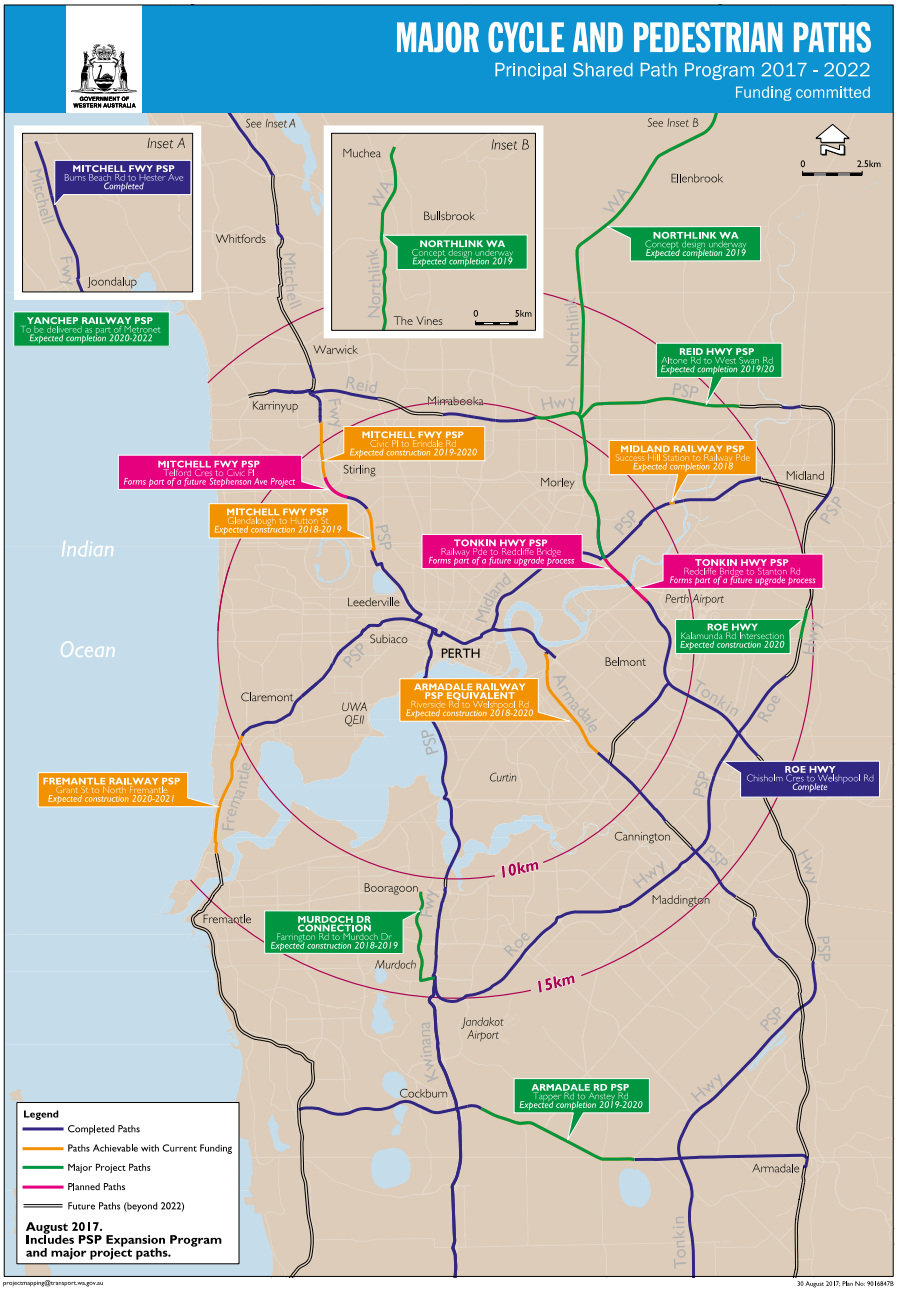
Infrastructure for cycling can be described as mixed, with higher quality separated facilities along recreational routes alongside beaches and rivers, as well as along the freeways and railways lines (Map 4.3). Perth's cycling infrastructure fits within a route hierarchy outlined in the Cycling Network Plan (Government of Western Australia, 2016).



Map 4.3 Main Perth cycle ways

Principal Shared Paths (PSP) form the "backbone" of the network, designed to accommodate longer commuting trips and fast riders. The PSP network is expansive with 357km of paths identified in planning documents though only around half (172km) were completed as of 2015 (Office of the Auditor General Western Australia, 2015). A significant proportion of state government resources and funding for cycling is targeted at connecting and continuing the PSP network (Map 4.4).

Feeding into the PSP network are Strategic Routes, which are designed to link major urban landmarks such as activity centres and train stations. They comprise of a combination of off-road paths and Bike Boulevards, which are streets that are designed to prioritise bike and pedestrian traffic; trials of these street designs began in late 2016 as part of the Department of Transport's Safe Active Streets Program (Department of Transport, 2017b).



Map 4.4 **Major Cycle and Pedestrian Paths including PSP Expansion Program** (Department of Transport, 2017a)

Local Routes are generally neighbourhood streets with on-road markers, painted cycle lanes or signage identifying safer and easier routes for cyclists which tend to link up local areas with Strategic Routes and PSPs. These are also complemented by Recreational Shared Paths, which are designed mainly for recreational purposes and are shared spaces with pedestrians. As such, they are not intended for higher-speed, long distance commuting (Government of Western Australia, 2016)

The State Government's transport portfolio agencies relevant to transport cycling policy are the Department of Transport, Main Roads WA, Public Transport Authority (PTA) and the Road Safety Commission (RSC) (Office of the Auditor General Western Australia, 2015). Each has a different approach to policy creation for cycling, and the agencies both collaborate and compete over funding and influence. The Department of Transport is responsible for regional level policy and planning for cycling as well as the administration of grants available for local government authorities to implement cycling initiatives at a neighbourhood level and a transport behaviour change program (Department of Transport, 2018). Main Roads WA has a focus on regional level transport routes, however is often involved with cycling infrastructure such as PSPs alongside freeways and other multi-lane roads. The PTA has a smaller role than the other agencies as its focus is on provision of public transport, however the agency maintains parking facilities at stations and is actively involved in planning PSP routes to and between transport nodes (Public Transport Authority, 2017). Created from the proceeds of red light and speeding infringements, the Road Trauma Trust Account provides funding to the RSC to fund infrastructure and road safety initiatives as well as communications campaigns relevant to cycling (Road Safety Commission, 2017a).

A key piece of state legislation in Perth relating to cycling is the *Road Traffic Act 1974*, as interpreted by the *Road Traffic Code 2000* (Government of Western Australia, 2018). Under the *Code*, bicycles are treated as vehicles, and as such cyclists have many of the same rights as car drivers. For example, a person riding a bike is permitted to take up a lane of traffic, provided they are travelling at what is considered a "usual" speed for a cyclist so as not to be considered an obstruction to traffic. Since 2015, cyclists of all ages are permitted to ride on footpaths. As of 2017 the state government is trialling legislation requiring drivers to maintain a minimum amount of space (1m at speeds below 60kph and 1.5m above) between their vehicle and a cyclist when overtaking (Road Safety Commission, 2017b).

Local governments vary across Perth in their willingness to engage with cycling issues. Several local government authorities in areas traversed by the participants in this study have bike plans; these include City of Cockburn, City of Fremantle, City of Vincent, City of Perth, City of Stirling, and Town of Bayswater. The likelihood of budget being allocated to cycling is greatly increased with the presence of a cycling plan.

4.4.2 Melbourne

Melbourne is the state capital of Victoria and is located on the ancestral lands of the Woi Wurung peoples; as with Perth, the city of Melbourne was founded by British colonists, in 1835 (Canning & Thiele, 2010) (Map 4.4).

Map 4.5 Location of Melbourne, Victoria

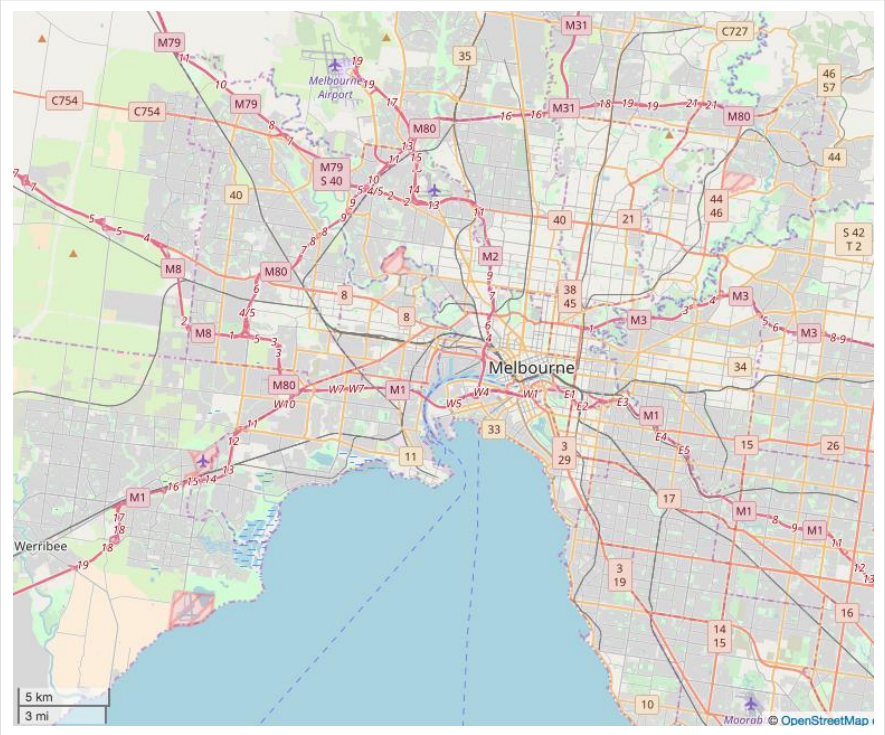
Melbourne is renowned for its vibrant arts scene, food, Australian Rules Football, and being frequently rated as the world's most liveable city (Chalkley-Rhoden, 2017). Selected characteristics of the city are provided in Table 4.2.

Table 4.2 Selected characteristics of Melbourne

Characteristic	Value
Population	4,196,198 (Australian Bureau of Statistics, 2017a)
% female	51% (Australian Bureau of Statistics, 2017a)
Average household size	2.7 (Australian Bureau of Statistics, 2017a)
Households with at least one registered motor vehicle	87.7% (Australian Bureau of Statistics, 2017a)

Characteristic	Value
Proportion of households with at least one working bicycle	61% (Australian Bicycle Council, 2017b)
Median weekly personal income	$674 (Australian Bureau of Statistics, 2017a)
Median weekly household income	$1,546 (Australian Bureau of Statistics, 2017a)
Median age	36 (Australian Bureau of Statistics, 2017a)

The mostly low-lying settlement of Melbourne (Map 4.6) sprawls around Port Philip Bay, encompassing several creek lines and rivers that flow towards the city centre and bound by mountains to the north east. The Yarra River is the largest river through the city. With many crossings, the Yarra and other waterways do not serve as too great a barrier for cyclists wanting to access the CBD from any direction (Pucher, Garrard, et al., 2011).



Map 4.6 Inner Melbourne

The temperate oceanic climate is relatively mild year around with occasional heatwaves through summer where the temperatures can surpass 40 degrees Celsius. Like Perth, UV radiation is high year around, and extreme in the summer months. Melbourne receives most rain in the winter months (Figure 4.3).

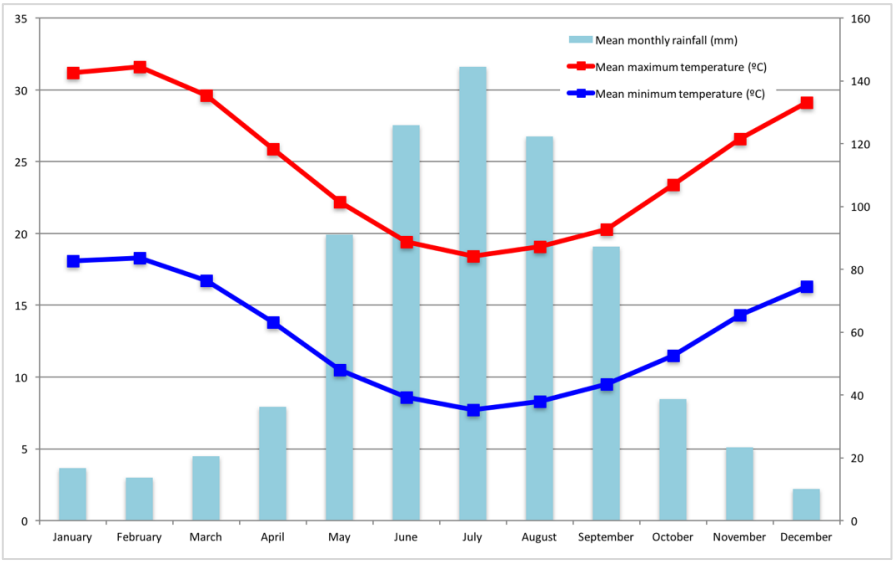


Figure 4.3 Average monthly rainfall and temperatures, Melbourne, Victoria

Source: Data from (Bureau of Meterology, 2017)
Figure created by author.

Melbourne has a dense urban core with concentrations of development leading away from it along major shopping streets, train and tram lines (Figure 4.4).

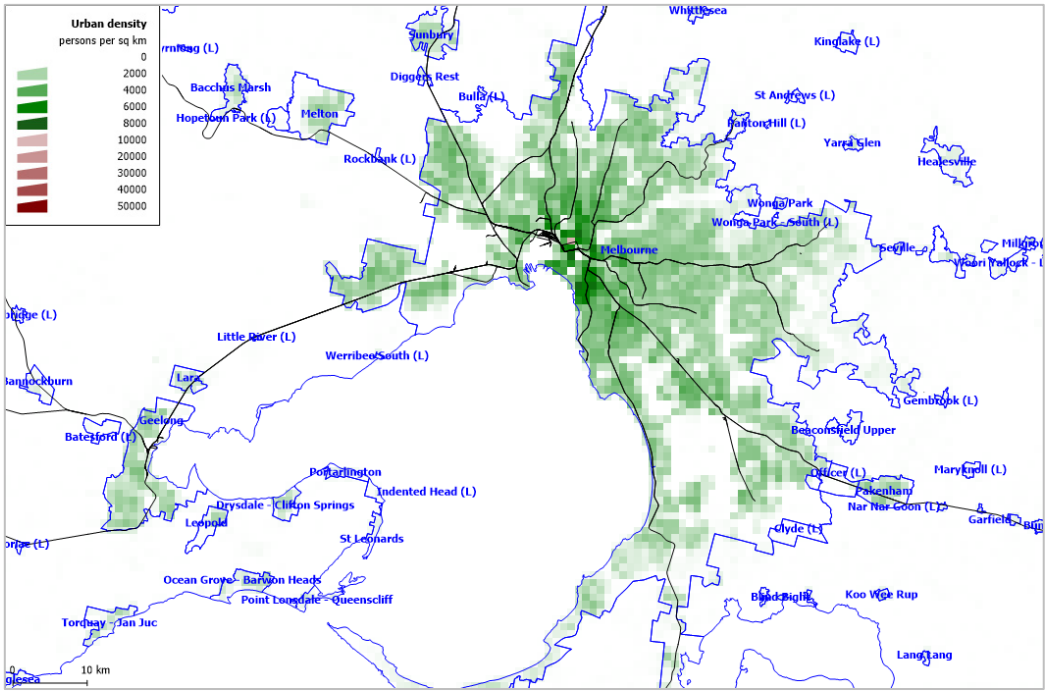


Figure 4.4 Population density Melbourne

(Loader, 2016)

4.4.2.1 Cycling in Melbourne

While the cycling mode share for journey to work in Greater Melbourne is very low at 1.6%, it is much higher in inner Melbourne where it has increased from 4.5% in 2006 to 6.2% in

2016 (Australian Government, 2017a, p. 169). The inner north can experience rates up to 16.5% at certain times of day such as the morning commute, with this area also having much higher rates of female participation in cycling at 37% of commuter cyclists (Pucher, Garrard, et al., 2011; Transport for Victoria, 2018b). Over the past decade, the inner north has continued to increase its proportion of Melbourne's transport cyclists by 40-60% between 2006 and 2011 (VicRoads, 2014).

The Melbourne Bike Share is a low-cost public bike share program with 600 bikes and 50 docking stations spaced around the CBD. A project of the Victorian Government, it is operated by the Royal Automobile Club of Victoria (RACV) and supported by the City of Melbourne and Bicycle Network Victoria. Helmets are provided for use with the bikes, or can be purchased cheaply from various retailers in the CBD (Royal Automobile Club of Victoria, 2018). The first private, dock-less bike sharing company opened in Melbourne in 2017 (OBike, n.d.).

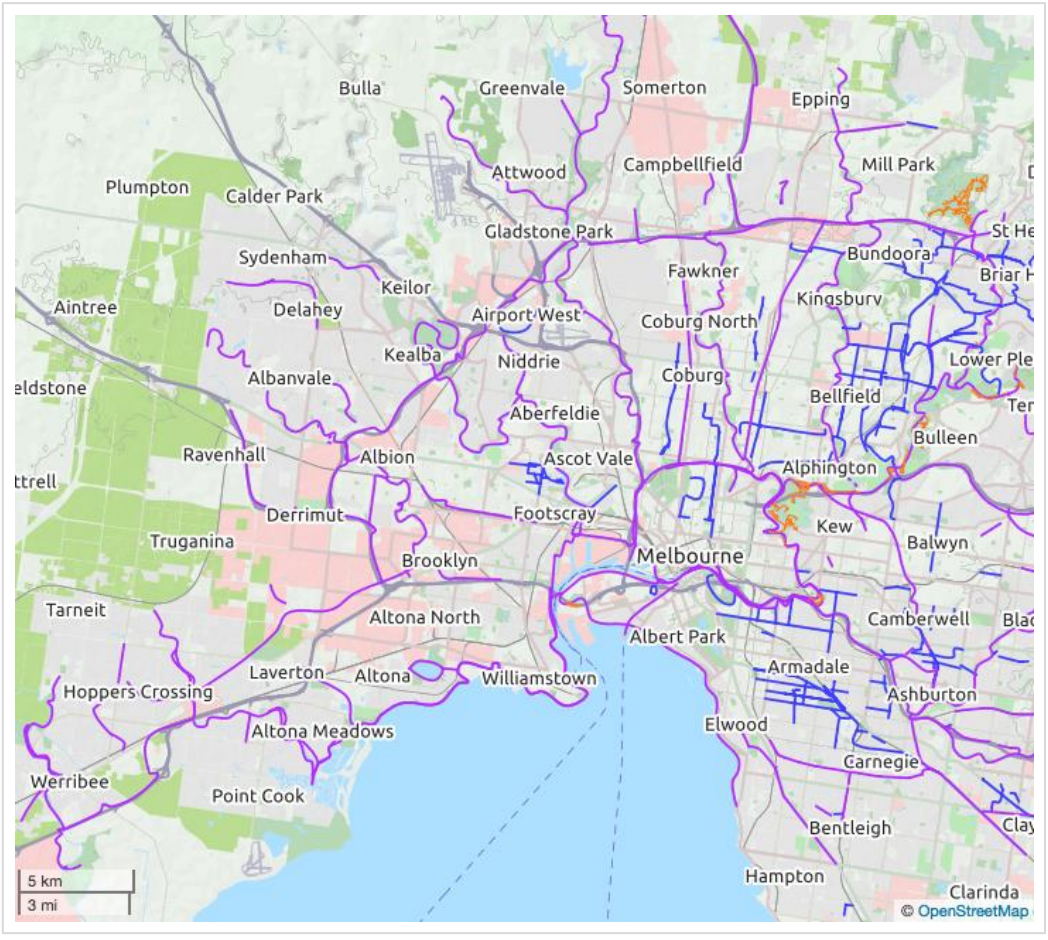
Cycling advocacy organisations in Melbourne include Bicycle Network (Bicycle Network, 2018) and the Amy Gillett Foundation (Amy Gillett Foundation, 2018b). Both have a stronger focus on recreational and sport cycling. The Amy Gillett Foundation has been advocating nationally in Australia for the introduction of mandatory minimum distance passing laws under the slogan "A metre matters" (Amy Gillett Foundation, 2018a). At the time fieldwork was conducted for this thesis in Melbourne, not-for-profit organisation The Squeaky Wheel was operational and contributing to the normalisation of cycling in the city through providing workshops for women and migrant communities, film festivals and inclusive bike tours of the city and valet bike parking at events (The Squeaky Wheel, 2017).

4.4.2.2 Cycling policy and infrastructure

The main government agency responsible for creating and managing policy and planning relating to transport cycling in Melbourne is Transport for Victoria (Transport for Victoria, 2018a). Cycling policy in Melbourne is currently guided by the *Victorian Cycling Strategy 2018-28* (Transport for Victoria, 2018b). As described within the document, the strategy comes as the result of several rounds of stakeholder consultation including online survey responses from the community as well as input from not-for-profit organisations. Despite this, it is strategic in scope, with little detail about how the vision it sets out will be manifested. Nevertheless, the core objectives of the strategy are in line with both community concerns and the general findings of the literature on cycling. Primarily, the Strategy aims to increase transport cycling, which is defined as commuter journeys to work as well as every day trips to shops, schools and

other local facilities. The document acknowledges that many cyclists find cycling with traffic stressful and that this is a primary reason for lower participation rates amongst women, children and seniors. In response, the Strategy aims to make cycling more inclusive by focusing on the provision of protected cycling corridors between areas of local amenity.

Despite the admirable visions laid out for cycling and the explicit, early mentions of cycling for transport purposes, with a few exceptions, the images used in the Strategy suggest that cycling is "sporty" or recreation. In part, this is due to a focus on helmet wearing but also the style of clothing or scenes empty of other cyclists. Additionally, while women are fairly well represented, the document includes only one person of colour, and one older person whose face is obscured by graphics. Such limited imagery, as discussed in Chapter 2, is problematic for achieving diversity amongst the cycling population. In several places the document also appears to qualify its support for safer infrastructure by stating that cyclists, too, must "play their part" (Transport for Victoria, 2018b, p. 17) in making sure they use the roads responsibly, blaming some people's discouragement at cycling on "the poor behaviour of other cyclists" (2018, p. 30).



Map 4.7 Main Melbourne cycleways

In Victoria bicycles are treated similarly to other vehicles on the road (Government of Victoria, 2010). Unlike Western Australia, adults are prohibited from cycling on footpaths unless accompanying children or with special exemption. Victoria is yet to introduce a mandatory minimum passing distance for motorists sharing road space with cyclists (Anderson, 2017).

4.4.3 Utrecht

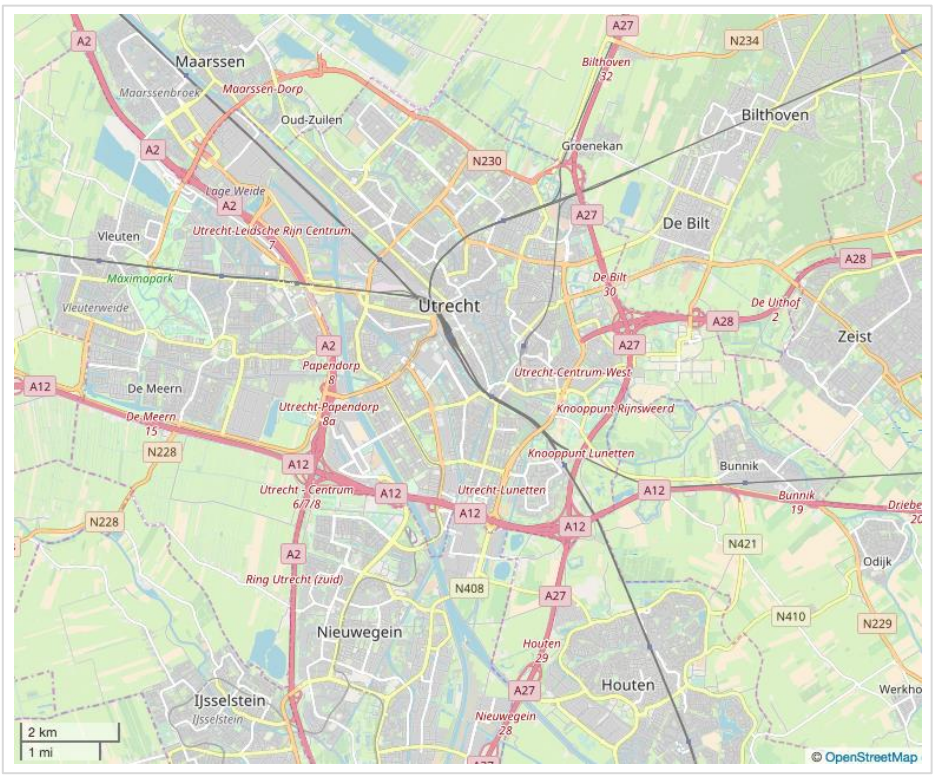
Utrecht is the fourth largest city in The Netherlands, located in the centre of the country in the province of Utrecht (Map 4.7). It is sited at the confluence of several historical transport routes and remains a major transit hub for the Netherlands and Europe with 200,000 travellers leaving and arriving at Utrecht Centraal each day. The city is a university town with a large student population that fluctuates in line with the academic calendar, and is one of the fastest growing cities in Europe (Gemeente Utrecht, 2016). Selected characteristics of Utrecht are provided in Table 4.3.

Map 4.8 Utrecht, Netherlands

Table 4.3 Selected characteristics of Utrecht

Characteristic	Value
Population	347,000 (Gemeente Utrecht, 2016)
% female	51.2 (UrbiStat, 2017)
Average age	34.9 years (UrbiStat, 2017)
Total land area	9967ha (Buizer, 2015)
Households with at least one motor vehicle	69% (Gemeente Utrecht, 2016)
Households with at least one working bicycle	96% (Gemeente Utrecht, 2017)
Households with three or more working bicycles	50% (Gemeente Utrecht, 2017)

Utrecht (Map 4.9) is crossed by several major waterways in the low-lying central Netherlands and has a very flat topography. The main geographical features are canals that wind through the city. As a medieval city, Utrecht still features very old buildings and narrow, winding streets particularly in the pedestrianised central area (Hull & O'Holleran, 2014).



Map 4.9 City of Utrecht

Utrecht has a temperate oceanic climate. The most challenging elements of its weather for bike riders are extremely strong winds and frequent rain (Figure 4.5).

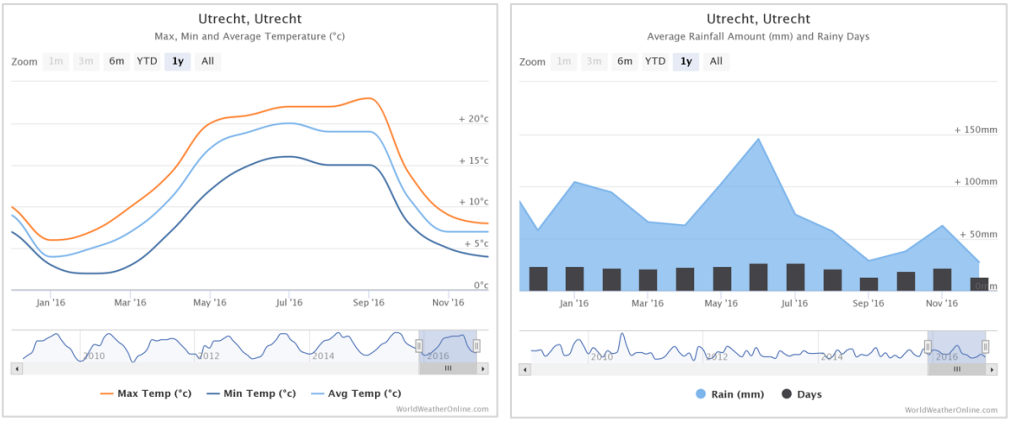


Figure 4.5 **Average monthly rainfall and temperatures, Utrecht**

Source: Figures and data from (World Weather Online, n.d.)

Utrecht is a densely populated compact city (Figure 4.6). The municipal government is currently undoing the damage incurred by a failed 1970s road project and the placement of the car-serviced Hoog Catharijne shopping mall in the centre of the city. In December 2015, water began flowing in Catharijnesingel, a canal that had been filled in for the road, restoring the integrity of a canal system and reconnecting the historical city centre with the Utrecht Station Area, the central transport hub of both Utrecht, and the Netherlands as a whole (CU2030, 2016).

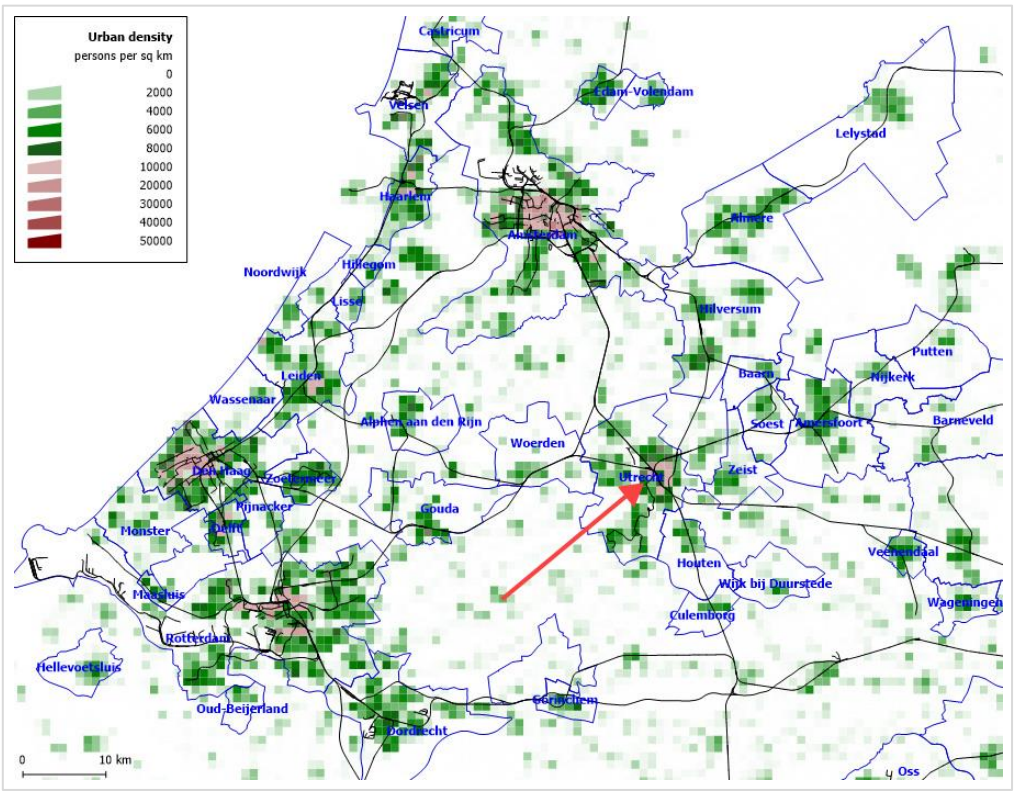


Figure 4.6 **Population density of Utrecht and surrounding region**

(Loader, 2016)

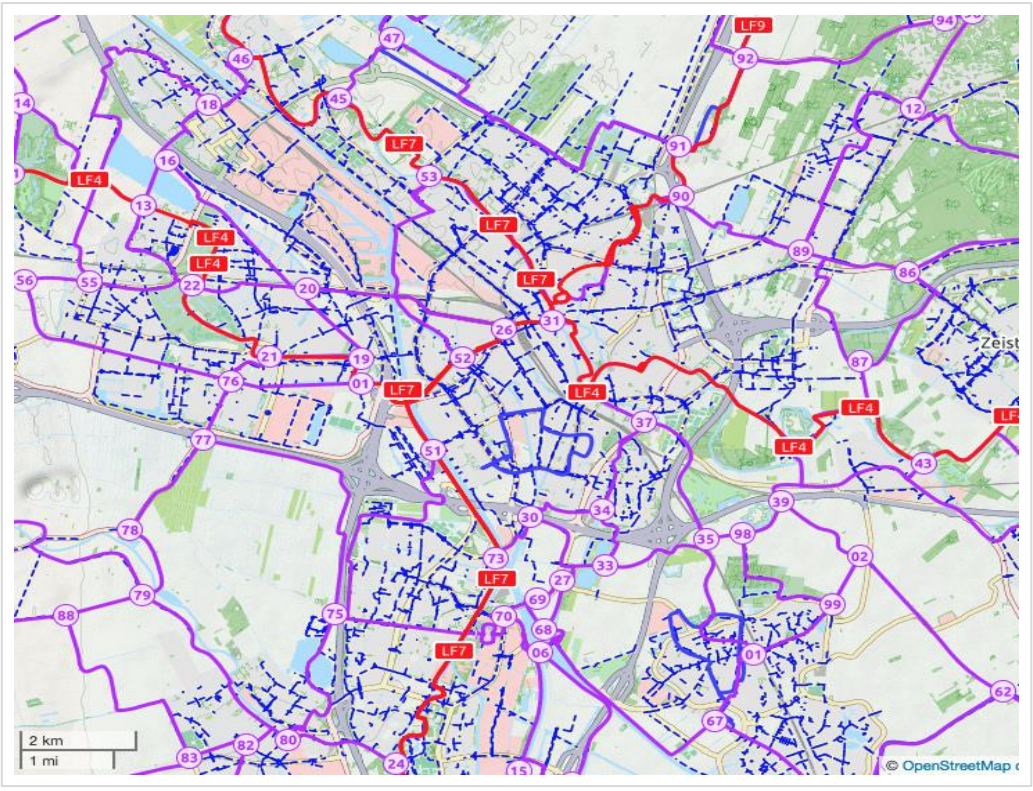
4.4.3.1 Cycling in Utrecht

Like many other Dutch cities, planners in Utrecht were influenced by the movement in recent decades towards the widespread integration of cycling and public transport. In 2017 Copenhagenize Design Co., an urban design consultancy globally renowned for its advocacy of Copenhagen-style cycle planning, listed Utrecht as the second most bicycle friendly city (between Copenhagen and Amsterdam) on its biennial Copenhagenize Cycling Index (Copenhagenize Design Company, 2017).

The municipal government in Utrecht states that “Cycling in Utrecht should be fun and great” (Gemeente Utrecht, n.d.-b), and the 125,000 people cycling daily support this premise (Gemeente Utrecht, n.d.-a). This figure represents a 40.9% modal share for trips less than 7.5km, and 18.8% of trips 7.5-15km (Centraal Bureau voor de Statistiek, 2015). Utrecht has a strong cyclists’ union which is actively engaged in promoting the needs of cyclists to the municipality (Fietsersbond Utrecht, 2018).

4.4.3.2 Cycling policy and infrastructure

Utrecht has 245km of high quality, separated bicycle paths, infrastructure that services most of the city (Map 4.10). Neighbourhood streets without separated infrastructure have a speed limit of 30kph (Gemeente Utrecht, 2016).



Map 4.10 Main Utrecht cycle ways

The study was limited by the availability of English-language policy documents for cycling in Utrecht, however cycling policy in the city is guided by the *Utrecht – We all cycle! Action Plan 2015-2020* (Gemeente Utrecht, 2015b). The *Action Plan* was formed through extensive community consultation, including a city hall forum (City Discussion) to identify residents' key areas of concern for future city planning (Gemeente Utrecht, n.d.-b). The main vision in the *Action Plan* is for Utrecht to be a world class bicycle-city, strongly making the point that cycling and walking are to be seen as primary modes of transport in the city. Specific attention is paid to improving the quality and visual coherence of cycle path routes to create a recognisable network. Of note is the plan's acknowledgement of cyclist annoyances, such as long waiting times at lights or frustrating diversions due to road works, and recognition that annoyance leads to unsafe behaviour. As a result, much of the plan is aimed at identifying and minimising "annoying" features of the cycle network, tacitly endorsing the importance of recognising the embodied experience of cycling. The municipality's commitment to including cycling in all aspects of city planning means cycling is also represented in other documents such as those relating to public health (Gemeente Utrecht, 2015a).

The high rate of cycling in Utrecht comes with its own set of challenges and as such parking is also identified as being of major importance in the *Action Plan*, and a key factor in increasing participation rates as well as satisfaction with the cycling experience in the city. In many ways, the challenges Utrecht faces mirror those of car-dependent cities, as policy makers grapple with thousands of cyclists on the bike paths, and many thousands of bikes at train stations. The problem is compounded by the common habit of passengers storing bikes at several train stations around the country, so that they will always have local transport wherever their destination. The central station, Utrecht Centraal, can now accommodate parking for 12,000 bicycles, and will expand this to 33,000 by 2020. A secure, multi-level indoor bike parking facility directly under the station will also accommodate 12,500 bicycles (Gemeente Utrecht, 2015b, 2017). The popularity of cycling for transport in Utrecht is also leading to problems with congestion in the old city centre. While parts are now excluded from both cars and bicycles, there are still serious issues with congestion at peak times of day in places such as the central train station (van Duppen & Spierings, 2013).

4.5 Summary of case studies

This chapter provided an overview of cycling in three very different urban contexts, Perth, Melbourne and Utrecht. The disparity in cycling rates indicates significant challenges for policymakers in Australia to meet the same levels of cycling participation seen in Utrecht. There are several reasons for this. Firstly, there is a huge difference in size and density between Utrecht and the Australian cities. Though the focus for Perth and Melbourne is on the inner city, rather than the much larger greater metropolitan area, the density is much lower and as a result distances for cyclists are greater and arguably less pleasant. Another difference between Perth and Melbourne and Utrecht is the structure of government. In Utrecht one municipality is responsible for planning and maintaining cycling infrastructure (Brugman, 2012). In Perth and Melbourne, this is spread over many local government administrations, which also need to align with state government planning processes. The provision of an extensive network of separated infrastructure in Utrecht is also clearly more enticing for cycling than the opposite in much of Perth and Melbourne. The policy that informs the differences in infrastructure is most striking though. Policy in Perth and Melbourne revealed some conflation of recreational and sport cycling with transport, as well as a less enthusiastic and optimistic vision for cycling than is seen in Utrecht's *Action Plan*. Language and imagery in the Australian policy documents and road safety campaigns suggest that cyclists and drivers are "equal" on the road, in part because cycling is not seen as the most important transport mode and celebrated in the same way as in Utrecht.

4.6 Description of participants

Participants were recruited across the three case study cities, with 37 people volunteering to be involved in the research. The use of snowball sampling for this study resulted in some standout characteristics of the respective case study locations. As illustrated in Table 4.4 below, Melbourne had far more female participants than male. This is most likely due to a well-known, local, feminist writer and bike enthusiast sharing my request for participants on her social media pages as well as publishing a blog post I wrote about being a cycling researcher on her website[1]. A local cycling organisation, The Squeaky Wheel, which had a focus on encouraging women to cycle, also shared my request for participants on its social media pages, further boosting my exposure to a cycling-friendly female audience. Similarly, in Utrecht while my

[1] Catherine Deveny is a writer living in Melbourne. The offending post can be found here: http://www.catherinedeveny.com/on-being-a-lazy-cycling-researcher-georgia-scott/

request for participants was shared by a Dutch friend to her Dutch colleagues and associates, it also appeared on a Facebook page for expats living in the Netherlands, and as a result, several participants in the Utrecht case study were originally from other countries. In Perth, Fremantle has a reputation for being "green" and generally more bike friendly. Unsurprisingly, putting out a request on social media for participants for a cycling study resulted in the recruitment of several people currently residing in or near Fremantle.

As detailed below, several participants in each case study location were not originally from that particular city. Whether from another town or another country, the past experiences of participants necessarily influence their present experience of cycling. The expats' experiences in the Netherlands undoubtedly influenced how they perceived and experienced cycling in their adopted home of Utrecht, however so too would have the experience of Dutch-born participants who had grown up elsewhere in the Netherlands.

Most of the research subjects were either currently engaged in tertiary studies or working in a professional occupation. As shown in Table 4.4, the average age of participants across all sites was 37.6 years. There were 22 women and 15 men involved in the research. Table 4.1, Table 4.2 and Table 4.3 provide demographic data on the participant group.

Table 4.4 Research group

City	Number of Participants	Average Age (years)	Women	Men
Perth	10	36.2	5	5
Melbourne	18	38.8	12	5
Utrecht	9	36.8	4	5
Total	**37**	**-**	**22**	**15**

4.6.1 Perth

The Perth interviews were conducted during the months from November 2015 to February 2016 with a total of 10 people, ranging in age from 25 to 48 years (average age 36 years), with an equal proportion of men and women. In Perth, the majority had grown up in the city and lived in central suburbs. One participant grew up in Malaysia, and one in the UK; both had moved to Perth in the previous 10 years. All participants used cycling as a mode of

transport at least weekly, with most cycling at least four days a week. Four participants additionally engaged in cycling as a recreational sporting activity.

Table 4.5 Perth: Research participants

Participant descriptor	Sex	Age	Occupation	Originally from	Started cycling	Days per week cycling
Alicia	F	34	Lecturer	Perth	Early 20s	1
Amanda	F	42	Disability Services	United Kingdom	Childhood	7
Charlie	M	33	Firefighter	Perth	Childhood	7
Cory	M	36	Handyman	New South Wales	Early 20s	4
Damian	M	37	Artist	Perth	Childhood	7
Judy	F	35	Accounts Manager	Perth	Early 20s	2
Lizzie	F	39	Cultural Development Practitioner	Perth	Early 20s	7
Sean	M	48	Draftsperson	Perth	Childhood	7
Sylvie	F	33	Counterhand	Perth	Early 20s	5
Van	M	25	PhD Student	Malaysia	Early 20s	7

4.6.2 Melbourne

In Melbourne, eighteen people aged between 26 and 77 years old (average age 38 years) including 13 women and 5 men, were interviewed between March and May 2015.

In Melbourne, the participants generally lived and worked in the inner-city suburbs, and were professionals or tertiary students. Most cycled daily to work or university, and reflected that they were enthusiastic about cycling as a mode of transport. Several also cycled for recreation. Five were originally from Melbourne, six from rural Victoria, three from other states and four from other countries.

Table 4.6 Melbourne: Research participants

Participant descriptor	Sex	Age	Occupation	Originally from	Started cycling	Days per week cycling
Audrey	F	49	Academic researcher	Sydney	Childhood	7
Ben	M	31	Planner	Rural Victoria	Childhood	7
Bob	M	77	Retired Teacher	Melbourne	Mid-50s	7
Christine	F	28	Web consultant	Outer Melbourne	Early 20s	7
Elise	F	37	PhD Student	West. Australia	Late 30s	7
Glen	M	57	Town Planner	Melbourne	Late 20s	5
Hazel	F	26	Master Student	Wodonga	Late teens	2-3
Josh	M	31	Graphic Designer	Outer Melbourne	Childhood	7
Kelly	F	34	Sustainability Officer	Gippsland	Early 20s	5
Kim	F	43	Teacher	Sydney	Early 40s	7
Lena	F	41	Lecturer	Germany	Childhood	7
Michael	M	37	Transport Planner	United Kingdom	Late 20s	5
Penny	F	29	Library Support Officer	Rural Victoria	Early 20s	4
Pippa	F	37	Bike Mechanic / Nurse	Geelong	Early 20s	7
Sammy	F	37	Youth Worker	Outer Melbourne	Early 20s	7
Sarah	F	36	Architect	Geelong	Early 20s	5
Stephanie	F	27	Master Student	Malaysia	Early 20s	5
Urvashi	F	41	Lecturer	Sri Lanka / Zimbabwe / Zambia	Childhood	7

4.6.3 Utrecht

In August 2015, nine people living or working in Utrecht were recruited as participants in this research with the youngest being 25 years of age and the oldest 47 years of age (average age was 36) comprising four women and five men. Of the nine Utrecht participants, five were Dutch nationals who had grown up either in Utrecht or elsewhere in the country. All cycled daily as part of their usual transport habits, with several interviewees having neither a car nor driver's license. A requirement for inclusion was that participants were willing and able to be interviewed in English.

Table 4.7 Utrecht: Research participants

Participant descriptor	Sex	Age	Occupation	Originally from	Started cycling	Days per week cycling
Daryl	M	38	Sports Optometrist	Australia	Childhood then 2 years as an adult	7
Flora	F	28	Student	Utrecht	Childhood	7
Haley	F	25	Education Outreach	United States	Teens	7
Lars	M	30	Social Worker	Netherlands	Childhood	7
Mila	F	35	Web Designer	Netherlands	Childhood	7
Philip	M	42	Internet Security	United Kingdom	9 years	7
Sasha	M	44	Physicist	Netherlands	Childhood	7
Shu-Chen	F	42	Social Worker	Taiwan	Teens	7
Thomas	M	47	Civil Engineer	Netherlands	Childhood	7

4.7 Summary of participants

The participant sample in each case study city represented a random selection of cyclists who volunteered for the research, rather than any particular targeted group such as from a cycling club. The participants in all case study locations primarily used their bikes for every-day transport rather than recreation or sport. While the amount of time participants had been cycling for transport varied, none were novice bike riders and all had a level of skill and competency that made it possible to ride on the road safely. The sample size in Perth (10) and Utrecht (9) was similar, though Melbourne (17) had a much larger sample size. It is possible the greater level of response to the research in Melbourne was a result of the transport cyclists in that city feeling a stronger sense of community and desire to support advocacy than their counterparts in Perth and Utrecht; this is discussed further in Chapter 5 and Chapter 7.

The similar demographics of the participant sample in each case study city allow for comparison. Each case study had a similar age range, with the average age in each being in the 30s. The participant sample for Perth and Utrecht had an even split of male and female cyclists, while Melbourne had more female participants than male. The occupations of the participants in all cities were similar also, with the majority professionals or postgraduate university students.

Chapter 5 Semi-Structured Interview Results

5.1 Introduction

Semi-structured interviews were undertaken with participants in Perth, Melbourne and Utrecht. This method of interview is included in the study in order to create an initial framework for understanding how people experience riding bikes in cities, with the expectation that such data may be used to inform transport policy. The interviews were undertaken in public spaces such as parks and cafés, were recorded and later transcribed for analysis. Participants were asked questions focused on bike riding experiences, grouped into several categories informed by the literature outlined in Chapter 2: Literature Review. The intention of the questions was to guide the discussion so that a full picture of the factors affecting the participants' cycling experience can be created and then interrogated through the process of Interpretative Phenomenological Analysis (see 3.4 Thematic analysis).

The first interview question category, Participant Background, has been discussed previously (see 4.4 Participants). The data presented here are derived, through thematic analysis, from answers to questions in the remaining categories: Cycling Motivations, Embodiment, Emotion, and Route Selection. Minimal interpretation is given to better allow the voices of the participants to be heard. Reflections on the results and their place in the context of the literature are provided in Chapter 7: Discussion.

5.2 Cycling for transport

Initially participants were asked when and why they had begun riding a bike. For most, the first experiences they had of cycling were in childhood. Participants who had cycled as a child in Australia often reported a gap in cycling activity during their teenage years to young adulthood, when, for a range of reasons, they rediscovered cycling. Further questions were asked at this point to prompt deeper reflection on what had inspired them to start riding a bike again as adults. In Utrecht, those participants who had grown up in the Netherlands all described learning to ride a bike at a very young age, and continuing without pause into adulthood. The circumstances of the remaining Utrecht participants, who are immigrants to the Netherlands, are more akin to that of their Australian counterparts.

Participants were also asked to summarise their overall experience of cycling in their city with one or a few words. In a minority of cases the question was bypassed when it failed to align with the flow of the particular interview.

5.2.1 Perth

For some in Perth cycling has always been part of their life. Charlie delayed acquiring a driver's licence and a car until his mid-20s, therefore a bike has always been an obvious solution for transport.

> *I enjoyed riding my bike as a kid, as a teenager. I never really was in any rush to get my licence, but I really enjoyed it. And when I was at uni[versity], I kept riding as well, because I had no licence.*
>
> Charlie, 33, Firefighter, Perth

The absence of free parking at workplaces and other frequent destinations is an important factor for several participants adopting and continuing cycling:

> *[W]hen I finished uni[versity], I moved to Freo [Fremantle], and you can't park anywhere, so you have to cycle…*
>
> Judy, 35, Accounts Manager, Perth

An additional dissatisfaction with public transport motivated Cory to begin commuting by bike:

> *There was no parking at work, and I got sick of catching the bus, so I started riding.*
>
> Cory, 36, Handyman, Perth

Both enjoyment and environmental concerns have inspired Lizzie to maintain her cycling practice:

> *I guess I quite like cycling. The other main reason would be coming from an environmental point of view, to reduce carbon emissions.*
>
> Lizzie, 39, Cultural Development Practitioner, Perth

For Amanda, riding a bike is an easier form of transport with her spinal condition than other transport modes:

I also have a condition with my spine, and it's called vestibular disorder, and it affects the balance system. Even when I was having physiotherapy for it, and I was finding it difficult to walk and travel in a car or travel on the bus, I could still cycle.

Amanda, 42, Disability Services, Perth

For Sylvie and Alicia, having a social circle and community supportive of cycling demonstrated it was possible to travel by bike, and helped to grow their confidence as bike riders. Sylvie's journey with a bike began with making friends with bike riders in London:

When I was 21, in London. I was staying with these architect students, in their house, and they would ride everywhere. They lived on the outskirts of the city, and so to go out to dinner with them, or to the movies, they'd have a spare bike and I'd join them as a gang, and we'd ride around.

Sylvie, 33, Counterhand, Perth

Riding bikes was a social norm amongst Alicia's sustainability-minded friends group, providing both the initial inspiration for cycling as well motivation to continue her practice:

Absolutely wouldn't have had the motivation if I didn't think that bikes were cool. I had friends riding bikes, and I knew they were a good idea for sustainability, and I wanted to kind of have that in my lifestyle.

Alicia, 34, Lecturer, Perth

For Sean, commuting by bike has become a familiar part of his daily life:

You get cranky if you don't, or you miss it, really. And because at work you're sitting behind a screen all day, you do feel, you feel good having ridden, because you've got some exercise under your belt, so that just feels positive really.

Sean, 48, Draftsperson, Perth

As Table 5.1 suggests, when Perth participants were asked to summarise their experience of cycling in one word, the most common descriptor was related to "Free". The remaining words also express a positive overall experience. Even the outlier, "headwinds", a comment on the often strong sea breezes that are a feature of Perth's climate, is seen by Cory as an opportunity to overcome a challenge.

Table 5.1 Perth: What's one word to describe cycling?

Participant	One word to describe cycling
Alicia	freedom
Amanda	awesome, free
Charlie	freedom
Cory	headwinds
Damian	transport, freedom
Judy	thinking time
Lizzie	fun, freeing
Sean	freedom
Sylvie	convenient
Van	easy

5.2.2 Melbourne

For most participants in Melbourne, cycling is the most convenient as well as the cheapest option for commuting, compared with driving and using public transport.

> *I don't know, just an enjoyable way to get around, not having to go on a train, and yeah that sort of thing, really. And just for me it's a really effortless way to do exercise, because I have to get from point A to point B, so I'll ride. At the moment it's quicker, it's the most effective and quickest form of transport for me to get from Elwood to Fitzroy. It takes about an hour on the tram, and if I'm on the train it's a half hour on the train and a 20-minute walk to the train. I drove yesterday at midday and it took me an hour on Punt Road. It takes me 30, 40 or 50 minutes, it depends how fast I ride, on my bike, and then I've exercised for the day. Don't have to find a park, don't get stressed because of the traffic, don't have to rely on public transport being on time. Don't have to be squished in like a sardine. There's multiple benefits. And it's cheap, doesn't cost me anything.*
>
> Hazel, 26, Master Student, Melbourne

While reducing environment impacts is also important for many of the participants, the reasons were usually combined with several other factors as a reason for choosing cycling:

> *The environment is really important to me, so that's one strong motivator. But also, health is important to me, and that incidental exercise you get from just riding between places is good. I also think it's good for my mental health to ride places, particularly because I have a stressful job.*
>
> Sammy, 37, Youth Worker, Melbourne

This is reinforced by other participants who reflect that a key motivational co-factor was the inclusion of incidental exercise as part of the daily commute:

> *I was like, well I want to do this because number one for my stance on the environment, and the fact that we have to somehow do things to minimise our impact. I find incidental exercise is very important for me. I find the idea of exercise as a word is incredibly tedious, so for me it's a bike ride for a purpose.*
>
> Urvashi, 41, Lecturer, Melbourne

> *In a busy life, cycling is a really good way to keep up a basic level of fitness because you're not taking up any extra time.*
>
> Glen, Planner, 57, Melbourne

Penny, however, admits to starting riding a bike because she thought it was cool:

> *I was terrified the first time I got on my bike, but I actually rode because I thought it was really cool (laughs); as a 20 year-old, I thought it was* so *cool.*
>
> Penny, 29, Library Support Officer, Melbourne

Compared with the Perth participants, the responses from Melbourne bike riders to the question "What's one word to describe cycling in Melbourne?" (Table 5.2) illustrate an overall ambivalence about the cycling experience. The descriptor "free" appears again, and most others are positive. Words such as "adrenaline" and "challenging", however, can be taken as positive or negative, depending on the individual's own association with the sensations that inform that word choice. Emma ("Variable, fun, scary, up-and-down"), Lena ("Generally good"), Glen ("neither strongly good nor strongly bad"), and Josh ("mixed") explicitly reflect the difficulty of labelling the disparate and contradictory nature of cycling experiences in Melbourne.

Table 5.2 Melbourne: What's one word to describe cycling?

Participant	One word to describe cycling
Audrey	congested
Ben	freeing
Bob	enriching, relaxing, fulfilling
Christine	adrenaline
Elise	-
Glen	neither strongly good nor strongly bad

Participant	One word to describe cycling
Hazel	free
Josh	mixed
Kelly	convenient
Kim	unexpected
Lena	generally good
Michael	Interesting, liberating
Penny	convenient
Pippa	variable, fun, scary, up-and-down
Sammy	youthful, freedom
Sarah	clever
Stephanie	challenging
Urvashi	-

5.2.3 Utrecht

For all participants in Utrecht, cycling is seen as the most convenient form of transport and is engaged in daily.

> *I guess I got here, and I thought, nah, I don't need a bike, I'm not going to worry about it, and within a week I thought, that's ridiculous, I'm going to get a bike. I've been riding since.*
>
> Daryl, 38, Sports Optometrist, Utrecht

Participants also note the benefits that cycling brings to mental and physical health compared with using more sedentary transport modes.

> *Yes, it does it in two ways. My mental state, and physically. If I bike to work, and I bike hard to work, that hour, I get a kind of a runner's high. I'm always very exhausted and enthusiastic when I come by bike. I'm less enthusiastic when I come by train. So there's the physical part, and the mental part is, yeah I came by bike, I did a good thing there.*
>
> Thomas, 47, Civil Engineer, Utrecht

Participants in Utrecht overwhelmingly provide positive descriptors of their cycling experiences, reflecting a perception of the practice as being one of comfort and normality. The outlier here is Mila's word "stress" which she used to describe her first experiences of cycling in Utrecht, which was more fast paced and chaotic than her home of Eindhoven. Once she became accustomed to riding in Utrecht her experience changed to a sense of freedom.

Table 5.3 Utrecht: What's one word to describe cycling?

Participant	One word to describe cycling
Daryl	healthy
Flora	practical, transport
Haley	lovely
Lars	effective
Mila	stress, freedom
Philip	easy
Sasha	freshness-in-the-morning
Shu-Chen	comfortable
Thomas	-

5.3 Themes

Through application of a process of Interpretative Phenomenological Analysis (IPA), themes were identified in the transcripts of the semi-structured interviews. While the questions asked were formulated to create a framework for the participants to explain their cycling practice, the process of thematic analysis was used to further draw out the most important factors affecting how the participants experienced cycling in Perth, Melbourne or Utrecht.

The themes resulting from this process, described in detail below, are:

- Identities
- Interaction
- Route
- Engagement
- Discovery
- Time
- Agency

Each theme is illustrated with selections from the interview transcripts with minimal interpretation, to retain the integrity of the participants' expression of their experiences while maintaining the conversational context in which the data were gathered.

5.3.1 Identities

The theme describes how the participants identify with their cycling practice. In several cases, participants describe multiple aspects of their cycling identity, or indeed multiple identities, while in others the very idea of having a cycling identity is foreign and nonsensical.

Participants are explicitly asked whether they identified with the term cyclist. While their yes/no answers are given in Table 5.4, Table 5.5 and Table 5.6 to provide an overview, as the remainder of this section illustrates, there is often much more explanation and qualification given to their answers, as well as further comment relating to the theme.

5.3.1.1 Perth

Half of the Perth participants answered yes to the question regarding whether they identified as cyclists, however for many, including some who answered yes, the category or characterisation of cyclist is an uncomfortable one (Table 5.4).

Table 5.4 Perth: Are you a cyclist?

Participant	Identifies with the term *cyclist*
Alicia	no
Amanda	yes
Charlie	no
Cory	yes
Damian	no
Judy	yes
Lizzie	unsure
Sean	yes
Sylvie	no
Van	yes

Their own cycling behaviour may not necessarily fit the definition they hold for a cyclist, and there is often deep concern regarding the interplay between their self-perception, and the perceptions and labels others may place on their cycling behaviour. Participants often juxtapose the behaviour of other cyclists in order to define their own cycling practice and subsequent identity.

Distance travelled, speed and clothing are seen as key identifiers for categories of cyclists. Sylvie, for example, decides that while she rides daily to work, she doesn't ride far enough to consider herself a cyclist.

> *But, yeah I use my bike quite a lot, but I think if I was doing longer distance or riding more for pleasure, even though I find pleasure in it, I'd call myself a cyclist. But with the amount I do, I wouldn't.*
>
> Sylvie, 33, Counterhand, Perth

Damian contrasts his cycle commuting against those riding a bike primarily for speed and fitness reasons:

> *I'm not like a speedster, exercise kind of thing. I'm more of a commuter. A way to get around.*
>
> Damian, 37, Artist, Perth

Alicia, too, explains how at first she felt a bit self-conscious about the speed she was travelling on her bike during her commute to university, compared with faster riders wearing specific cyclist clothing ('Lycra'):

> *Riding to uni[versity], I feel very sheepish about the number of people in Lycra who overtake me, but I've gotten over that. I'm like, "I am doing this!". And they're all really serious Lycra cyclists, they're mostly men, they're mostly riding to the city and I'm riding the other way and they're like whoosh riding past me. I think the first few times I was like, "I feel so inadequate", but now I'm like, "I don't care, I'm a different category of cyclist".*
>
> Alicia, 34, Lecturer, Perth

Cycling-specific clothing and equipment are expressed as an indicator for the Perth participants as to whether someone is a "serious" cyclist or not, and subsequently if they would call themselves a cyclist:

> *Not really, no. I mean, yes and no. I'd say that, maybe not now, but I'd say that generally I'd ride my bike a lot, it's how I get around. But I'm not like a serious cyclist, it's not kind of always on my mind, and I wouldn't go spend $500 upwards on a bicycle or equipment. I just wear my normal clothes when I go cycling. So, no, I wouldn't call myself a cyclist.*
>
> Damian, 37, Artist, Perth

Lycra cycle-wear is also mentioned as associated with certain behaviours and attitudes:

> *If you want to be a part of the Lycra brigade and go at 40kms an hour down the street, you're going to go on a smooth surface. People like me who plod along, I cycle at the pace of a fast walker. I don't hurt anyone, I have brakes you know. I'm the kind of person who annoys cyclists.*
>
> Judy, 35, Accounts Manager, Perth

While most participants implied they would not want to be perceived as or associated with the "serious Lycra cyclists", one participant was overtly judgemental about this group:

> *I think of cyclists as people in Lycra who kind of irritate me. They seem to have a different relationship with road users than I do, give me a bit of a bad rep[utation]. So, I don't think of myself as a cyclist, I just ride my bike.*
>
> Charlie, 33, Firefighter, Perth

For others, embracing the identity of "cyclist" has been a process. When Sean is asked if he identifies with the term he says:

> *Yeah. I would now. It's funny because if you'd said that maybe even, because I've been riding to work for, 5 or more years, but if you'd said that earlier on I would have gone, oh, nah, I'm not one of those Lycra- wearing … but yeah, I'd say, sure, I'll wear the man nappy or whatever you want to call it [laughs], I'm a MAMIL*[1].
>
> Sean, 48, Draftsperson, Perth

Again, this participant associates the characterisation of cyclist with particular characteristics of clothing and in this case, age as well.

By contrast, two of the research participants are very comfortable with the identity of cyclist, embracing some of the stereotypes expressed by the other participants. Cycling is a key part of Van's personal identity:

> *I Lycra-up and go for 80k morning rides on Saturday morning with the pack, and then I get my day to day mobility and transport all on a bike as well. So yeah, I 'like' WestCycle and BWA [Bicycling Western Australia] on Facebook, and if there's a survey about the needs of cyclists, I'll be filling that out. So, it's definitely part of my lifestyle, part of who I am.*
>
> Van, 26, PhD Student, Perth

Cory, too, is happy to identify with the often-criticised stereotypical cycling equipment and behaviour:

> *I think I like the connotations that it has. I don't think that the negative aspects of the stereotype that people talk about, like the Lycra, and the clacky shoes, and the nappy pants, the riding in groups taking over the road, are all that bad, or bad things.*
>
> Cory, 36, Handyman, Perth

The participants' cycling identities also depend on how others perceive their behaviour, and change depending on social context. Lizzie explains that while she uses her bike daily for

[1] MAMIL stands for Middle-Aged Man In Lycra and is often used pejoratively in the media (Osborne & Grant-Smith, 2017).

commuting to work, doing the shopping and going to the beach, cycling is seen as "part of the culture" in her Fremantle[2] community and subsequently her transport mode of choice doesn't have much bearing on her social identity. For her family outside of this cycling-friendly Fremantle culture, however, her bike riding is a key marker of difference and will often come up in conversation.

Lizzie, therefore, experiences a dual cycling identity, dependent on context and who she is talking to. Riding her bike every day, she supposes she is a cyclist, but is still keen to position herself in contrast to "other" cyclists:

> *I wouldn't associate with those Lycra, kind of hard-core, cyclists…*
>
> Lizzie, 39, Cultural Development Practitioner, Perth

Judy, however, implies that she didn't fit the standard, but identified with the term nonetheless:

> *"I'd say I'm a cyclist; cyclists probably wouldn't say I'm a cyclist."*
>
> Judy, 35, Accounts Manager, Perth

5.3.1.2 Melbourne

All but one of the Melbourne participants who answered the question "Do you identify with the term cyclist?" answered yes (see Table 5.5). In Melbourne there is a strong sense of cycling community, and that there is some shared identity amongst bike riders, even though they may have varied backgrounds.

Table 5.5 Melbourne: Are you a cyclist?

Participant	Identifies with the term *cyclist*
Audrey	-
Ben	yes
Bob	yes
Christine	yes

[2] The City of Fremantle is known as having a more environmentally friendly community, with many residents and councillors involved with sustainability related projects. The area has a higher rate of bike riding than other parts of Perth, at around 3% mode share, higher in some suburbs.

Participant	Identifies with the term *cyclist*
Elise	yes
Glen	-
Hazel	yes
Josh	yes
Kelly	yes
Kim	yes
Lena	yes
Michael	no
Penny	-
Pippa	yes
Sammy	yes
Sarah	yes
Stephanie	yes
Urvashi	yes

Participants described camaraderie amongst bike riders:

> *Sometimes there's a bit of camaraderie, which is nice, especially along the main sort of routes like St George's Road where a lot of people use it, and Napier Street, which is connected to that, it comes into the city, like a feeder to the city from the north.*
>
> Sarah, 36, Architect, Melbourne

> *[I]f I'm ever stopped at the light, I'm not sure I've ever stopped and not had some kind of even tiny chat with the other cyclists of some kind. …[E]ven ones that look like they're crazy fast with their, you know, crazy light bikes and everything, yeah, I think there's a real sense of camaraderie, amongst Melbourne cyclists anyway.*
>
> Penny, 29, Library Support Officer, Melbourne

Connecting with other unknown bike riders through waves, nods and smiles is also mentioned:

> *When I first started riding there a couple of years ago I was really worried because I'm like, well, I've been doing this cushy 20- minute, 30-minute ride, every day and now I've got an hour ride, and there's this massive hill that you've got to get through, and then you've gotta go along the ring road, anyway within that first week of riding, or maybe even that first trip, I don't remember, some other cyclist was coming towards me, big wave hello. I'm like, how nice! That's really nice.*
>
> ***Because they recognised you from before?***

No, no. Just because "you're a cyclist! hello!". I was like, oh this is really nice, so I started doing the same thing. I'll just be purposely trying to make contact with cyclists, eye contact or give them a hand wave or whatever.

Pippa, 37, Bike Mechanic / Nurse, Melbourne

The sense of community with other cyclists is paired with a sense of protectiveness over that community:

Definitely identify as a cyclist. If someone's complaining about "bloody cyclists" I'll offer them a different viewpoint.

Hazel, 26, Master Student, Melbourne

5.3.1.3 Utrecht

The question of cycling identities is met with quite a different response in Utrecht (see Table 5.6).

Table 5.6 Utrecht: Are you a cyclist?

Participant	Identifies with the term *cyclist*
Daryl	no
Flora	no
Haley	no
Lars	no
Mila	unsure
Philip	-
Sasha	no
Shu-Chen	no
Thomas	yes

In Utrecht, of the eight participants who answered the question: "Do you identify with the term cyclist?", seven answered "No". Mila suggests some possible linguistic confusion from the line of questioning in the interview regarding whether she used "cyclist" as an identity:

Maybe; also because it's in English, because I'm thinking of "fietser" in Dutch, but "cyclist" reminds me more of "wielrenner", and that's like the sports guy, or woman of course, and I'm not the sporty type. But a "fietser", yeah, well, I'm a "fietser" because I do everything by bike.

Mila, 35, Web Designer, Utrecht

The question often provoked laughter in Utrecht:

> ***Do you call yourself a cyclist? Is that a word that you use?***
>
> *[laughs] No, not at all. It's transport.*
>
> -Flora, 28, Student, Utrecht

Noting her bemusement, I explain a little of my experience cycling in Australia, that sometimes people on bikes acknowledge each other in the street, or alter their appearance or manner of riding to influence how drivers will interact with them. Flora's responses reflect a difference in the perception of cycling between participants in Utrecht, and the other case study cities:

> ***I think in Australia when you ride a bike, because there's less people, there's more of a sense of solidarity with the other cyclists. So you have a little chat with someone at the lights about anything, what kind of bike they have or the weather or whatever.***
>
> *Yeah? It's like an ethnic group!*
>
> ***Also, I notice, I think on the whole people are nicer to me when I'm riding a bike because a woman riding a bike is kind of a cute thing –***
>
> *[Laughs] Really?*
>
> ***And I kind of use that to make people not run over me.***
>
> *[Laughs] To me that's really funny, that's like alien behaviour. Riding a bike is kind of cute thing, and like a community, so you feel connected to the people riding a bike? No!*
>
> Flora, 28, Student, Utrecht

Lars clarifies that while he uses his bike for transport and to do the shopping, for him the term "cyclist" is associated with using a bike for sporting purposes:

> *When I hear "cyclist" I think; you cycle because it's your sport. Some people play football, some people play tennis, some cycle. I use the bike quite a lot to do shopping, to go from A to B, but I'm not a cyclist.*
>
> Lars, 30, Social Worker, Utrecht

The effect of the ordinariness of cycling in Utrecht has even impacted Daryl. Growing up loving cars in Australia (he still keeps his car in his mum's garage in New South Wales, despite living in the Netherlands for 2 years), and only beginning to cycle for transport as an adult in his mid-30s, Daryl has fully internalised the notion that being someone who rides a bike in Utrecht is very normal, and it would be strange to use that as an identity marker.

> *I think a cyclist here would be someone who has a proper road bike and a helmet. On the weekend, and out doing 100km, something like that, that would be a cyclist.*
>
> Daryl, 38, Sports Optometrist, Utrecht

Haley explains that what she likes so much about Utrecht is how normal cycling is, in contrast to her car-dominated home city of Sacramento, California:

> *What I really enjoy about the bike culture here is that it's normal. When I was in Sacramento I really felt like riding a bike was a political statement, you were kind of this rebel.*
>
> Haley, 25, Education Outreach, Utrecht

Thomas, however, is comfortable with the term cyclist, finding it apt to describe his daily habits of using his bike for the majority of his transport needs:

> ***Do you identify with the word cyclist? Is that something you call yourself?***
> *Yeah, oh yeah.*

Given the responses from previous interviewees, this response from Thomas was unexpected, so I clarify the question:

> ***Do you identify with that term because you're riding a bike every day to get to work, or is it because you're also interested in sport cycling?***
> *Not sport cycling, no, but for every commuter trip and to get groceries, every trip, I make on a bike. Sometimes I find myself at the library in my neighbourhood, and it's 200m, and I go by bike. It's not necessary, but it's my default. I could walk, but it's not my habit. The habit is to go by bike. … The default is going out the back door to the garden to the shed where my bike is. It's not the front door, that's for walking.*
>
> Thomas, 48, Civil Engineer, Utrecht

5.3.2 Interaction

Just as the bike riders are navigating various cycling identities, they are also managing interpersonal interactions with other road users, whether pedestrians, drivers or other bike riders. These interactions include how road space is shared as well as direct personal communications between riders and other road users.

5.3.2.1 Perth

The quality of interpersonal interactions with other road users colours participants' overall perception of cycling in Perth. In turn, this influences both route selection and the nature of their cycling practice, which may vary across locations. Alicia explains that while her over-all experience is "mostly positive", her past interactions with car drivers have impacted on her present cycling behaviour, making her more cautious in some places:

It's mostly positive. I feel a bit on edge. I don't feel scared, but I don't think I feel like, these are my streets, I'm in control. I'm in between. Being alert, watching what cars do, watching what car doors do. Up William Street, because I'm sneaking up, when the lights are red, between parked cars and the cars that are still for the red lights, that's kind of prime "getting hit with a door" territory. And I've had a couple of near misses, like, once I fell off my bike because I was almost hit by a car who [sic] was coming out of a side street turning and just didn't notice that there was a bike. So, there's a couple of routes where I'm a bit edgy about the side streets, and I watch the side streets carefully. That's, like, Bulwer Street to Lord Street, where there aren't so many cyclists… I really like bike paths, I feel much more relaxed when I'm riding on a bike path I have to say.

Alicia, 34, Lecturer, Perth

Several cyclists mentioned receiving verbal abuse while riding their bike, but as Sylvie suggests in her interview, this is par for the course:

I mean sometimes people yell at you, I don't mind, like, I've gotten over that.

Sylvie, 33, Counterhand, Perth

Sean, reflecting on his interactions with car drivers, said that on the whole they were good because he was "still here", again suggesting that while being the target of aggression from drivers was to be expected, it wasn't so bad that he'd been killed as a result. He was philosophical about these interactions, noting that "your attitude has to be forgiving" or you'll "become the road-rager yourself".

The interactions are, on the whole they're good because I'm still here. It's weird, there are some people you know I wonder if you've ever had it, you're riding along and people will yell out the window "bleerrrrgghhh!!", sort of unintelligible.

Yeah, and then they drive off!

That's right! But also from the other point of view I suppose, your attitude has to be forgiving, because if you're in a rush or you get pissed off then you become the road-rager yourself…

Sean, 48, Draftsperson, Perth

In addition to verbal abuse, Lizzie had also been assaulted while riding her bike at night. Consequently, her route choice and cycling behaviour are sometimes directed at mitigating or preventing harassment:

You do not put your life at risk. Sometimes I will ride on the footpath if I don't feel safe. Maybe on a Friday or Saturday night, occasionally, because I feel like you just get a lot of people in cars who either drive too close or yell, or like to speed up right next to you.

Lizzie, 39, Cultural Development Practitioner, Perth

In addition to feeling the impact of past negative interactions with other road users, some participants mentioned feeling social pressure to not hold up the traffic, even when they are following the road rules. Sylvie describes such a situation, riding home up a big hill:

> *I kind of, like, I know that as a cyclist you're part of the traffic and you have to follow car road rules too. I mean sometimes if it's too dangerous to be on the road I will go on the footpath. Like going back up High Street… you're just too much of a pain in the arse for the cars, because you're way too slow. Usually I'm carrying a load so I'm even slower.*
>
> Sylvie, 33, Counterhand, Perth

For Damian, and several others, making eye contact with drivers is an important safety measure:

> *If I'm in a situation that could be dangerous or something I just make eye-contact and make sure they've seen me.*
>
> Damian, 37, Artist, Perth

Judy makes a similar point about using eye contact to make sure she is seen and given space to pass:

> *I'd always make eye contact with someone who's stopped. Like if I've come up to a junction and a car stopped, I always make eye contact to make sure they've seen me, because there's nothing worse than being in front of a car and then it takes off.*
>
> Judy, 35, Accounts Manager, Perth

Cycling can also be experienced as a way to avoid negative attention and increase personal safety in certain situations. For Damian, being on a bike in some parts of Fremantle made him feel protected from negative social interactions with pedestrians:

> *In Freo there's lots of places, even in the day time too, it just feels a lot safer to be on a bicycle.*
>
> Damian, 37, Artist, Perth

Similarly, for Alicia, riding her bike home from work on nights she finished late, offered a level of safety from the threats of the late-night inner city above that of her other option, walking:

> *And I was going to say, if I wasn't night riding I would often be night walking, and I feel so much safer cycling than walking. It's a little bit like a video game where you're passing all the different like, there's the cops, there's the brawl on the corner, there's the person who's*

drunkenly leering in the road, car, dodge them, it's just like ping, ping, ping, getting home! So that's not always relaxing, but I think that it's a nicer experience than walking at night.

Alicia, 34, Lecturer, Perth

Mostly, however, participants' interactions with pedestrians are amiable. When conflicts do arise it is from a lack of awareness amongst pedestrians as to how to share space with bike riders. There is also a desire that pedestrians not see cyclists in a negative light. Consequently, many participants are keen to acknowledge "good" behaviour from pedestrians when it occurs, making a point of politely thanking them when they move aside:

Pedestrians I like to thank if they've done the right thing, just to encourage that kind of behaviour and make sure they don't think that all cyclists are going to run them over.

Cory, 36, Handyman, Perth

… I always ring my bell if I go past pedestrians and say thank you if they move out of the way.

Charlie, 33, Firefighter, Perth

Yeah, I'm usually dinging my bell and saying "Thank you!" as I go past. I try to be polite.

Amanda, 42, Disability Services, Perth

Attempts to encourage pedestrians to be aware of bikes and know how to share space with them are often informed by past negative experiences. Cory describes a disastrous interaction on a shared path with a group of pedestrians:

I came up behind them and they all just scattered, and so I tried to go around them, and one of them just stepped in front of me and I had to bail off the path, and pitched over the bars and broke my collar bone.

Cory, 36, Handyman, Perth

5.3.2.2 Melbourne

For the Melbourne participants, the focus of interpersonal interactions is other cyclists. Many of the participants have a keen sense of responsibility towards protecting the reputation of the Melbourne cycling community, and are happy to let other bike riders know when they are letting the side down. This is exemplified in Sarah's response to behaviour she believes is a reputational threat:

Sometimes I will yell at people who don't have lights on their bikes, and tell them to get lights… which, I don't know if it's that helpful but I just think it's a bit stupid. It's really stupid, actually, because it's not, you freak out other road users, and anything that gives cyclists as a collective a bad name, I'm not a fan of.

Sarah, 36, Architect, Melbourne

Bob is more restrained, but still feels comfortable to confront other cyclists if he sees a transgression that may contribute to a negative image of the practice:

I don't act like a policeman, just occasionally if someone crosses against the lights, some of our cyclists round here do that, then I just occasionally say, that gives us a bad name. You might have picked up that cyclists in some areas do get a bad name because they cross against the light and things like that.

Bob, 77, Retired Teacher, Melbourne

Others may not communicate their frustrations directly, but use their annoyance to police their own behaviour instead:

It's really annoying because some cyclists give everyone else a bad rap because it's really clearly signed, don't ride too fast, and I often find it's men who will just fang it along there, and it's like, really guys? Slow down a bit.

Hazel, 26, Master Student, Melbourne

Sometimes I'll see a cyclist do something that perpetuates the negative stereotypes around cyclists, and then that really annoys me. …I try and obey the road rules when I can, so that I'm not making drivers think badly of me.

Christine, 28, Developer, Melbourne

The response from Christine is interesting, in that she notes she tries to follow the rules when she can, the implication being that this is not always easy or possible to do.

In addition to policing the behaviour of other cyclists, performing acts of good public relations was common, such as thanking other road users for their considerate behaviour:

I usually just try and be polite if someone does something nice because then the next time they see a cyclist they'll think "Oh that person said thank you".

Penny, 29, Library Support Officer, Melbourne

5.3.2.3 Utrecht

Interpersonal interactions in Utrecht were on the whole more limited than in the other case study locations, in large part because of the separation of transport modes.

> ***With the pedestrians, do you end up interacting with them very much?***
>
> *No, not really. Not even on my city trips, they're on the sidewalk and I'm on the bike path. Neatly organised.*
>
> ***And car drivers as well? Not much interaction because of that?***
>
> *Yeah. It's quite organised. Except at the crossings. I do interact, but the main crossings are with traffic lights so you should only wait and you don't have to interact. Nobody waits in Utrecht; you might have noticed that!*
>
> Thomas, 47, Civil Engineer, Utrecht

For some of the participants, not being fluent in Dutch was a limitation to interact with others while cycling, however observations of Dutch cyclists suggested that interpersonal interaction was occurring, particularly with children:

> *As someone who speaks not-so-fluent Dutch I probably don't do it as much. But I do notice that when cyclists are stopped at stop lights or something they tend to chat with each other, especially if there's kids around and they're always kind of talking to kids.*
>
> Haley, 25, Education Outreach, Utrecht

Flora reflected that any altercations between cyclists and drivers weren't to do with identity, because as a driver next time you might be the cyclist in that situation:

> *You know you can't hate a cyclist when you are in the car because next time you will be on the road as well. It's not like an identity thing. If you're driving a car and you're annoyed by a cyclist it's just because he's [sic] annoying in his [sic] behaviour, not because you hate the cycling thing.*
>
> Flora, 28, Student, Utrecht

For some of the expats, however, it is difficult to let go of habits developed in less cycling-friendly contexts:

> *I always make eye contact with drivers, because that's something that's ingrained from cycling in London.*
>
> Philip, 42, Internet Security, Utrecht

5.3.3 Route

The theme of “Route” relates to the aspects of how or whether participants plan their routes, what makes for a good cycle route, and things that stand out in their cycling experience.

5.3.3.1 Perth

For several Perth participants the main objective in route planning is to avoid challenges such as hills, intersections and traffic:

> *Hills, and cars. I find in the suburbs around Freo [Fremantle] a lot of people in the cars are used to cyclists, but then you get onto the main roads here, you don't necessarily have the people that are used to cyclists.*
>
> Judy, 35, Accounts Manager, Perth

However, for others it was either a preference for directness:

> *I try and pick the most efficient route, which is usually pretty direct unless I have to skirt around a hill or across a railway track, across a freeway or something like that.*
>
> Cory, 36, Handyman, Perth

or dependent on the purpose of their trip:

> *I prefer to ride on cycleways. And I also prefer direct routes. I mean, even though I ride down High Street to go to work, and that's definitely not a cycleway, it's just direct. If I'm going down to South Beach, or if I'm going to Cottesloe or whatever, I try to pick the cycle paths more.*
>
> Sylvie, 33, Counterhand, Perth

Becoming familiar with travelling by bike often changes the way people think about their navigational options for travelling within the city. Judy, referring to her car-based way of travelling as her “road map”, describes the difference that cycling offers for navigating Fremantle:

> *So I guess if you visualised it, my road map of Fremantle is very rudimentary and basic, but my cycle map of Fremantle is quite intricate, because you can go down one way roads the other way, you can cut through, you can go through the pedestrian mall and stuff like that.*
>
> Judy, 35, Accounts Manager, Perth

Sean's way of thinking about how he will get to Perth from his home in East Fremantle has also changed since he began commuting by bike:

> *If I think of going to Perth now, the bike path's included. Whereas, before it would be, like, how do I get onto the freeway from here? And that would always be car-centric. So, going Canning Highway, or going Leach Highway. Whereas, those roads - Canning Highway, Leach Highway - they don't really feature in my bike mind at all. They're like a poisonous river, almost, in my mind.*
>
> Sean, 48, Draftsperson, Perth

Similarly, for Van, the conceptual boundaries of his world are at the edge of where he can comfortably cycle.

> *Constrained by either a flat, 20-minute bike radius around my house, or places that are adjacent to a nice bike path that is kind of connected up to the city, that's my urban geography.*
>
> Van, 26, PhD Student, Perth

5.3.3.2 Melbourne

Due to the inconsistences in secure and separated cycling infrastructure across inner Melbourne, many in this city prioritise finding quiet, ostensibly safer, routes away from traffic, even if this makes the journey longer:

> *I'm happy to trade off speed for quiet and comfort and a lower risk. Less interaction with cars.*
>
> Glen, 57, Planner, Melbourne

> *Even having ridden for so many years now, I will go a longer way if I can find a road that has a separated bike path. For me that is absolutely paramount that, I'm happy to ride on a separated bike path where you get to share the road with car drivers, but will not ride in traffic where I am riding with cars, where I have to share the lane with a car.*
>
> Urvashi, 41, Lecturer, Melbourne

> *I prioritise ones that are pretty quick, pretty direct, but at the same time fewer cars I guess. There aren't really many back streets around here. For example, I don't ride down Punt Road or Johnson Street, which are two quite direct ways, but I ride down Napier Street. I just try and find ways that have fewer cars, and also ones that have more bikes, so there's bike lanes, other bikes around. Though a couple of my accidents have been because of bikes [laughs]. I also think if there's more bikes on the road, cars are more likely to be*

aware of bikes, and hopefully they're bike riders who are used to riding with other bikes as well.

Sammy, 37, Youth Worker, Melbourne

Hazel, too, was happy to discover an alternative commuting route to busy, often hazardous, St Kilda Road, finding she was better able to relax and take in her surroundings, contributing to the pleasure of the overall trip:

When I stopped riding on St Kilda Road, it was just so much more pleasant to ride my bike. … I just want to see what else is going on. So I can do that more when I'm riding, say, riding through Albert Park or riding down the bike lane in South Melbourne. Because there's less traffic, I can sort of take a bit more time and not get so stressed about being doored, basically.

Hazel, 26, Master Student, Melbourne

For others, avoiding traffic and its perceived and real dangers for cyclists, is a general priority that will be trumped by speed and convenience when it comes down to it:

I don't enjoy riding in traffic, and I do try to minimise my time in traffic. Having said that, speed and convenience are also pretty important to me. So if I have to go too far out of my way to find that, then I'll just put up with the traffic instead.

Kelly, 34, Sustainability Officer, Melbourne

When discussing the way that their experiences affect route choice, both in pre-trip planning and during a journey, several participants reflect on the importance of maintaining a sense of momentum and "flow" in their journey. For Pippa, this is a core feature of her cycling behaviour:

I just say my middle name's momentum; I just need to keep on rolling.

Pippa, 37, Bike Mechanic / Nurse, Melbourne

To this end, Pippa seeks out routes that while not necessarily direct, will allow her to keep moving without her momentum being impeded:

I do like to go fast, and I'm conscious of that, and then I thought, slightly parallel to that there's ways you can get back to my place, all these side streets that are quite quiet, and then there's a few paths that you can ride through as well, so I started taking that instead. It's not necessarily the most direct, straight line, but it feels more efficient because I'm not stopping at all the train crossings.

Pippa, 37, Bike Mechanic / Nurse, Melbourne

Stephanie embraces the challenge to adjust her route as she goes to maintain her momentum:

> *I hate stopping. So it's a challenge in that sense, I'm like, if I can make it quicker this way. Or if I'm like, oh the trail's blocked, there's too many cars I'm just going to go the other way.*
>
> Stephanie, 27, Master Student, Melbourne

Elise explains how a large part of her commute from Coburg in the north to the city in the south runs along the Upfield train line. A shared bike and pedestrian path parallels the train line for several kilometres, and is popular with city-based commuters. The downside to this route is that it is crossed by several east-west roads, potentially impeding the flow of bike-traffic. As Elise, a new rider, had become more confident in her abilities and knowledge, in her desire to maintain her flow and speed as she went to work, she had taken to racing the train to keep up with the cleared route:

> *There are times coming to work, because I go over a number of busy roads but it's all parallel to the train line, so if you manage to catch the train going through, you get a clean run all the way. If you can keep up with the train for a decent number of blocks, then you just don't stop at all for about 5k.*
>
> Elise, 37, PhD Student, Melbourne

The elements also play a role in how one's route is selected:

> *I'm not intentional about my direction... I don't know why I choose one way or the other. Oh, I do know why sometimes: At certain times the sun is in your eyes if you go that way and you get a bit blinded. At other times it's a question of the wind.*
>
> Bob, 77, Retired Teacher, Melbourne

5.3.3.3 Utrecht

Contrasting with Melbourne and Perth, where the main choice of route is between speed and safety, in Utrecht the choice is primarily between speed and pleasant green space. The Utrecht participants appreciate natural surrounds, with several people commenting on green-ness and proximity to water-ways being part of the mix in what made a good bike route. Nonetheless, with a couple of exceptions, most took the fastest route to their destination. If there were pleasant surrounds, this is seen as a bonus:

> ***How much do you notice sounds and smell, all those physical sensations when you're riding?***

A lot I think. Sounds, a lot. In particular, right in the morning, cool, fresh, the smell of the grass, I'll ride along the canal, hear the birds and boats and people walking their dog, I think you notice a lot of that.

It was amazing this morning.

Oh, when the weather's good you can't beat it. To me it's always an incredible start to the day, to be able to jump on a bike, riding through a really picturesque area.

Does that affect how you plan your route?

Nup. Shortest route.

Daryl, 38, Sports Optometrist, Utrecht

If it's a new route, well the well-known routes I just take the same route every day I think. Really, if I'm in a really special mood - it's hard in English! - but if I really feel like OK, I'm going to try something new, I might take a detour or something, but that's not often because I always have a goal to go somewhere.

Mila, 35, Web Designer, Utrecht

Lars noted that cycling had changed the kind of map he had of the city, from when he first moved to Utrecht and wasn't yet using his bike often:

The first year I travelled by public transport or by car, so I knew the big streets and not the small bicycle-ways. So that made the large scale map, and with cycling you know the small routes. So I knew to get from suburb A to B with the big routes, but now I'm riding a bike, all the smaller routes that are in between.

Lars, 30, Social Worker, Utrecht

5.3.4 Engagement

In all three cities, cyclists are engaging with the urban and natural environment, and experiencing both the positive and negative aspects of this. The participants in all locations agree cycling facilitates a connection to the environments a bike rider travels through, simply because there is no physical barrier to the outside world. While this made participants feel vulnerable in the Australian cities, it also allowed for openness to engaging with the community, the built environment, the seasons, and the natural world.

5.3.4.1 Perth

For Sean, cycling offers a direct experience of the elements:

It just allows you to go and experience places in a free manner …it feels freer than travelling in car… You're interacting straight away with the environment, whether it's raining or hot or whatever it is, and I enjoy that, even if it is raining!

Sean, 48, Draftsperson, Perth

Amanda too enjoyed the opportunity to engage with nature:

When I'm going to the shops, I'm usually just going to the shops, but I still notice things sometimes. Sunsets are beautiful, aren't they? So, sunsets, and the reflections on the trees.

Amanda, 42, Disability Services, Perth

5.3.4.2 Melbourne

Participants in Melbourne discuss riding with or in close proximity to motorised traffic in busy streets, sharing the space with multiple transport modes including trams, buses, and private vehicles. The inherent openness of the cyclist exposes them to what is often a source of stress, sometimes overwhelming the senses. In this case, engaging with the external environment can mean increased emotional and physical vulnerability. For Kim, a new rider, traffic sounds were one of the most intense aspects of cycling:

When you ride and there's traffic there's almost too much stimulus, particularly aural stimulus. When you're riding you're confronted. The thing that I noticed right away was the aural assault that you get when you ride a bike that you don't get in a car.

Kim, 43, Teacher, Melbourne

On the whole, however, engagement was seen as positive, and one of the contributing factors to why so many participants described their cycling experiences in terms of relating to the benefits to their mental health.

For Lena, cycling is an opportunity to engage with the environment around her:

I always enjoy the wind, the feeling of air, of flow, just being somewhere in motion, in the environment, I guess.

Lena, 41, Lecturer, Melbourne

For Urvashi, her whole cycling experience including spontaneous changes to route, were a result of engaging with the external world:

I do like to look around when I'm cycling. When I ride to places like Edinburgh Gardens, that's how parks and gardens should be, people are really enjoying them. It's really a hive of activity, there's people and dogs, so I'm always watching what's going on. That stimulation is really important. ….

I do like when I see the seasons changing. Sometimes in the midst of summer when it's extremely hot, I ride back home 3 or 4 in the afternoon, and I'm so concentrated on thinking about OK, now I have to work out where all the shades are so I can take advantage.

Do you change your route so you can find more shade?

Sometimes yes, if I'm coming back on those really hot days, I will actually look at ways I can get shade.

Urvashi, 41, Lecturer, Melbourne

5.3.4.3 Utrecht

Utrecht participants similarly enjoyed being able to notice and engage with the surrounding environment:

A couple of days ago I work too hard on the computer and I need to get away, so I just took my bicycle and went out for an hour cycle. You feel the sun, you feel the wind, you feel everything.

Shu-Chen, 42, Social Worker, Utrecht

I would say that the nature of the bike, in that you're a bit more open to nature, and the environment, has an emotional impact, and maybe to me a bit more calming.

Haley, 25, Education Outreach, Utrecht

There isn't much nature in the city, but I see that things are beautiful when cycling. The old canals, I cycle them a lot, and every time, especially when the trees a green I'm like, oh, it's such a beautiful city. I notice the parks. So if there's nature, I definitely notice.

Flora, 28, Student, Utrecht

5.3.5 Discovery

Participants speak of intentionally or accidentally discovering new places while being on their bikes, which offers a different, often more flexible, experience of the city than being confined to the rules, routes and speeds offered by other transport modes.

5.3.5.1 Perth

Throughout the interviews Perth participants reflected that living in Perth is associated with car ownership, and car travel as the default transport mode. The participants juxtapose the normalisation of automobile dependence with their enhanced experience of the city as bike

riders. Through his vivid, extended description of cycling through Northbridge, an inner Perth suburb, Cory explains how riding a bike has opened up spaces to him that would have been unappealing or impossible if travelling in a car, showing him a side of city life that may otherwise be hidden:

> *There are definitely places I've been on a bike that I would never have seen in a car, particularly in the city. In the city area there's so many different laneways, backstreets, carparks, right-of-way type things, that you just drive straight past in a car because they're not useful for you. But, they become really useful to you on a bike because they give you counter flow to a one-way street, or a short cut through to where you want to go, or are just quieter and more appealing anyway.*
>
> Cory, 36, Handyman, Perth

For Cory, the spaces that riding a bike open up to him provide a window into the human side of the busy inner city. Through physical proximity to often hidden activities, cycling these back streets connects Cory to his community, facilitating a growing familiarity with how others in his neighbourhood live and work:

> *There's so much going on in those back lanes, right-of-ways and alleyways. An obvious one is street art. There's so much new street art going around which you probably wouldn't see unless you were walking or cycling there, but also, seeing the machinations of the city, what goes on behind in the rear doors, in the carparks, in the right of ways. Business goes on. You see the guy who's hosing out his range hood from his restaurant, and you're thinking, that guy does really good noodles and here he is hosing out his range hood.*
>
> Cory, 36, Handyman, Perth

Amanda's response also suggests a level of intimacy cycling gives the practitioner to discover and experience places normally denied to car drivers, as well as the ability to go further with less effort to seek out new places that is denied to pedestrians:

> *…you get to see places that you wouldn't normally see. Sometimes, if you're walking somewhere, you're like, oh, maybe I'll take this lane. Well, it could be like an hour walk but it's a ten-minute bike ride.*
>
> Amanda, 42, Disability Services, Perth

5.3.5.2 Melbourne

Participants in Melbourne describe how using a bike as their regular mode of transport has given them "a different kind of map" of the city from one based around car travel. This map was more detailed, offered a variety of routes inaccessible by other modes, and is not

necessarily aligned with a car-based map, sometimes making memory-based navigation tricky when driving:

> *Definitely, your sense of distance and scale changes once you've gotten used to riding a bike. It's very different from driving a car or walking. Sometimes I'll be planning out a route in my mind for driving and I'll be like, oh crap, I forgot, and it'll be a thing where only bikes can go, you can't drive through there. So you definitely know all the sneaky ways as a cyclist… You see a kind of porosity of the city that you wouldn't otherwise, kind of like if you're a pedestrian.*
>
> Kelly, 34, Sustainability Officer, Melbourne

> *We're actually in a bit of an island here. It's hard to get in from particularly Smith Street, there's lots of one way or no entry streets. But as a cyclist a lot of them have contra-flow bike lanes that you can ride in. But you really need to just change your mindset when you're driving. Use Punt Road and Nicholson Street, but if you're on a bicycle there's a lot more, good, separated streets you can use.*
>
> Ben, 31, Planner, Melbourne

Following from Kelly, the porosity of the cycling city allows for more spontaneous exploration through a freedom of movement not afforded to travelling by car or public transport. For Sarah, getting lost takes on a pleasurable quality because of this:

> *I really enjoy getting lost on a bike as well, because you can just, you've got more agency to move around. I've found awesome things getting lost. Little pubs down back streets and things, especially when you move to a new area, or moving to a new city.*
>
> Sarah, 36, Architect, Melbourne

Similarly, for Urvashi, travelling by bike is an opportunity to discover new places and new routes, off the main roads:

> *I always get very excited if I'm going to go meet friends who might be in an area I've never been to, and I get to go down roads that, if I was driving, I'd probably go the most direct route down a main road. But here, because I'm often finding bike paths, it might take me down roads and through parks that I haven't discovered before…*
>
> Urvashi, 41, Lecturer, Melbourne

For Bob, the simplicity of the bicycle makes it easy to connect with places he rides:

> *The bike is a fairly simple mechanism, I like that you can get on and off and stop where you want to.*
>
> Bob, 77, Retired Teacher, Melbourne

5.3.5.3 Utrecht

Discovery is more apparent as a theme for those who had moved to Utrecht from elsewhere. Cycling had shown them new places, and new ways of connecting those places:

> *I realised a month or two ago I was just using the same cycle routes. I used Strava for mapping my rides, and you have the heat maps, and you look at the heat map and I only ever do these three or four routes, and that's really boring. So I'm now trying to follow the same kind of direction, but trying to discover new routes, and finding dead ends and having to go back. I did a cycle, last time I came back from Amsterdam, I went a completely new route and was convinced I'd been cycling for 60km, but it was only four or five kilometres longer than normal, ...it just felt like it was so much longer and more interesting. It was all new, seeing new things.*
>
> Philip, 42, Internet Security, Utrecht

> *It's helped me see more of the city too, I think. Because I have some friends here that amazingly don't ride bikes, they're also expats, I think it scares them. I definitely think I've seen a lot more of the city, and also outside the city as well, because it's a lot easier to ride a bike than do two bus transfers to go to this one lake, or something like that. And as far as, if we're talking about like a map of the city, it's probably very fragmented because you only focus on little areas, and sometimes it's hard for me to think of the overview of the city, because you're so down in the map that you're kind of curving around all these small little areas and it's not so straight forward.*
>
> Haley, 25, Education Outreach, Utrecht

The design of Utrecht encourages bike riding by limiting access to the city centre by car. This naturally shapes how participants engage with the city by bike:

> *Yep, first thing, because you can't get everywhere in a car. To the city centre, you can't get there, it's very uneasy, you can't do that. But on a bike I can cross the city on all kinds of routes.*
>
> Thomas, 47, Civil Engineer, Utrecht

5.3.6 Time

The theme of “time” refers to the time spent while engaged in cycling, or the amount of time taken to use a bike for cycling. Across the case studies, the theme of “time” arose in relation to things such as cycling being the fastest mode of transport, or saving time through allowing the incorporation of exercise or another desired activity into their daily transport.

5.3.6.1 Perth

Cycling can offer time alone, or time to oneself:

> *But then when you're on a bike, there's nothing. I think that's why I do it every weekend. Just go and no-one's at you. ... It's definitely thinking time. Some people meditate, some people drink wine and go on holidays, I go on a bike just to get some peace and quiet.*
>
> Judy, 35, Accounts Manager, Perth

> *It totally makes me happier. Undoubtedly. Riding my bike in the morning keeps me sane before I have to go to work. If I had to drive, I'd be completely depressed.*
>
> Charlie, 33, Firefighter, Perth

Van uses his commute to university as a time for fitness, but also listening to podcasts:

> *Yeah, I listen to podcasts because I'm a big nerd. ... I listen to podcasts when I'm riding to work and back, but that's the only rides where I listen to headphones.*
>
> ***Is that because you're off the road?***
>
> *Yeah, it's because I'm off the road ... pretty much the whole time, so I don't really have to listen out for cars and stuff, and also because it's a regular, daily thing. So it can get a bit monotonous if my mind's not doing something else.*
>
> Van, 26, PhD Student, Perth

5.3.6.2 Melbourne

In Melbourne participants describe cycling as a time for taking care of their mental health, or just unwinding from the work day. The positive impact cycling has on mental health is an important reason many participants maintain their cycling practice.

> *I also think it's good for my mental health to ride places, particularly because I have a stressful job.*
>
> Sammy, 37, Youth Worker, Melbourne

Cycling can be an opportunity to practise mindfulness and focus solely on what is happening in the present moment:

> *I think that's another reason why I love it so much, because it's that time where I'm not thinking about anything but my cycling. All my worries are gone for that period of time.*
>
> Hazel, 26, Master Student, Melbourne

> *That stuff about the zen stuff. The fact that I can't think of anything else except that; that all I get to think about is being on my bike.*
>
> Kim, 43, Teacher, Melbourne

Or just for time away from screens to think:

> *I do a lot of thinking on the bike, it's one of the few times in the day when I'm not in front of a screen, not in front of a book, there's nothing occupying my attention apart from getting where I'm going.*
>
> Kelly, 34, Sustainability Officer, Melbourne

5.3.6.3 Utrecht

For several participants in Utrecht the most enjoyable aspect of cycling is that it affords an opportunity to simultaneously engage in another activity they enjoy:

> ***What makes you most happy when you're riding?***
> *Music. Not the cycling itself. Really, listening to music*
> ***So is it that it gives you the opportunity to enjoy something like that?***
> *Yeah. I have a lot of social appointments, I'm always somewhere. I've got a lot of friends to talk with, but I really like spending time on my own, that's why I sometimes take the bigger route, because I really, really enjoy being on my own, listening to music*
>
> Flora, 28, Student, Utrecht

Philip describes how his style of riding and motivation for using his bike had changed since moving to Utrecht. From London, he had begun cycling there as an alternative to commuting by public transport, which he had found unpleasant and slow. As a response to London's intense and often hazardous cycling conditions, he had developed a robust and speed-focused riding style, often tracking his times, using the mobile application Strava, in order to attempt to better them each ride.

About a year and a half prior to our meeting, Philip had been introduced to mindfulness meditation, and was inspired to apply its principles to his rides.

> *So about a year and a half ago I followed the mindfulness stress reduction course, and I decided to change slightly how I cycle. ….*
>
> Philip, 42, Internet Security, Utrecht

While previously his cycling had been focused on listening to music that would inspire him to ride fast, now his cycling practice was quite different.

> *Now I just pay a bit more attention to what's around me, and how I'm feeling, and whether I have any pains, rather than before it was, "I must get to the destination as quickly as possible".*
>
> Philip, 42, Internet Security, Utrecht

5.3.7 Agency

The theme of agency describes the independence and autonomy participants associate with cycling for transport. This was related to ease of movement, financial independence and independence.

5.3.7.1 Perth

The aspects of agency that were present in the Perth interviews were often related to the low financial input required for cycling, and subsequent ease of access and use of a bicycle. Additionally, agency was associated with the participants descriptions of feeling free from the restrictions of public transport timetables, as well as having physical access to spaces denied other transport modes.

These two aspects of agency are articulated by Alicia. Firstly, the independence of being free from purchasing fuel, maintaining a vehicle or following timetables:

> *I really like that you don't rely on, you don't have to have petrol, you don't have to ... make sure the battery's charged or the timetable or- there's something that makes you very independent as a cyclist compared with any other transport.*
>
> Alicia, 34, Lecturer, Perth

The other aspect of cycling agency is making decisions around how to cycle, dependent on traffic and environmental conditions

Cycling makes breaking rules possible, and unsupportive infrastructure at times makes it necessary. Rule breaking is, however, a socially awkward decision, and choosing to do so varies according to context, as Alicia continues:

> *When I'm in a car I religiously, like, I would never run a red light. But when I'm on a bike I have this weird, in-between space. So I don't disregard the road rules, but I don't always follow them either.*
> *... the streets aren't safe to be set up for cyclists so I feel like I have a bit of leeway in terms of making it safe for myself. So if a policeman was like, why did you take off with the pedestrians I'd be like, well I feel safer, and then I might be able to make a case for that.*
> *I also feel like in my head the pedestrian green man is for me, even though it's not. So when I'm riding in the mornings and the green man goes green before the car light goes green, I take off with the green man so I'm like, I feel safer. I feel like I'm less at risk if I take off with the pedestrians and the car rides past me in two minutes' time than if I take off with the car and I'm kind of getting my momentum at the same time as them.*
>
> Alicia, 34, Lecturer, Perth

5.3.7.2 Melbourne

Again, in Melbourne, cycling is associated with agency, in that it allows the practitioner a degree of autonomy and control often denied other transport modes:

> *I don't know, there's probably some underlying thing about freedom and autonomy, not being able to control your environment but being able to sort of navigate things, go where you will.*
>
> Audrey, 49, Lecturer, Melbourne

> *When you're a car driver you tend to get funnelled onto the arterial road network. As a bike rider you can follow a completely different network. …On a bike you can get around obstacles. If there's a road block you just ride through it. There's lots of intercity road closures that have been put in the last 40 years. On a bike you can get round them. In a car it's not worth it, you spend the whole time going round and round in circles.*
>
> Glen, 57, Planner, Melbourne

> *Obstacles to avoid, people to dodge, you know, you're sort of playing a game. You're playing a video game where you have all these little challenges to go through..."*
>
> Stephanie, 27, Master Student, Melbourne

5.3.7.3 Utrecht

In Utrecht the theme of agency related to the ways in which cycling enabled the participants to go about their daily routine easily, cheaply and efficiently. The comparisons were mostly with public transport use, rather than driving a car.

> *It's cheap, it's better for your health than public transport. It's nice to ride a bike. The only negative thing I can think about is you might get wet. It happens a lot.*
>
> Lars, 30, Social Worker, Utrecht

> *I definitely think I've seen a lot more of the city, and also outside the city as well, because it's a lot easier to ride a bike than do two bus transfers to go to this one lake, or something like that.*
>
> Haley, 25, Education Outreach, Utrecht

> *It's just my standard way of transport.*
>
> Mila, 35, Web Designer, Utrecht

5.4 Summary

The meanings and intensity of the themes differ across the case study cities. Table 5.7 ranks the importance of the themes to the participants in each location. To begin with, cycling identities were ranked with high importance in the automobile dominated urban contexts of Perth and Melbourne, both of which have low rates of cycling. In Utrecht, where cycling is so common as to be a normalised mode of transport, the notion of a cycling identity was seen as strange to many of the participants.

Interaction with other road users ranked highly in Perth and Melbourne, where the quality of such a contact greatly affected the pleasantness of the experience. In these cities interactions were generally related to communicating the presence of the cyclist to other road users in order to minimise the risk of a collision. Other interactions, however, were of a more personal nature and depending on their quality, could leave the cyclist feeling connected to or alienated from their community. In Utrecht, interaction with others was not as required to maintain the cyclist's safety. As the presence of cyclists was not unusual in itself, interaction with others on the basis that they were using a bicycle was not generally experienced nor desired. The widespread separation of transport modes further reduced the opportunities or requirement for the Utrecht participants to interact with other road users.

Participants in Melbourne put significant effort into selecting a route that suited their particular requirements, such as directness or separation from motorised traffic, and hence the theme of route was rated highly. This was less the case in Perth and Utrecht. In Perth, the lack of options for selection of "good" routes – those that were secure and direct, or more protected and picturesque - meant the priority for the cyclists was to avoid the worst aspects of the transport network. These elements included hills due to the increased vulnerability resulting from slowness and physical exertion, and busy intersections without supportive cycling infrastructure. In Utrecht, route selection was not ranked as highly important due to the widespread provision of comfortable, dedicated cycling infrastructure in a social context of normalised cycling. The Utrecht participants greatly appreciated pretty, tree-lined paths or being able to cycle past interesting architecture, however, they tended to prioritise the fastest, most direct route to their destination. Ultimately, for the Utrecht participants, all routes were equal in terms of safety and comfort.

While Perth participants did express their enjoyment of the openness to the elements that cycling affords, overall their focus was on the immediate road environment and concerns for

safety. In Melbourne and Utrecht, however, engagement with the surrounding environment was rated much more highly. Awareness of the external world could be extremely unpleasant in Melbourne, if experiencing heavy motorised traffic in close proximity. Conversely, if the participant selected a route that incorporated a parkland and off-road cycle paths, the experience could be very satisfying and pleasant. The Utrecht participants felt very comfortable cycling everywhere, and could afford to let their senses wander to the wider world around them. Engaging with the surrounding environment was viewed as a strong positive aspect of the cycling experience.

The bicycle can be construed as a tool of discovery, with this theme ranking highly in Melbourne and moderately in Perth and Utrecht. In Melbourne and Perth, several participants described how cycling had facilitated the discovery of new places due to the increased access to spaces the bicycle afforded compared with other transport modes. Several Utrecht participants noted the role of the bicycle in discovering parts of the city when they first moved there, however, as the bicycle was not a novel mode of transport, cycling was not in itself a strong means of discovering new places. Urban planning of Utrecht in recent decades has prioritised space for cycling within the transport network, and as such the bicycle does not function as an alternative vehicle for experiencing the city. Indeed, for all participants in Utrecht the bicycle was the primary and often only mode of transport. In addition, due to the large crowds of cyclists, bicycles, along with other vehicles, were excluded from many parts of the central city, and so walking became the primary mode of exploration and discovery in these areas.

The time cycling gave to participants, particularly as a “time out” from normal life, was rated highly across all case studies. Cycling was often construed as a time for contemplation, daydreaming and even meditation. In Utrecht, participants perceived the role of cycling as facilitating engagement with secondary activities such as spending time with children or listening to music, as highly valuable.

Finally, given a supportive environment and with sufficient route options, cycling was associated strongly with agency in Melbourne and Utrecht, though slightly less so in Perth. In Melbourne, agency was closely bound to the agility, manoeuvrability, adaptability and relative speed of the cyclist when contrasted against the restrictions of a public transport user limited to particular routes and timetables, or a driver helplessly trapped by congestion. In Perth, the agency associated with a riding a bike was similarly connected to freedom from public transport scheduling and the comparatively high running costs of owning and

maintaining motorised transport. In Utrecht, the participants did not overtly state that cycling was associated with agency. However, the fact of their daily use of cycling for a range of transport needs, including commuting, socialising, shopping and transporting their children, demonstrates that cycling facilitates their everyday mobility, offering them a high degree of agency in how they move through their lives.

This chapter demonstrated the range of interpretations given by the participants in each case study city of their cycling experiences. The results of the semi-structured interviews indicate that in highly automobile dominated contexts, cyclists strongly consider how they identify with their mode of transport, which in turn, appears to affect how, and how much, they will interact with others in the transport network and engage with the wider urban environment. Across all case studies, and despite localised challenges, it was clear that the participants overall appreciated the time spent cycling, and that it was a positive force in their lives.

Table 5.7 Summary of semi-structured interview themes by case study

	City					
	Perth		Melbourne		Utrecht	
Theme	**Importance**	**Key Findings**	**Importance**	**Key Findings**	**Importance**	**Key Findings**
Identities	High	Very strongly considered, concern regarding perceptions of others	High	Very strong identification with cycling and being a "cyclist"	Low	Cycling is normalised; for most, not something to identify with despite daily participation
Interaction	High	Interactions with drivers were construed as negative; interaction was directed at making sure they were seen by drivers as well as pedestrians; safety focused	High	Policing the behaviour of other cyclists; good public relations with pedestrians	Low	Minimal interaction with other road users, generally positive
Route	Medium	Route aimed at avoiding difficulties like hills and intersections; noted cycling had changed perceptions of how to get to places	High	Finding routes that were separated from motorised traffic was prioritised; interestingness of route also important	Medium	Route choice about preferences, not safety
Engagement	Medium	Limited engagement with surrounds, enjoying being in the elements	High	Good and bad, intense sensory experience in heavy traffic; pleasant enjoying natural surrounds of city on separated paths	High	Feel comfortable to really be aware of surrounding environment; very enjoyable part of cycling

	City					
	Perth		Melbourne		Utrecht	
Theme	**Importance**	**Key Findings**	**Importance**	**Key Findings**	**Importance**	**Key Findings**
Discovery	Medium	Cycling makes one intimately acquainted with the city, opening up spaces perhaps not available using other transport modes	High	Cycling facilitates finding new places, was seen as a very positive aspect	Medium	For those new to the city, cycling had proved an important method for understanding the city layout and finding new places
Time	High	Cycling valued as time out, time for contemplation	High	Cycling valued as time for mental health, time out, focusing the mind	High	Time available to engage in other, higher value activities
Agency	Medium	Valued for independence of mobility, freedom from timetables and costs	High	Freedom from congestion, ability to control one's mobility	High	Not stated overtly, however facilitates many aspects of participants' lives

Chapter 6 Go-Along Interview Results

6.1 Introduction

Go-along interviews were conducted in Perth, Melbourne and Utrecht, to complement and enhance the data gathered through semi-structured interview. The go-along method of interview reflects the phenomenological research methodology used in this thesis (see Chapter 3: Research Design) by facilitating collection of data in the moment the phenomenon under study occurs. The mobile nature of this interview method makes possible capturing aspects of cycling experience that may not be easily explored within the limitations of the traditional semi-structured interview setting. The go-along interviews took the form of a narrated bike ride, whereby each participant recorded themselves speaking into a microphone while riding their bike. A GPS track of the event was collected simultaneously.

The themes that developed through analysis of the go-along interview transcripts are represented in this chapter as spatial transcripts (Spatial Transcripts 61.-6.65). These are presented as quotes from participants shown alongside screenshots of the custom web application used combine and visualise the go-along data (see 3.4.1 Visualisation). Explanations of the themes are provided for each case study city, with clarification where required if multiple forms of a theme are present in the examples given. However, central to the method of go-along, as it is used in this thesis, is the direct conveyance of the participants' own descriptions of their cycling experiences.

6.2 Go-along rides

Within the bounds of the thesis objectives, participants were free to choose their preferred route to cycle for the go-along interview, as well as which time of day, the speed and manner of riding. The purpose of the trip was also not prescribed, though the preference of the researcher for the ride to be primarily for transport was expressed. The details of the rides, as recorded via the GPS in the smartphone, are provided below.

6.2.1 Perth

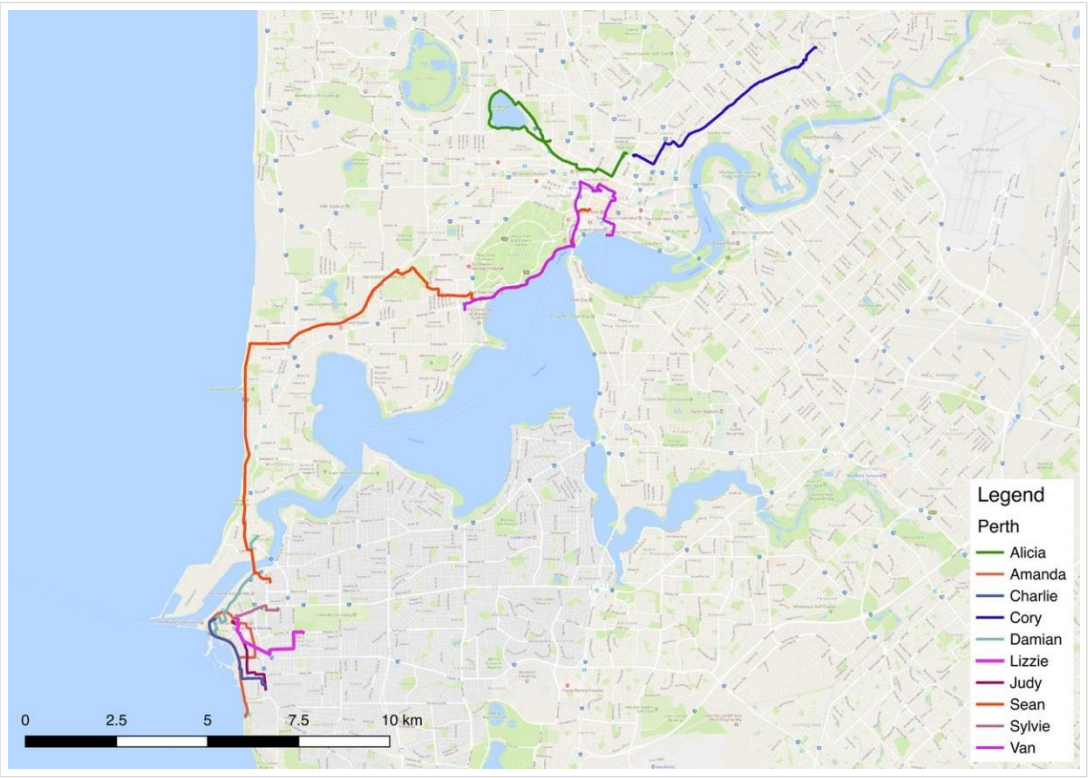
The Perth go-along interview rides (see Table 6.1) averaged 25.35 minutes in duration and 6.66km in distance. The longest in duration and distance was Sean's at 47.55 minutes and 20.11km. The shortest in duration and distance was Sylvie's at 9.43 minutes and 1.42km.

Most rides occurred during the day, with four participants (Alicia, Charlie, Cory and Van) conducting their bike rides in the evening. The rides occurred between August 2015 and March 2016. The majority of participants conducted their go-along interview as part of their daily transport needs, for example to a social gathering (Alicia), volunteering (Cory) or travelling to work (Sean, Damian and Lizzie). Amanda chose to undertake a ride specifically for the purpose of the go-along with the route a regular feature in her daily travels.

Table 6.1 Perth: Go-along interview GPS data

Participant descriptor	Date	Start time	Distance (km)	Duration (mins)
Alicia	29/02/2016	7:24pm	8.36	32.67
Amanda	09/11/2015	9:44am	7.69	32.53
Charlie	10/03/2016	7:01pm	3.10	11.51
Cory	01/09/2016	5:54pm	6.85	30.63
Damian	24/11/2015	7:21am	4.18	32.67
Judy	07/11/2015	12:47pm	2.53	13.55
Lizzie	10/02/2016	8:30am	3.13	14.25
Sean	09/11/2015	7:56am	20.11	47.55
Sylvie	14/03/2016	3:32pm	1.42	9.43
Van	19/11/2015	7:04pm	9.19	28.57
Average	-	-	**6.66**	**25.35**

The rides occurred in inner city suburbs between the City of Fremantle in the south and Town of Bayswater in the north, and within approximately 5km of the Swan River (see Map 6.1). The majority (Amanda, Charlie, Damian, Judy, Lizzie and Sylvie) occurred within the Fremantle Area and the remainder conducted their go-along rides in closer proximity to the Perth CBD (Alicia, Cory and Van), or between the Fremantle and Perth areas (Sean). There was some crossover of the routes chosen by the participants, however the majority of the paths taken were unique to each participant and represent a variety of environments.



Map 6.1 Perth go-along interview GPS tracks

6.2.2 Melbourne

The Melbourne go-along interview rides averaged 31.54 minutes in duration and 7.07km in length (see Table 6.2). The longest duration and distance was Penny's at 51.27 minutes and 12.3km. The shortest in duration and distance was Kim's at 6.62 minutes and 1.45km.

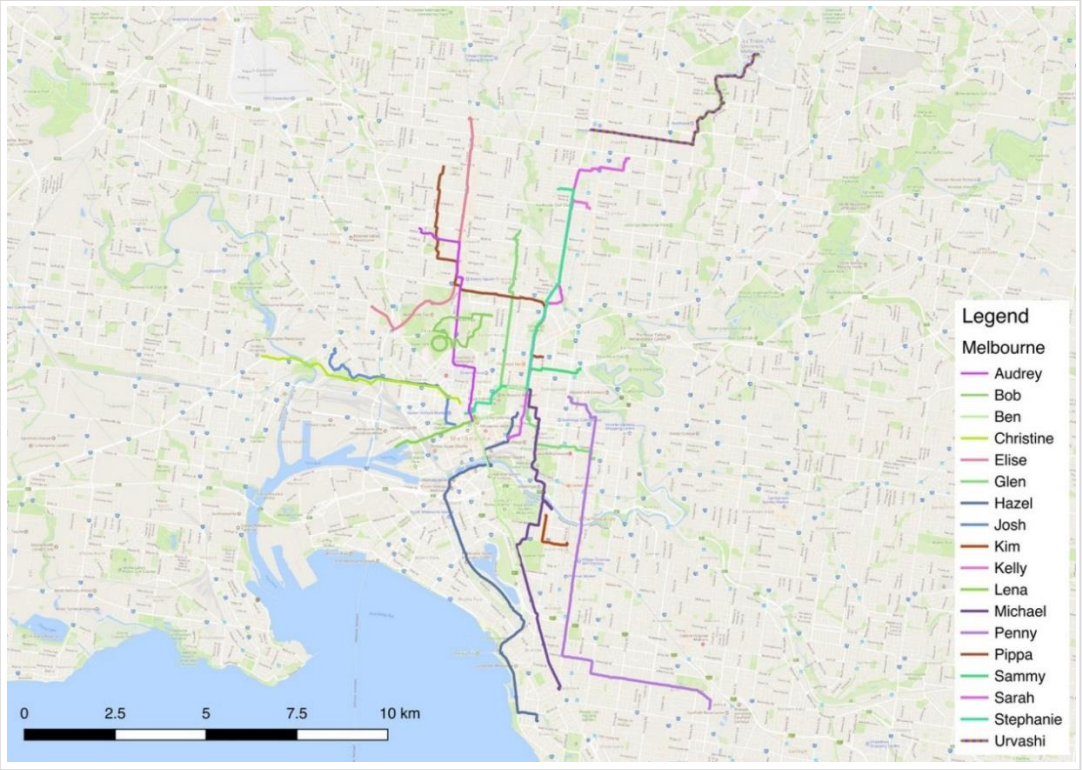
Most rides occurred during the day, with five participants (Audrey, Glen, Michael, Sammy and Urvashi) conducting theirs in the evening. The rides occurred between April and May 2015. The majority of participants conducted their go-along interview as part of their commute to work or study (for example, Kelly, Pippa, Penny, Glen, Stephanie and Sammy). Bob chose to undertake a ride specifically for the purpose of the go-along with the route incorporating elements of his usual daily travels by bicycle.

Table 6.2 Melbourne: Go-along interview GPS data

Participant descriptor	Date	Start time	Distance (km)	Duration (mins)
Audrey	11/05/2015	6:10pm	6.7	38.63
Ben	23/04/2015	7:37am	6.4	28.98
Bob	08/05/2015	2:17pm	6.4	35.63
Christine	16/04/2015	8:36am	5.95	22.05

Participant descriptor	Date	Start time	Distance (km)	Duration (mins)
Elise	30/04/2015	8:45am	7.90	47.33
Glen	26/04/2015	5:50pm	9.04	43.07
Hazel	22/05/2015	12:27pm	11.75	50.02
Josh	11/05/2015	7:56am	5.45	17.83
Kelly	05/05/2015	8:44am	5.9	25.38
Kim	04/05/2015	3:44pm	1.45	6.62
Lena	04/05/2015	4:38pm	2.42	11.25
Michael	23/04/2015	6:00pm	10.30	46.55
Penny	23/05/2015	8:29am	12.3	51.27
Pippa	19/05/2015	8:29am	8.14	28.97
Sammy	23/05/2015	5:08pm	2.24	10.01
Sarah	22/04/2015	8:33am	9.79	45.35
Stephanie	21/04/2015	11:26am	8.2	35.42
Urvashi	20/05/2015	5:20pm	6.84	23.28
Average			**7.07**	**31.54**

The go-along interview rides occurred in inner Melbourne suburbs, from the City of Port Phillip in the south to the City of Darebin in the north (see Map 6.2).



Map 6.2 Melbourne go-along interview GPS tracks

The majority of the rides (Audrey, Bob, Christine, Elise, Glen, Josh, Kelly, Lena, Sammy, Sarah, Stephanie and Urvashi) took place in Melbourne's inner North, with a further three (Hazel, Michael and Penny) either beginning or ending their ride in this area. There was some crossover of the routes chosen by participants, such as on the St Georges Road bike path (Sarah and Stephanie) or the Upfield Line bike path (Elise and Pippa), however the majority of the paths taken were unique to each participant and represent a diverse range of possible routes.

6.2.3 Utrecht

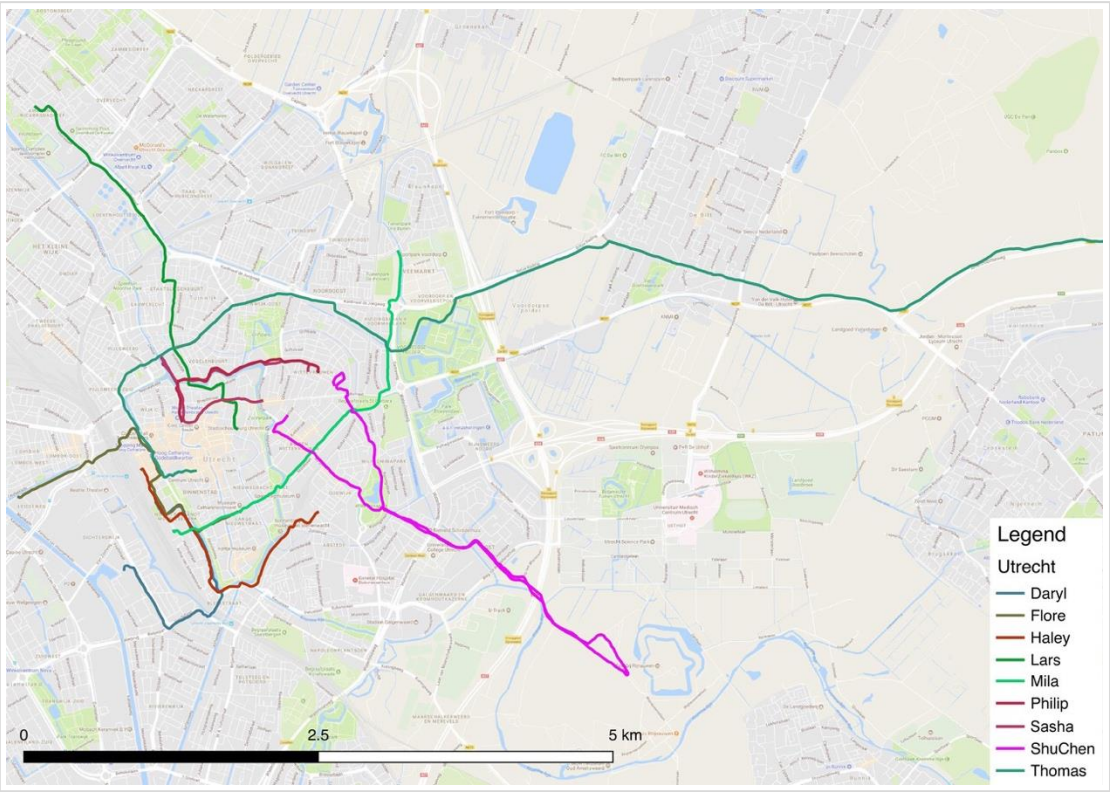
The Utrecht go-along interview rides averaged 16.58 minutes in duration and 4.05km in length (see Table 6.3). The longest duration and distance was Suh-Chen's at 40.89 minutes and 8.43km. The shortest duration and distance was Philip's at 7.42 minutes and 1.7km.

The reason for the participants' journeys included commuting to work (Mila and Lars) collecting a child from day care (Daryl) and visiting a relative (Flora). Two participants (Sasha and Shu-Chen) undertook a bike ride specifically for the purpose of the go-along, both choosing familiar routes they travelled regularly by bicycle.

Table 6.3 Utrecht: Go-along interview GPS data

Participant descriptor	Date	Start time	Distance (km)	Duration (mins)
Daryl	31/07/2015	5:26 PM	2.53	13.55
Flora	29/07/2015	10:18 AM	2.98	12.42
Haley	09/08/2015	6:57 AM	2.69	10.02
Lars	19/08/2015	11:23 AM	3.84	13.68
Mila	19/08/2015	9:46 AM	3.63	15.80
Philip	18/08/2015	10:35 AM	1.7	7.42
Sasha	29/07/2015	8:50 PM	2.89	15.17
Shu-Chen	29/07/2015	9:41 AM	8.43	40.89
Thomas	13/08/2015	10:07 AM	7.8	20.31
Average		**-**	**4.05**	**16.58**

The go-along rides were undertaken including central Utrecht (see Map 6.3), beginning from and ending in a range of directions. The data for one go-along interview (Thomas) is truncated as the route the participant selected exceeded the Utrecht municipality. As with the other case studies, the routes chosen by participants intersect several times, however the majority of the routes are particular to each participant.



Map 6.3 Utrecht go-along interview GPS tracks

6.3 Themes

During preparation for the go-along interview, participants were asked to described to the researcher, via the recording, what they were experiencing as they rode their bike, but given little instruction beyond that. For the purpose of comparison with the semi-structured interview, the go-along interview was designed to further extend the collection of qualitative data by providing maximum autonomy to the participant.

In line with the rationale for using phenomenology as the overarching methodology for this thesis, the purpose of the go-along interviews was to capture participants' experiences of riding a bike as described by them. Consequently, this chapter contrasts with Chapter 5 by deliberately presenting the results to foreground the participants' voices rather than relying on extensive interpretation by the researcher. The purpose of presenting the data in a less processed form is to minimise the potential for inadvertent misrepresentation of the participants' self-expression by the researcher, and to recognise the value of participants' contributions as co-constructors of the research. The themes presented in this chapter have been identified from the free-flow responses of participants during the go-along interviews, and not in response to questions asked by an interviewer.

The themes identified in the transcripts from the go-along interviews across the three case study groups through a process of Interpretative Phenomenological Analysis are identified and explained in the remainder of this chapter. The themes are:

- Vigilance
- Space
- Interaction
- Momentum
- Memory
- Time

Each theme is illustrated with selections from the interview transcripts with minimal interpretation, to retain the voices of the participants and the integrity of the participants' expression of their experiences. The context of the chosen spatial transcript samples is explained, including biographic information about the participant, geographic features nearby or other relevant information from the ride transcript.

6.3.1 Vigilance

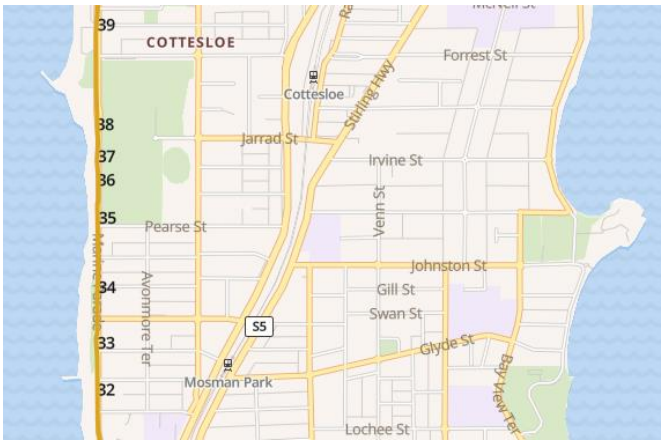
Vigilance refers to the acute attention participants gave to the task of cycling. Participants in Perth and Melbourne were particularly engaged in scanning the traffic to predict driver behaviour, parked cars for occupants opening doors, and pedestrians suddenly walking into the road.

6.3.1.1 Perth

In Perth participants pay close attention to what is happening both on and off the road, constantly scanning and assessing the situation for potential dangers such as colliding with a car door or pedestrian.

The route Sean (Spatial Transcript 6.1) chose for his go-along interview was that of his daily commute from East Fremantle to Perth. A fit and fast rider, he covers the 20.11km in just over 47 minutes. Cycling at the speed he does, it is essential for him to maintain constant vigilance, noticing the things and events he is passing, assessing potential risks and making decisions about whether he needs to respond by changing his behaviour.

Spatial Transcript 6.1 Vigilance, Sean, 48, Draftsperson, Perth



32 Modernist nightmare.

33 Ah, surf rally. Looking out not to get doored, or boarded.

34 Stand up boards, a lot of them. People slipping into and out of wetsuits.

35 Keep up the pace.

36 Maybe I can draft off this car. Far gone.

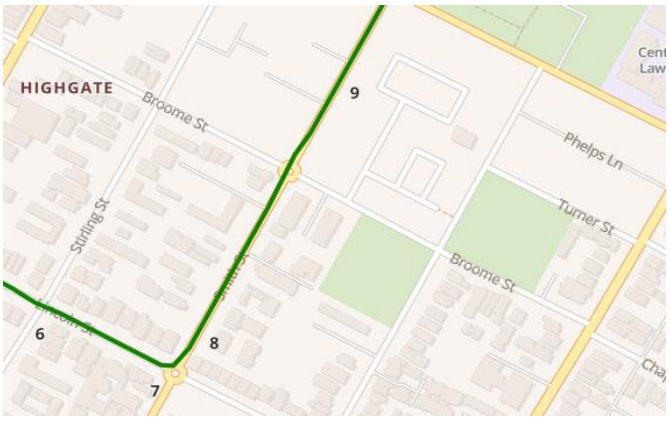
37 Crosswalk's coming. He's on it, he's not on it. I'm through.

38 Sculpture by the Sea. Another time.

39 Fitness group. Boxing, muscles. In the sun.

Cory (Spatial Transcript 6.2) and Lizzie (Spatial Transcript 6.3) show that while cycling they are both watching carefully for the movements of vehicles, car doors opening and pedestrians walking into the road.

Spatial Transcript 6.2 Vigilance: Cory, 36, Handyman, Perth



8 There are a lot of people in cars around. Must be something on at the stadium. A soccer match or something. Which means crazy drivers looking for parking spaces.

9 Lots of people just stepping out on the road without really looking.

Spatial Transcript 6.3 Vigilance: Lizzie, 39, Cultural Development Practitioner, Perth

21 So this is where it starts to get a bit busier going into town, and a bit more, you're certainly much more focused on the road, and on the vehicles.

As examples of vigilance, these spatial transcripts show Perth participants to be on the lookout for cars and pedestrians, but also mentally assessing the situation as they move, scanning the environment to create an ongoing inventory of potential threats that may need to be addressed.

6.3.1.2 Melbourne

The Melbourne participants' vigilance was displayed through constant scanning of the urban environment, attempting to predict the movements of pedestrians and other traffic.

Christine (Spatial Transcript 6.4) shows her awareness of a truck coming up behind her as she reaches a poorly surfaced and narrowing section of road. She responds quickly, moving out of the way to the footpath:

Spatial Transcript 6.4 Vigilance: Christine, 28, Web Consultant, Melbourne (1)

14 Usually a good cycle along here, not much traffic. Not going west, anyway. I love going the opposite direction to peak hour.

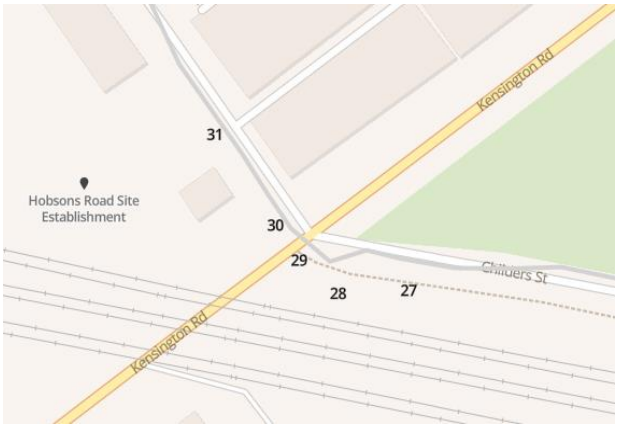
15 Oh, really bumpy here. And there's a big truck coming up behind me here, and the road is narrowing.

16 There's barely any bike lane here.

17 Time to get on the footpath.

The requirement to stay focused and wary of risks while cycling in Melbourne is mentally draining. In the below from Christine (Spatial Transcript 6.5) and Kim (6.6) the stress associated with constant vigilance for intrusions into a cyclist's path is obvious, made worse in both cases by the bike lane being blocked by parked cars:

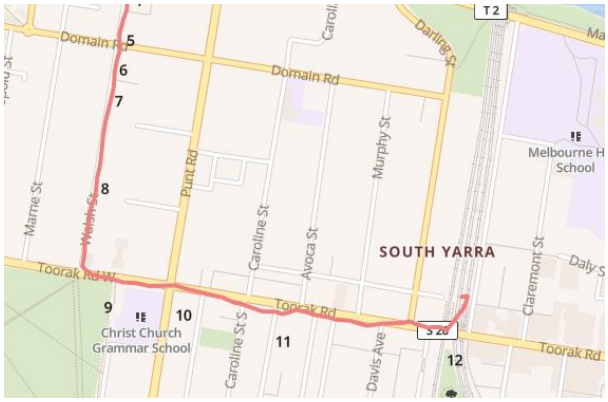
Spatial Transcript 6.5 Vigilance: Christine, 28, Web Consultant, Melbourne (2)



30 I'm always a bit worried someone's going to turn right or left on top of me here.

31 There we go, here's a lady just sitting in her car in the bike lane [dings bell]. It's a bike lane! Not for parking!

Spatial Transcript 6.6 Vigilance: Kim, 43, Teacher, Melbourne



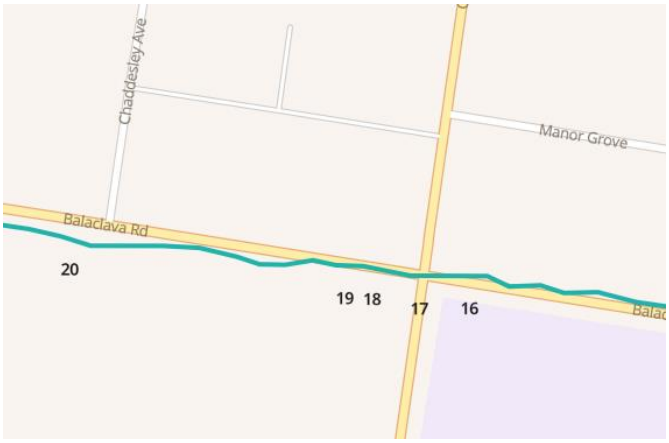
7 The people who park on both sides of the road, it makes it very tricky to get through with the cars coming the opposite way. They take up a bit of room.

8 Argh, road works, yuck, ow ow ow, bump, OK. Ah, seriously. Come on, you can't be stopping there, no. Now I have to go around cars, around cars, in between cars, just because someone has blocked my bicycle lane. No, no don't. See, that's just pulling out in front of me, that's just dumb. Ah, you're kidding. Alright.

9 Rightio, I hate this road, I hate it, ah don't walk out in front of me, don't walk out in front of me [dings bell several times], you're kidding. Jesus, bloody hell. No, don't walk out in front of me! Oh for God's sake. I'm in bright, radioactive orange, how can you not see me? Jesus.

Vulnerable and exposed on her bike, Penny (Spatial Transcript 6.7) is also stressed, affected by the chaos of a minor car crash. She maintains a careful watch of the other road users, and resolves to just keep on riding:

Spatial Transcript 6.7 Vigilance: Penny, 29, Library Support Officer, Melbourne

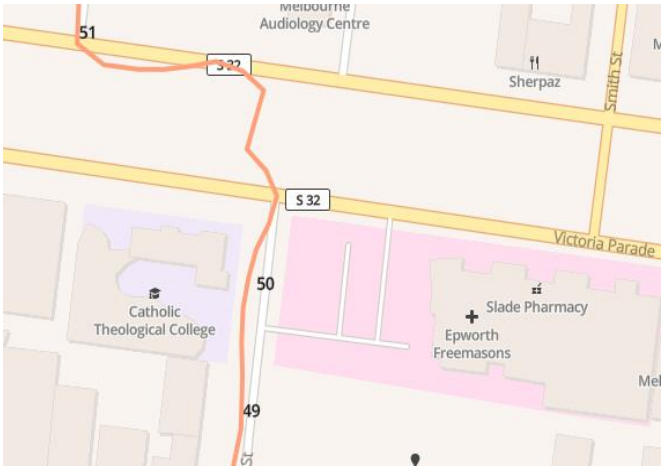


19 Woah! [car beeps] someone just ran into the back of someone else. I know I'm not supposed to talk about traffic but there's some angry folk there. I'm just going to keep on riding. I think I must have picked a crazy morning for this. Now I've got a garbage truck. It's pretty funny. It's not that funny.

20 I feel stressed, I'm already late for work and this is making it that much worse. Um, right. I'm on my way.

Glen's go-along ride (Spatial Transcript 6.8) illustrates how crossing busy, wide intersections such as at Victoria Parade in the inner North suburb of Fitzroy requires a high level of vigilance for cyclists to account for a range of vehicle modes and associated speeds:

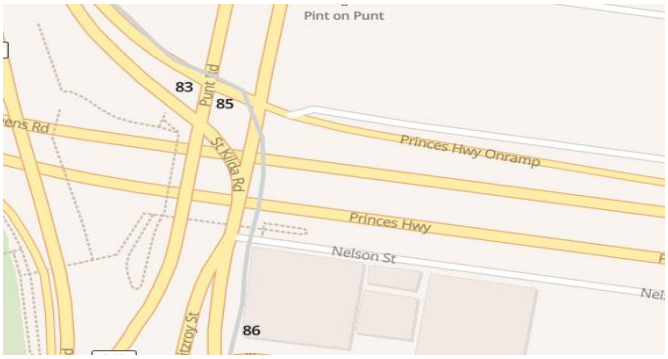
Spatial Transcript 6.8 Vigilance: Glen, 57, Town Planner, Melbourne



50 I'm just pulling up at Victoria Parade. The inbound lanes going over a curb, a bluestone curb, over a bit of poorly formed bit of path. Stopping for a tram, the tram's going whizzing past. Stopping in the middle of Victoria Parade, between the tram lines. Rolling along the footpath, watching for a break in the traffic to get across the outbound lanes of traffic in Victoria Parade, with a jogger ahead, and the jogger is crossing at the same time that I do.

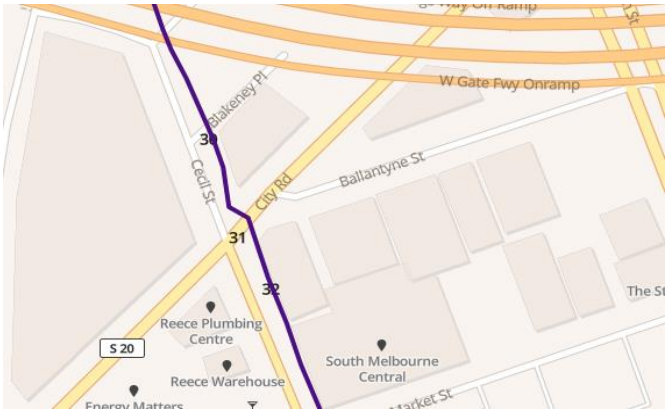
Several participants mentioned their fear of being struck by someone opening the door of a parked car into their path, an increasingly common source of injury for cyclists in busy shopping streets in Melbourne. Michael (Spatial Transcript 6.9) and Hazel (Spatial Transcript 6.10) both describe their concerns, with Hazel finding her preoccupation with a truck driver not looking before opening his door leading her to almost have a collision with another vehicle:

Spatial Transcript 6.9 Vigilance: Michael, 37, Transport Planner, Melbourne



85 So on this route home, I probably cycle past, I wouldn't be surprised if it was over 150 car doors. They're probably the biggest concern I have. Because it's 150 opportunities for someone to open a door right in front of me.

Spatial Transcript 6.10 Vigilance: Hazel, 26, Master Student, Melbourne



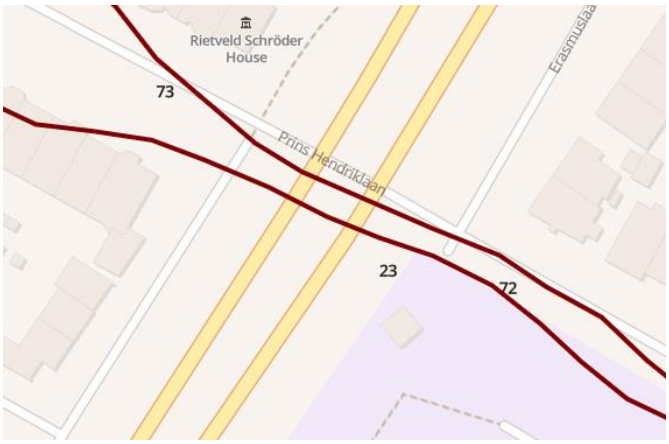
30 Another truckie didn't look before he opened his door. Oops! I nearly hit a car!

6.3.1.3 Utrecht

In Utrecht the participants' rides were on the whole calmer than in Perth and Melbourne, however they did occasionally need to pay closer attention to cycling when negotiating space with other cyclists, particularly at intersections. The actions of car drivers were of less concern. Compliance with road rules such as stopping at red lights was seen as optional, with cycling in practice following a guide of giving responsibility to drivers to act with caution, and trusting other cyclists to be accommodating.

Shu-Chen (Spatial Transcript 6.11), still relatively new at cycling in Utrecht, was apprehensive about negotiating road space with a turning cyclist. Lars (Spatial Transcript 6.12) explained that lack of rule-following in Utrecht can make it more difficult for drivers to navigate, and so reinforces cycling as the easier transport mode.

Spatial Transcript 6.11 Vigilance: Shu-Chen, 42, Social Worker, Utrecht



72 See I get scared a little bit because there's a cyclist trying to turn left and I almost have a crash but then he managed to wait.

Spatial Transcript 6.12 Vigilance: Lars, 30, Social Worker, Utrecht

30 I have to pay attention and not get into an accident. Actually I can only turn right here, but I have to turn left. That's also a thing about riding a bike, everybody is ignoring the rules. It's really annoying when you ride [sic] a car in the city centre because you always know that bicycles don't always ride by the rules but yeah that's how things go. It's quite an advantage when you are riding a bike.

Mila (Spatial Transcript 6.13) gets “moody” if other cyclists aren’t paying attention at busy intersections. Her response is modest compared with the stress displayed by Kim in Melbourne as she maintains a hyper-alert state negotiating share road spaces (Spatial Transcript 6.6).

Spatial Transcript 6.13 Vigilance: Mila, 35, Web Designer, Utrecht

42 You can't see, right before you cross the street in the city centre if someone is coming, so you have to pay attention and hope everybody else does too. And they don't, of course, so that can get me moody!

6.3.2 Space

The quality of space was an important determinant of how participants experienced their go-along ride. Factors included how much space was available to the cyclists when sharing the road or path with others, as well as the presence of greenery, pleasant views or favourable weather. In Perth and Melbourne, the participants were able to enjoy what they were sensing, even just to notice it, when traffic levels were reduced. When in heavily trafficked areas, the cyclists’ main task was focusing on navigating their way around and negotiating space with other road users. Utrecht participants seemed to have the most comfortable experiences of space, largely due to the cycling infrastructure being separate from other modes. For these participants, space free from other cyclists was most highly valued.

6.3.2.1 Perth

In Perth the presence of traffic in or near the space that the participants cycle in is almost always regarded as a negative experience. In both cases they are in close proximity to noise, pollution and danger. The cyclists’ personal capacity and sensibilities affect how they respond to such spaces.

Sharing space with motorised traffic is stressful for Judy (Spatial Transcript 6.14), who moves out of the way of the car traffic onto the footpath, only to have to move again because the

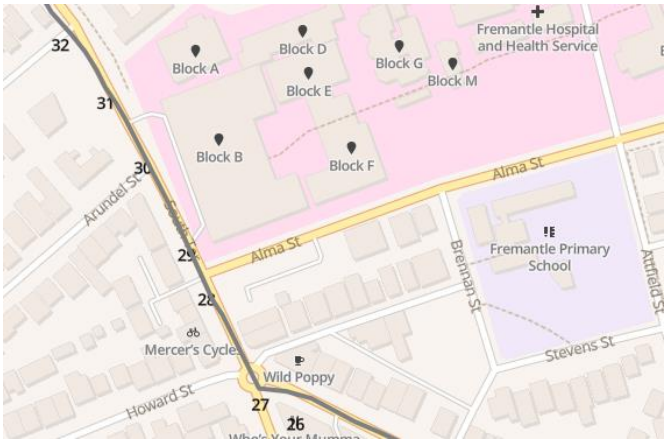
space is being taken up by people outside cafes. For Lizzie (Spatial Transcript 6.15) the close proximity of a passing bus is a fully embodied and frightening experience, highlighting that sharing space with motorised vehicles elicits feelings of discomfort and fears for bodily safety.

Spatial Transcript 6.14 Space: Judy, 35, Accounts Manager, Perth

17 I'm using the pedestrian crossing while riding my bike, because the intersection of South Terrace and South Street is another kind of every man for himself intersection, and there's no cycle way, so when all the cars merge it's likely that a car on the left will run against the curb for a while, just so they can wait intersection, and there's no cycle way, so when all the cars merge it's likely that a car on the left will run against the curb for a while, just so they can wait for someone to let them in.

18 I'm going to have to go on the road because there's so many cafes.

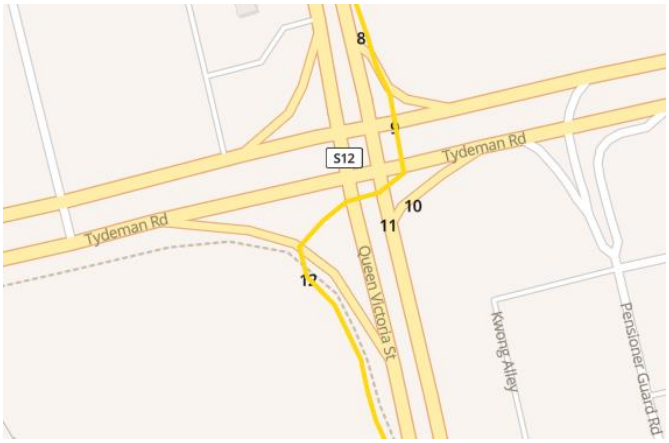
Spatial Transcript 6.15 Space: Lizzie, 39, Cultural Development Practitioner, Perth



30 You feel it, you feel it in your body, when you've got a massive bus that's half a metre away, it's just insane.

For Damian (Spatial Transcript 6.16), the noise of the traffic increases his desire to quickly move through the intersection. However, even when he reaches the relative separation of the footpath (Spatial Transcript 6.17), the proximity of the traffic means his experience of his cycling space is still uncomfortable, though he muses he is glad he is not “trapped in a box” like the drivers.

Spatial Transcript 6.16 Space: Damian, 37, Artist (1)

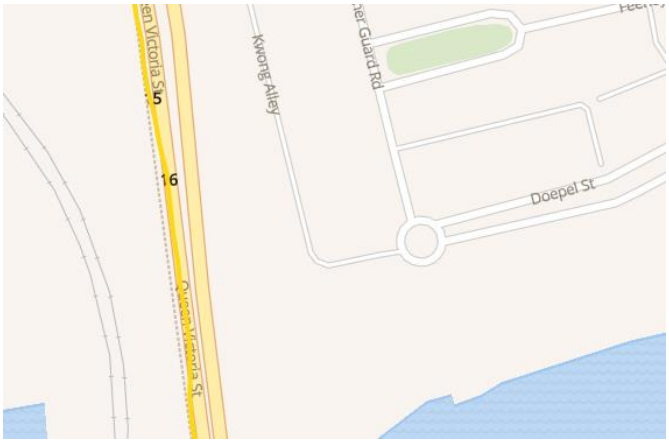


10 This is pretty noisy here at this intersection. There's four lanes of traffic each direction. There's a lot of big trucks from the port, buses as well.

11 Just going to cross over this first section here and that's great, I can cross over here as well so I just need to go in the other direction, there's a green light.

12 It's going to be good to get out of here. It's really noisy and congested and not very nice.

Spatial Transcript 6.17 Space: Damian, 37, Artist (2)



16 I guess because I'm on the right hand side of this two-way road, there's cars coming straight towards me, even though I'm on the footpath. I feel safe, but it's not very nice, you know. But I'm glad I'm not trapped in a box like these guys. Haven't really seen anyone in their cars smiling

Amanda (Spatial Transcript 6.18) describes her choice of using the footpath so she doesn't need to share space with cars on the road. She however explains this choice comes with its own risk of being struck by drivers reversing from driveways.

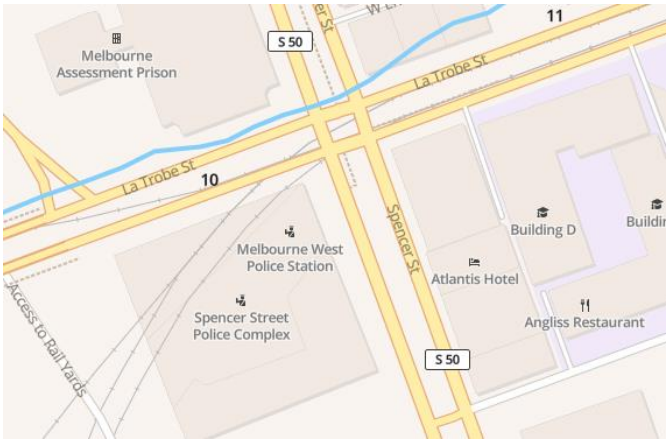
Spatial Transcript 6.18 Space: Amanda, 42, Disability Services, Perth

16 Always watch it on South Street. I ride down the pavement. You have to watch the cars coming out of their driveways, as once a car did come out while I was riding past, and we had a little crash although it was all OK.

6.3.2.2 Melbourne

In Melbourne, the participants' experience of space was dependent on the situation they found themselves in as many factors could affect their response in the moment. For Lena (Spatial Transcript 6.19) and Ben (Spatial Transcript 6.20) traffic congestion created a situation where they were more automobile than the car drivers, using the opportunity to filter past the cars to the front.

Spatial Transcript 6.19 Space: Lena, 41, Lecturer, Melbourne



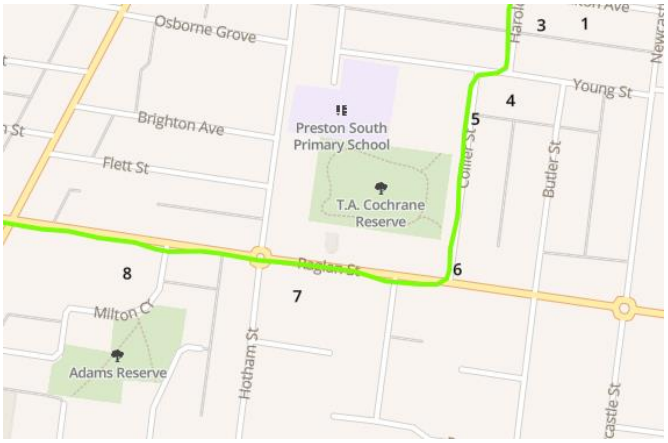
10 Nice. Clogged up traffic, [laughs], riding past cars, nice.

Spatial Transcript 6.20 Space: Ben, 31, Planner, Melbourne

11 I'm stuck here at Commercial Road in St Kilda. As always happens, the bike facility just disappears here. We'll see what happens. I'll probably try and creep through in the left lane. There's no cars behind me. Try and get to the front of the queue and slip through. Not a good situation for cyclists who aren't particularly confident. Luckily there's no car behind me so I should be alright so I shouldn't have any issues getting through without conflict.

For Sarah (Spatial Transcript 6.21), assertively claiming the centre of the lane prevented car drivers from attempting to overtake her where there wasn't sufficient space. Interestingly, she says that this is "fairer to everybody on the road", indicating she values actions that are clear and comprehensible for others, and is actively extending courtesy to other road users, even if her actions might suggest the opposite.

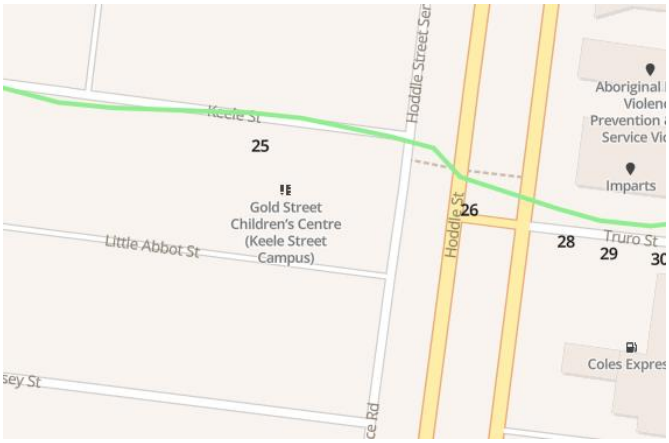
Spatial Transcript 6.21 Space: Sarah, 36, Architecht, Melbourne



7 I'm going through the roundabout, and I always ride right in the middle and take the roundabout, because I just think it's fairer to everybody on the road. You don't want a car to try and overtake you in the middle of a roundabout, and getting out of it is always a bit hairy if you're squeezed against the edge and there's also cars in there.

The condition of the road surface can also have consequences for how a cyclist responds in the moment. For Sammy (Spatial Transcript 6.22), the uncomfortable road surface leads her to shift position to the centre of the road, where she then finds herself concerned about how to share the space with cars. She is relieved that in this instance she has the space to herself, and is free from negotiating with drivers:

Spatial Transcript 6.22 Space: Sammy, 37, Youth Worker, Melbourne



25 This road, this bit of the road, it's quiet but the surface is shit. I hate it. So I end up sort of riding the bit in the middle. Particularly when I've got stuff in panniers that I don't want to kind of jump around too much.

26 It's kind of not ideal to ride in the middle of the road because cars don't really dig that too much. Luckily there isn't a car here now.

6.3.2.3 Utrecht

In Utrecht, the separated, comfortable infrastructure gave participants overall much higher levels of comfort throughout the length of their ride and generally a high quality of experiencing space. As shown by Haley (Spatial Transcript 6.23), the Utrecht participants most enjoyed space away from other cyclists. Similarly, Mila (Spatial Transcript 6.24) shows some relief at not having to share the cycle path with “streams of cyclists”.

Spatial Transcript 6.23 Space: Haley, 25, Education Outreach, Utrecht

17 I actually like going this early because I feel like I have the whole street, the whole canal, to myself.

Spatial Transcript 6.24 Space: Mila, 35, Web Designer, Utrecht

22 This is a point that can be very busy, crowded with streams of cyclists, but I'm a bit later now so it's ok.

6.3.3 Interaction

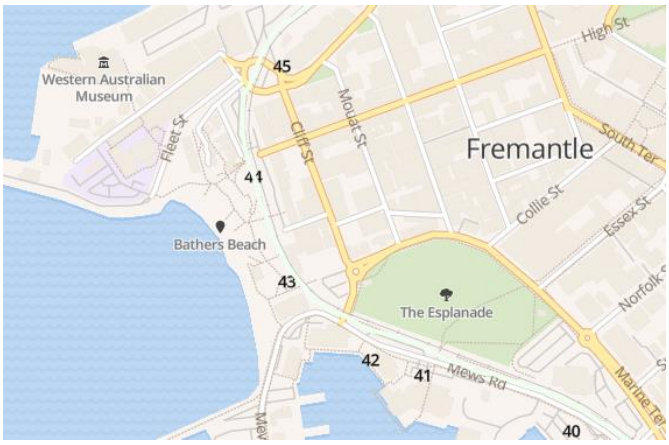
Interaction with other road users was a theme in the semi-structured interviews, and appears again with the go-along. The theme is stronger in Perth and Melbourne where cyclists are more likely to be sharing road-space with other transport modes. The communication the participants describe is often threaded with concern about how their actions are perceived by other road users, and a desire to make a good impression, particularly with pedestrians. Interactions with car and truck drivers have a dual purpose of maintaining positive relations, and making sure the cyclist is seen and therefore safe from harm a vehicle might cause.

6.3.3.1 Perth

In Perth, the participants are keen to maintain friendly relations with pedestrians, whether engaging in general politeness or being sure to make their presence known to avoid altercations. Cycling also offers the possibility of spontaneous meetings with friends, and occasional kind words from passing motorists.

Amanda (Spatial Transcript 6.25) displays this good-will toward pedestrians, thanking them for moving aside while she rides on the shared path. Alicia (Spatial Transcript 6.26), also on a shared path, muses that the bell-ring is not nuanced enough to convey politeness rather than urgency. Cory (Spatial Transcript 6.27) sees ringing his bell as a warning to pedestrians of his approach as a process of education of pedestrian bike awareness.

Spatial Transcript 6.25 Interaction: Amanda, 42, Disability Services, Perth

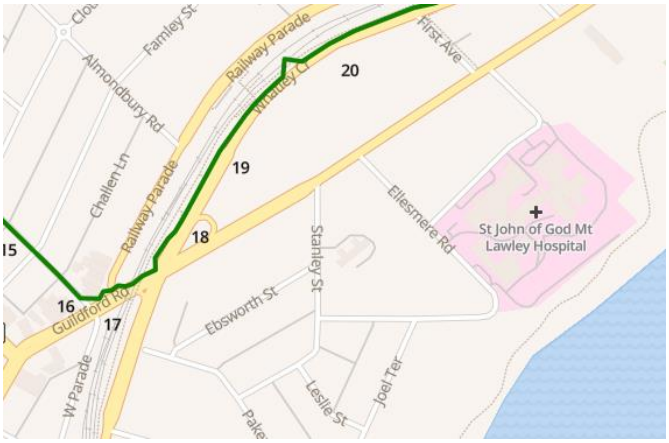


44 Thank you! Thanks! Always get some tourists around the Roundhouse enjoying the day.

Spatial Transcript 6.26 Interaction: Alicia, 34, Lecturer, Perth

49 I wish there was a special ding you could make on your bicycle like "you don't need to scoot out of the way, I'm just letting you know that I'm here so you don't freak out".

Spatial Transcript 6.27 Interaction: Cory, 36, Handyman, Perth



20 Trying to ding the pedestrians. I'm not convinced that dinging the pedestrians is a net safety positive considering how many of them freak out and step right when you try and go around them. But, they want us to do it, and I guess if enough of us keep doing it then they'll learn not to step right when they hear a ding.

Damian (Spatial Transcript 6.28) describes how the openness and slow speed of the bicycle relative to most other transport modes also allows for the possibility of a chance meeting with a friend. Positive interaction was also occasionally experience with car drivers, as per Sylvie's (Spatial Transcript 6.29) experience struggling up a steep hill with a heavy load.

Spatial Transcript 6.28 Interaction: Damian, 37, Artist, Perth

57 When I was riding here yesterday I saw my friend Jenny, who was just walking past and said hello. It's great when you're on a bicycle and that happens, you can just stop and say hello to someone.

Spatial Transcript 6.29 Interaction: Sylvie, 33, Counterhand, Perth

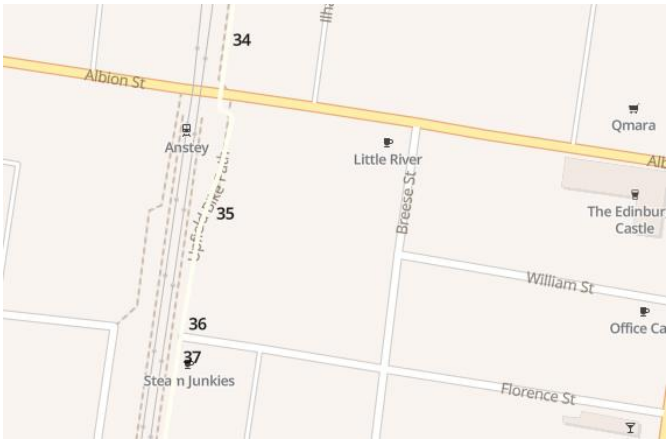
17 I just got encouragement from a lady in a red car to keep on going. In a little beetle.

6.3.3.2 Melbourne

The Melbourne participants more often interact with pedestrians than other road users, usually to warn of their presence though on one occasion at least, also to chat about the football. Again, as in Perth, the participants are careful to ensure their interactions with pedestrians are friendly in order to contribute to a favourable reputation for the cycling community.

Elise (Spatial Transcript 6.30) explicitly states she tries to be polite, to make up for the bad interactions pedestrians may have already had with cyclists. Stopped at traffic lights, Sammy (Spatial Transcript 6.31) notices a pedestrian dressed up and inquires if they are on their way to watch the football, which is happening at a nearby oval.

Spatial Transcript 6.30 Interaction: Elise, 37, PhD Student, Melbourne



37 Very charming and polite pedestrians. I think cyclists have got a little bit of a reputation for being jerks, and being road hogs, which I think is completely unjustified. But, I do always try to be polite to people who obviously do the right thing by standing to the side or by noticing that you're there, and try to make up for the bad interactions they may have with cyclists yelling at them for being in the way. You never know, maybe it will do some kind of PR [Public Relations] good. What do they say? It takes ten positive interactions to make up for one negative.

Spatial Transcript 6.31 Interaction: Sammy, 37, Youth Worker, Melbourne

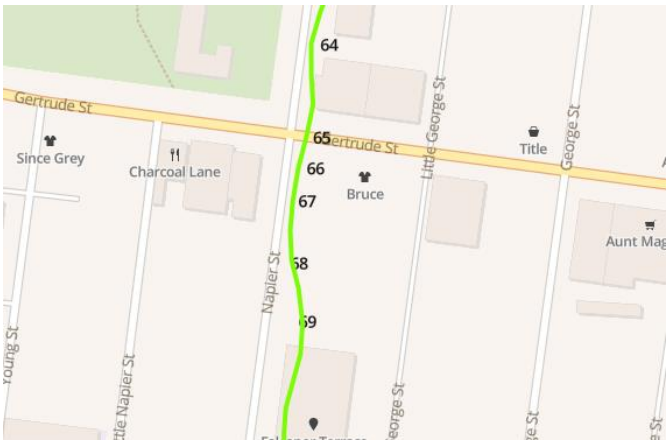
32 Going to the footie? Going to the footie are you? Is it Richmond who's playing? What do you reckon your chances are? Yeah? Cool.

Interactions with drivers do occur, though at times it is the lack of interaction that is experienced as disappointing. Michael (Spatial Transcript 6.32), who narrowly escapes a collision with a motorist, is further frustrated by her lack of acknowledgement that the incident took place. Sarah (Spatial Transcript 6.33) describes a friendly moment with a polite truck driver, but notes that there have been “no mean people so far this ride”, suggesting that it is usual to have less friendly interactions.

Spatial Transcript 6.32 Interaction: Michael, 37, Transport Planner, Melbourne

69 I'm a little bit frustrated because that woman who nearly went into the side of me, the thing that frustrates me is that she didn't really acknowledge that she did anything wrong, when she didn't look and just manoeuvred straight into where I was. If she'd acknowledge that she's stuffed it up and should have looked, I would have been a bit happier about it.

Spatial Transcript 6.33 Interaction: Sarah, 36, Architect, Melbourne



67 The lights just changed and then a nice truck driver slowed down, and made a hand-signal to me that I could cross.

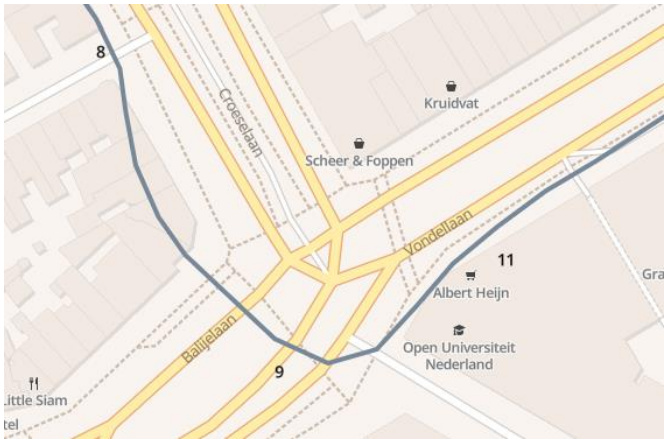
68 I've got no mean people so far this ride, this is very good. Very civilised.

6.3.3.3 Utrecht

The separation of transport modes through infrastructure in Utrecht has produced a situation whereby there are less opportunities for interaction with other road users than in Perth and Melbourne. Here, the minimal interactions Utrecht participants had with others are presented, including reactions to the rule breaking of other cyclists, and the caution applied by driver when interacting with cyclists, and the anonymity afforded to cyclists in Utrecht due to their ubiquity.

Daryl (Spatial Transcript 6.34), from Australia, interestingly seems to hold similar views regarding policing of other cyclists expressed by participants in Perth and Melbourne. While he doesn't explicitly interact with these red-light running Dutch cyclists, Daryl is affected by their behaviour, reacting internally.

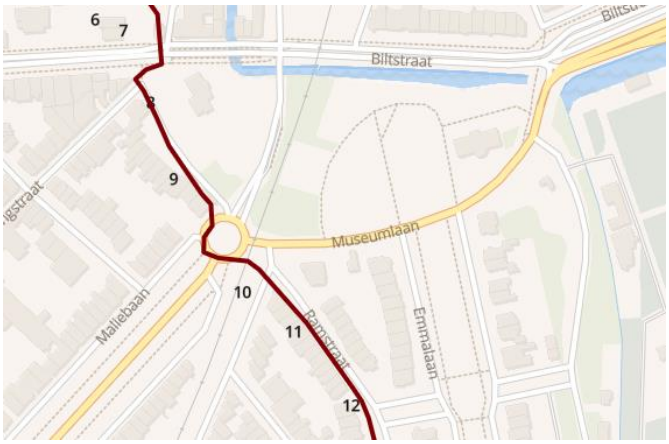
Spatial Transcript 6.34 Interaction: Daryl, Sports Optometrist, Utrecht



8 Come to a traffic light now, which sometimes fires me up a little bit because a lot of the time the Dutch people go right through them. Gets my righteousness fired up a little bit, you know.

Shu-Chen (Spatial Transcript 6.35) suggests that her nervousness upon first arriving to Utrecht regarding cycling with cars is now allayed, as drivers must give way to cyclists. Understanding the legal as well as cultural requirements regarding interactions between motorists and cyclists has made her feel more comfortable with her interactions with drivers. In one of the few direct personal interactions mentioned by the Utrecht participants, Haley (Spatial Transcript 6.36) acknowledges "the nice construction lady" she sees daily and says hello to.

Spatial Transcript 6.35 Interaction: Shu-Chen, 42, Social Worker, Utrecht



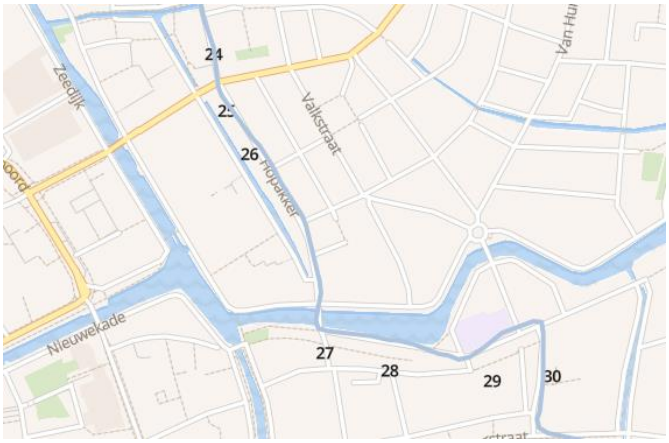
9 Now it's getting busy at this intersection, a little bit. So before when I cycled here I was often nervous because of the cars. It took me a while to figure out that a car has to yield to you otherwise they are in trouble.

Spatial Transcript 6.36 Interaction: Haley, 25, Education Outreach, Utrecht

25 There's the nice construction lady that I say hello to in the morning. I think her job is just to stand there and kind of monitor people, mainly bikers going through.

Lars (Spatial Transcript 6.37) appreciates and feels safe in the anonymity that seems to come from being one of thousands of cyclists in Utrecht. In the context of his interviews, saying "nobody is noticing you", refers to the small likelihood of being apprehended by the police, or even receiving disapproval from members of the public, for noncompliance with road rules or generally non-ideal cycling behaviour.

Spatial Transcript 6.37 Interaction: Lars, 30, Social Worker, Utrecht



26 Riding a bike in this big city where everybody rides a bike feels quite safe, quite anonymous. Nobody is noticing you, you can ride wherever you want.

If for Shu-Chen (Spatial Transcript 6.35) the caution displayed by car-drivers in the Netherlands was welcome, for Mila (Spatial Transcript 6.38) it was sometimes frustrating. Here, she expresses annoyance at having to increase her speed riding up a hill, because through showing courtesy, the car driver is now waiting on her.

Spatial Transcript 6.38 Interaction: Mila, 35, Web Designer, Utrecht

16 Oh, there's car stopping for me. I'll speed up a bit. Yes. I don't like that, when they stop and I have to cycle uphill a bit, so I'd rather they'd just go about and not stop when I'm far away still.

6.3.4 Momentum

In all three case study cities, maintaining momentum was seen as a very important element of positive cycling experiences. Flow and rhythm were also used several times to describe optimal cycling conditions. Participants expressed a strong desire to keep moving and frustration when they were slowed or stopped.

6.3.4.1 Perth

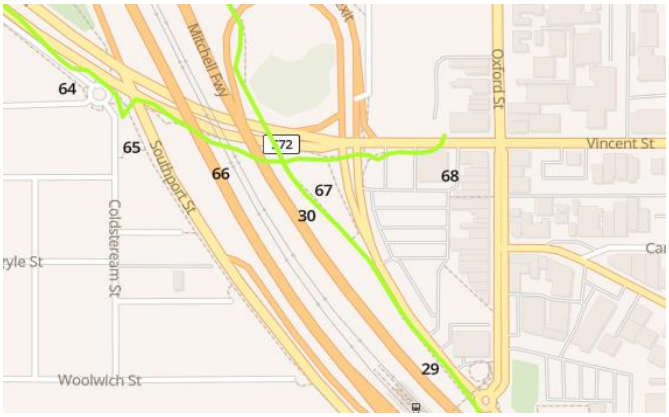
In Perth, participants often find the infrastructure does not fit their needs, such as requiring or causing unnecessary delay. For Sean (Spatial Transcript 6.39), a sign mandating that bikes be walked at a railway crossing was ignored and seen as an unreasonable request given the short distance and inconvenience of unclipping his cycling shoes from the pedals.

Spatial Transcript 6.39 Momentum: Sean, 41, Draftsperson, Perth

59 Dismount? I don't think so. Clip on, clip off, walk, for what, 2 metres?

For Alicia (Spatial Transcript 6.40), her momentum was impeded for too long, waiting for the traffic lights to change in favour of cyclists. At a noisy freeway underpass, after assessing the risks she eventually takes off while the light is still red.

Spatial Transcript 6.40 Momentum: Alicia, 34, Lecturer, Perth



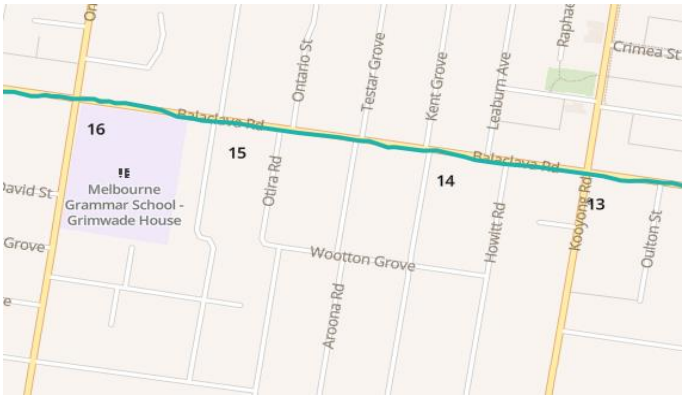
65 Waiting at the light. At least there are bike lights. Come on bike lights. I want pizza, bike lights! Oh you're not going green. Still not green. Still not green, but I'm going anyway because no one's going left and that's the only light that's green for those guys. Haha, police, don't arrest me!

6.3.4.2 Melbourne

Most Melbourne participants enjoy their ride when they are able to reach and maintain a constant rhythm and speed. While road infrastructure plays a key role in whether or not the momentum of cyclists is supported, the cyclists themselves employ tactics for overcoming its shortfalls.

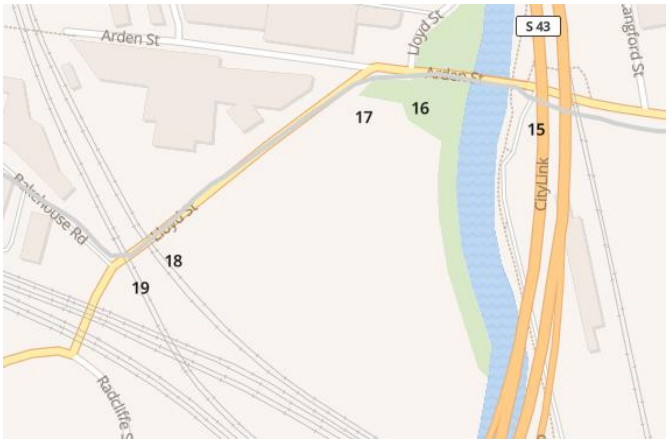
Warming to her morning commute after a sleepy start, Penny (Spatial Transcript 6.41) is finally feeling good, indicated for her by having gotten into a rhythm with her ride. Intersections present a frequent impediment of momentum in Melbourne, and the participants had a range of strategies for managing them. Christine (Spatial Transcript 6.42) pedals fast so she can catch the green light and maintain the speed she's generated riding downhill.

Spatial Transcript 6.41 Momentum: Penny, 29, Library Support Officer, Melbourne



15 Feeling good now, got a rhythm flowing, a slow rhythm mind you, but a rhythm all the same.

Spatial Transcript 6.42 Momentum: Christine, 28, Web Consultant, Melbourne



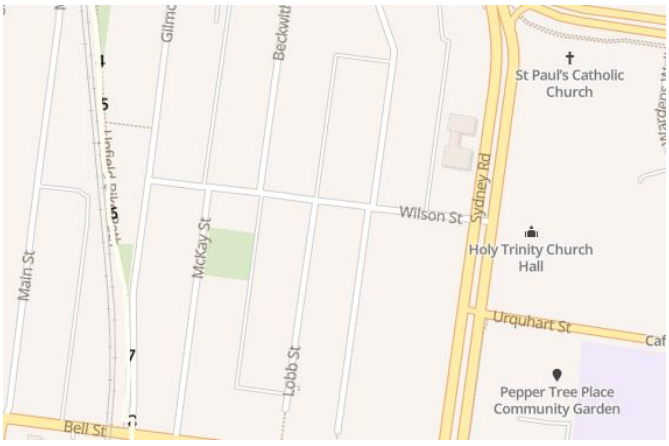
8 Woohoo! I can get through that intersection without having to stop, I can fly through downhill.

Taking the back streets is another option, as Pippa (Spatial Transcript 6.43) laments she didn't do this time. Finally, Elise (Spatial Transcript 6.44) when using the Upfield Line bike path, tries to keep up with the train on the parallel tracks to make all the level crossings and not have to otherwise stop for the car traffic.

Spatial Transcript 6.43 Momentum: Pippa, 37, Bike Mechanic / Nurse, Melbourne

18 Another long crossing. I'm so impatient. But that's the reason why I normally take the backstreets as opposed to some of the bike paths.

Spatial Transcript 6.44 Momentum: Elise, 37, PhD Student, Melbourne



5 I'm going through Coburg. This bit, there's a lot of intersections, I've got to cross a lot of roads. If you get the run right you can coincide with a train and chase the train down. If you cycle seriously fast you can keep up and just zip past the level crossings, which is excellent. Sunday, obviously there are few trains so you're less likely to get that and the Sunday traffic has started, so these intersections are going to get a bit hairy.

6.3.4.3 Utrecht

In Utrecht, as with Perth and Melbourne, the participants were keen to keep moving once they were on their way. Maintaining momentum was seen as an important factor in how the ride was experienced, and journey with minimal interruption was favoured.

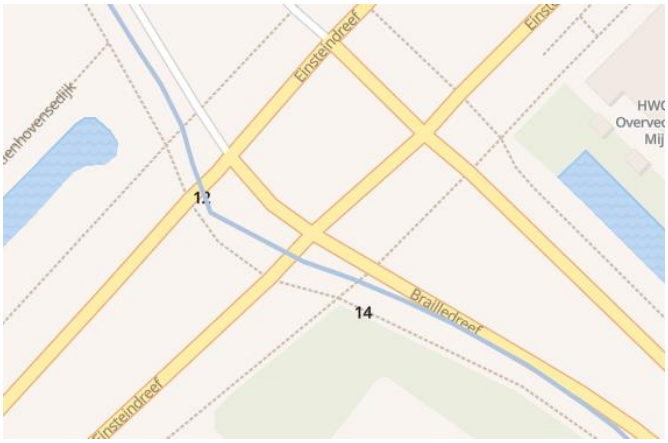
The desire to keep moving is recognised in the *Utrecht - We All Cycle Action Plan*, as the municipality pledged to minimise wait times for cyclists during the reconstruction works near the city centre. Here, Thomas (Spatial Transcript 6.45) appreciates the *Action Plan* in practice in the form of a continuous green light for cyclists.

Spatial Transcript 6.45 Momentum: Thomas, 47, Civil Engineer, Utrecht

51 Wow, travelling through the reconstruction working and I see finally they decided to enhance, improve, the bike path. The nice thing of the reconstruction work is that the traffic lights here are green for bikes continuously.

A common moment in the Utrecht go-along interviews is when the research participants become impatient waiting on a red light, and just go straight through. Rule-breaking of this kind is very much connected to the participants' desire to avoid disrupting the momentum of the ride. Lars (Spatial Transcript 6.46) and Flora (Spatial Transcript 6.47) have little inclination to stop at red lights. While Flora ignores the red light she does reflect on the legalities of doing so, though is disparaging of "people who follow the rules so much". For Mila (Spatial Transcript 6.48) the incursion of a pedestrian into her path forces her to slow down, just at the moment she was enjoying gaining momentum rolling downhill.

Spatial Transcript 6.46 Momentum: Lars, 30, Social Worker, Utrecht



12 Now I'm at the traffic lights, I avoid traffic lights as much as possible, but this one is not possible to avoid, so I have to stop at the red light. Wondering if I should ignore the red light or not. But as the last car is moving by, I'm going through the red light.

Spatial Transcript 6.47 Momentum: Flora, 28, Student, Utrecht

10 Here is a red light, which I ignore. And I always think about the one time the woman ignores the red light and got into trouble, but the problem with this red light is it's useless. I get really angry at the police. I don't like people who follow the rules so much, so I always think about that moment with this red light.

Spatial Transcript 6.48 Momentum: Mila, 35, Web Designer, Utrecht

45 And I'm going downhill, let's speed up a bit. Oh, somebody crosses the street, right when I wanted to speed up!

6.3.5 Memory

Certain land marks, familiar corners or sections of routes trigger memories for the participants that are often as vivid a part of their cycling experience as their reflections on what is happening in the present moment. Familiar parts of routes may consistently evoke the same memories. For those participants who have lived in a particular city for a large part of their life, their daily travels by bike are through richly storied temporal and physical landscapes.

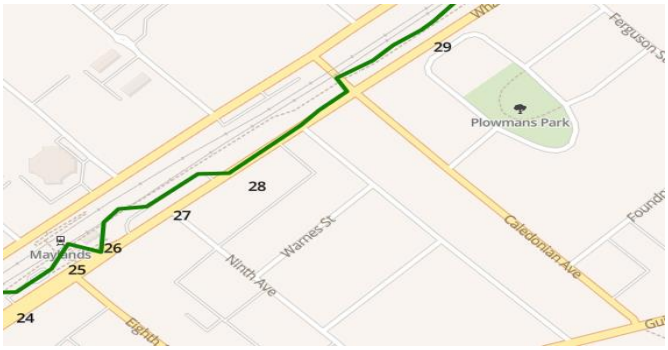
6.3.5.1 Perth

For the participants in Perth, locations associated with particular events as well as sensory input trigger memories and shape their experience. Alicia (Spatial Transcript 6.49) explained how riding her bike had given her time to think about how to write sections of her PhD thesis. Now, this shared path around Lake Monger is full of her memories from that time. As Cory (Spatial Transcript 6.50) reaches a particular section of path he is reminded of a friend's collision with a car, and subsequent injuries. For Charlie (Spatial Transcript 6.51), however, it is sensory input in the form of brewery smells wafting across the path that reminds him of the beer he is looking forward to at the end of his commute home from work.

Spatial Transcript 6.49 Memory: Alicia, 34, Lecturer, Perth

54 I've got so many memories of walking around or riding around this lake, sorting out bits of my thesis in my head.

Spatial Transcript 6.50 Memory: Cory, 36, Handyman, Perth



28 Coming up to the Caledonian Ave crossing, one of the few at-grade crossings on this path, and where a friend of mine got hit by a car and broke his leg, broke his femur. It's taken two years to recover, he's still not back on a bike, poor bastard. But that's not my fate today, it's all clear.

Spatial Transcript 6.51 Memory: Charlie, 33, Firefighter, Perth

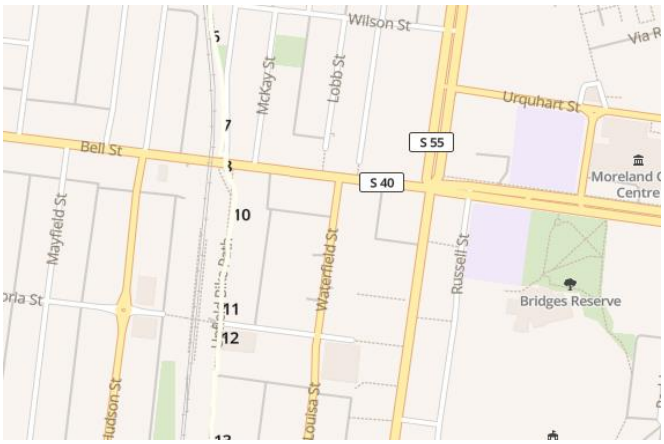
9 Really looking forward to going home and having a beer.

10 Riding's nice as well because I get to smell things. Every morning when I ride past Little Creatures I can smell the hops in the air. And just riding past now it smells like beer, which reminded me of that beer that I've been hanging out for.

6.3.5.2 Melbourne

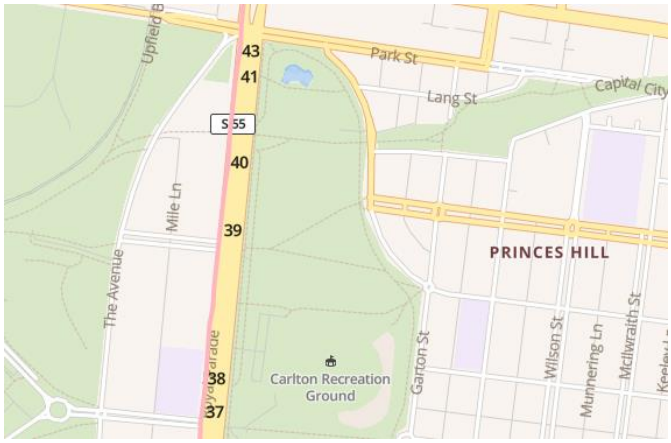
In Melbourne, memory impacts on the participants' cycling experiences by improving nocturnal navigation, connecting them with past places and friends, and significantly, locating their cycling journey in community, making place of space. Elise (Spatial Transcript 6.52) found her bike light had stopped working when she was halfway home from a night out. Having developed an embodied familiarity with the bike path, she was able to remember where the "lumps and bumps" were in the dark. For Audrey (Spatial Transcript 6.53), repetition of this cycling route had left indelible imprints on her mind. She reflects on a memory of the same experience cycling for recreation in her previous home of Alice Springs.

Spatial Transcript 6.52 Memory: Elise, 37, PhD Student, Melbourne



7 I was coming home the other night from a talk by Peter Singer, which was fantastic, but my light died half-way home, and you know, 35k ride and I was pretty tired, but I still remembered where those lumps and bumps are and still managed to stay on the bike OK, which is kind of cool.

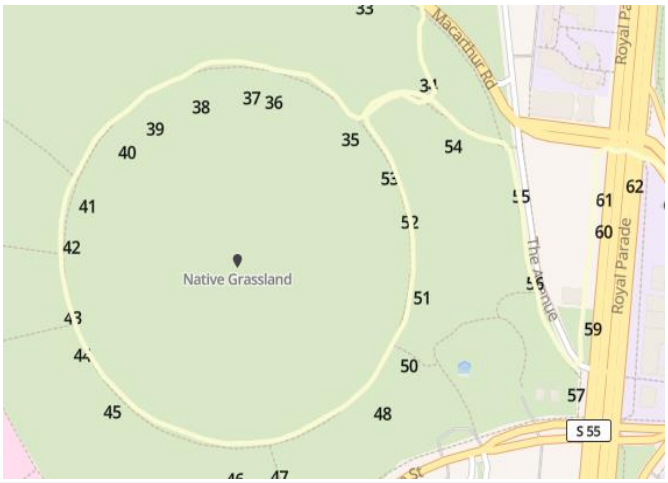
Spatial Transcript 6.53 Memory: Audrey, 49, Academic Researcher, Melbourne



38 This is a very familiar stretch of road, Sydney Road, on my, I'm sure on my death bed it will be just one of those strips of road just flashing through my mind. I remember when I left Alice Springs I used to just see segments of bike tracks, mountain bike trails, all the time, enter my head. I used to ride, and when I first came back to see this kind of weird, flash backs, I guess they were just so much part of my afternoon a ritual. It wasn't a commuting ritual, just something I used to do after work, I'd often go for a mountain bike ride in the bush. Anyway, that's all over now.

Bob (Spatial Transcript 6.54) had lived in North Carlton for close to 60 years, having worked and raised a family in the area. For him, the whole landscape he cycles through daily is rich with layers of memories from his long and full life. An active participant in his local community, he reflects on the protest against the proposed East-West Link. This controversial freeway development would have destroyed or negatively impacted much of the route he cycled on his go-along ride. Within this memory is another; a long-remembered favourite poem.

Spatial Transcript 6.54 Memory: Bob, 77, Retired Teacher, Melbourne



35 Travelling west, simply trees, grassland, not so pleasant on a windy day, but back in summer time when the East-West Link was being proposed and when this area was going to be be-spoiled for the building of a freeway, I found myself sometimes stopping about here, looking to the south where there's an incredibly stunning view of the skyline of Melbourne, starting with Allman College on the left and then the north building of Melbourne Uni, and then a lot of buildings there in the northern part of the city, right across Eureka Tower, extraordinary skyline. And I found myself on a beautiful summer morning with the sun bathing these grasslands, remembering that poetry that I learnt at school:
36 Earth has not anything to show more fair, dull would he be of soul who could pass by a sight so touching in its majesty - this is Wordsworth on Westminster Bridge - ships towers, domes, theatres, temples, lie open unto the fields and to the sky, all bright and glittering in the smokeless air. Never did sun more beautifully steep in his first splendour valley, rock or hill, n'er saw I, never felt a calm so deep. The river glided that its own sweet will. Dear God, the very houses seem asleep. And all that mighty heart is lying still.

6.3.5.3 Utrecht

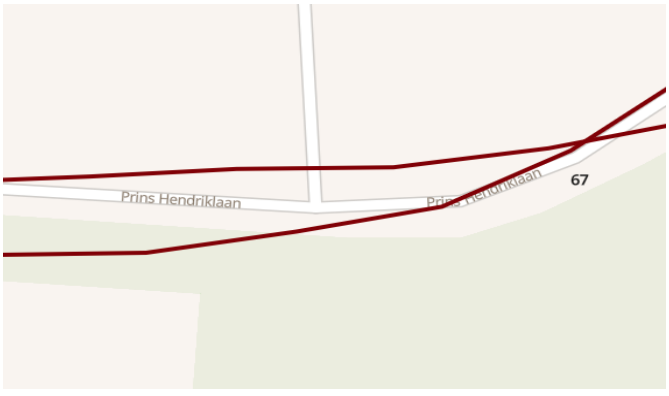
In Utrecht the participants' memories are triggered when they pass a place associated with a community or life event, and was felt particularly strongly for those who have lived in the city their whole lives. The Tour de France had started in Utrecht just weeks before these interviews, and for Mila (Spatial Transcript 6.55), the festive memories of watching the race with her family were still fresh.

Spatial Transcript 6.55 Memory: Mila, 35, Web Designer, Utrecht

9 Now I'm at a big roundabout. The Tour de France actually passed by here, so I'm remembering I was there with my two children and my boyfriend, and thinking, well, that it was nice then. It was very short but it was nice.

The task of using a smartphone to record and map her ride no doubt contributed to Shu-Chen's (Spatial Transcript 6.56) memory of first cycling in Utrecht, and using a GPS to find her way. Eventually, she learned to relax and trust that if she got lost the Dutch people were friendly enough to help her, and now feels more confident. Flora (Spatial Transcript 6.57), though much younger than Bob in Melbourne (Spatial Transcript 6.54) had a similar experience of having her ride filled with memories associated with different stages of her life growing up in the Lombok area of Utrecht.

Spatial Transcript 6.56 Memory: Shu-Chen, 42, Social Worker, Utrecht



67 I remember when I first cycled to the Asian grocery store and I used my cell phone with the GPS. I think it was only the second or third week in the Netherlands and then I got lost and my cell phone was dead. I didn't know what to do. But, you know, the city is really not that big and so I figured out a way back with my vague memories. So after that I kind of think well, it's so small, so even if you get lost it's probably not that hard to find your way back anyway. So I became more relaxed afterwards. And here, everyone speaks English, and the people here are generally friendly so you don't need to worry about if you get lost.

Spatial Transcript 6.57 Memory: Flora, 28, Student, Utrecht

38 Then I go, that's my parents' street. It's pretty long, it's a pretty far ride, and so I always think here, well this is just so fucking beautiful. There are Dutch bridges, that can be opened, the willow trees. I also have a lot of memories here, of course. Near the windmill, a friend of mine, well, we were classmates, she lived there. That little house, play house, I fell off when I was three. I remember that. I got knocked out. I remember the moment I woke up again. I passed some houses where I was a baby sitter, friends of mine, on the right side there is a park. I think about playing in the park when I was a kid when there were a lot of junkies and it was kind of, not the best place for a kid to play but we did.

6.3.6 Time

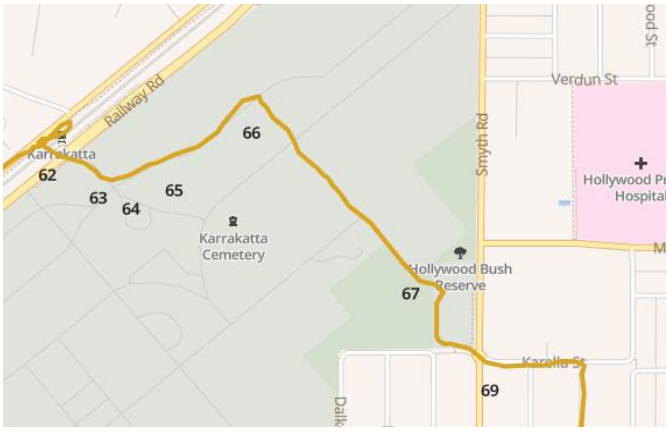
Time, described as a theme in section 5.3.6, is also present in the go-along interviews. In this case, time refers to how the time cycling is spent. Often, the act of cycling is multi-purpose, and may serve to facilitate a secondary purpose that is at least as valuable to the participant, if not more so. While it may appear that the cyclist is doing nothing, this is precisely what is important: cycling potentially offers the rider time and space away from others as well as computers and mobile devices for daydreaming and contemplation. As was reflected by the participants in the semi-structured interviews, this has important implications for mental health and general well-being.

6.3.6.1 Perth

In areas that allowed for more reflection, such as on a path separated from motorised traffic, Perth participants are able to spend their time in idle contemplation. For some, cycling offers the opportunity to engage in solitary creativity.

Sean's (Spatial Transcript 6.58) commute to work takes him through Karrakatta Cemetery. His thoughts turn to the macabre, as he contemplates post-mortem possibilities. On a separated path by the Swan River on his way home for the day, Van (Spatial Transcript 6.59) casts his gaze toward the city ahead of him and ponders the lights on in the skyscrapers, indicating people still at work.

Spatial Transcript 6.58 Time: Sean, 48, Draftsperson, Perth



65 Marble. Concrete.

66 Where to go when you die. Some public place like this? Ashes in the ocean? Somewhere those who want to visit you would like to come? This is not a bad place. It's full of stone and plants.

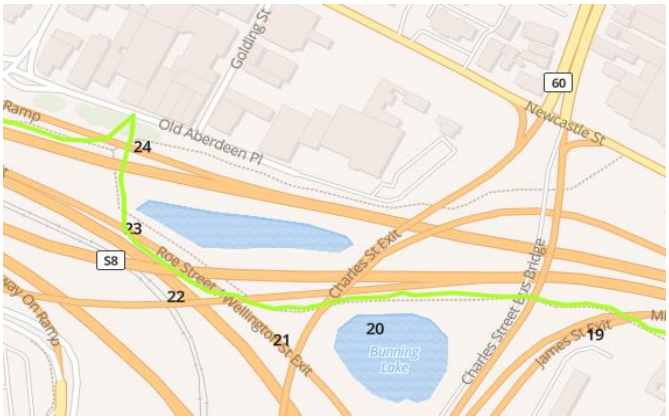
67 I'd like to be put in a crevice of granite, in the bush.

Spatial Transcript 6.59 Time: Van, 25, PhD Student, Perth

15 It's amazing looking at the city lights at dusk. It's always gorgeous. Kind of wonder if you're going to see all those lights still on in the BHP building, and who's toiling away at 7:30 on a Thursday night. Go home, buddy, go to the pub. Getting paid enough money to do it.

Cycling affords time not just for day-dreaming, but also for play and creative use of urban spaces. Alicia (Spatial Transcript 6.60) tells of a secret nocturnal pastime facilitated by cycling; singing in freeway underpasses.

Spatial Transcript 6.60 Time: Alicia, 34, Lecturer, Perth



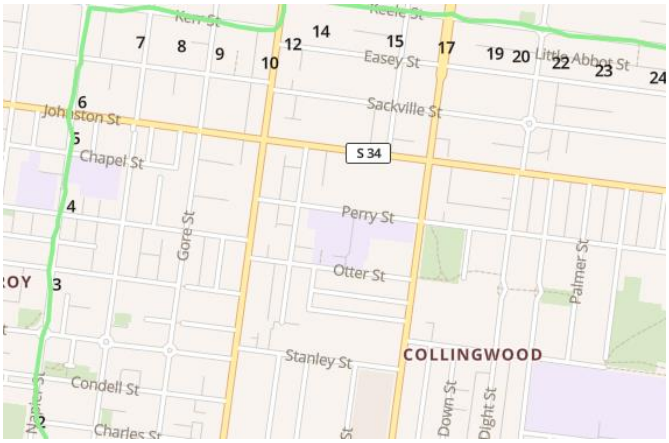
23 And this, so this spot in the middle of the night if there's no one around I might sometimes stop and sing. I love the sound of under the freeway tunnels, they're like secret magic spaces.

6.3.6.2 Melbourne

In the semi-structured interviews, the Melbourne participants described the importance of cycling for their mental health. Here, cycling is characterised as being a time to unwind and reflect, which in turn has implications for the mental well-being of the practitioner.

Sammy (Spatial Transcript 6.61) undertook her go-along at the end of a long day at her challenging job as a youth worker. Cycling gives her time to unwind, and she finds it only takes a few minutes on the bike to start feeling better. For Bob (Spatial Transcript 6.62), incorporating cycling into his life allows him to stay active and healthy, while also providing time for reflection.

Spatial Transcript 6.61 Time: Sammy, 37, Youth Worker, Melbourne



2 Attaching pannier number two, it's really heavy, lights are on, it's Friday, it's like, I don't even know what time it is. I'm exhausted, so that will probably colour my riding, though sometimes that's what wakes me up, ready for the ride home, I mean for, you know, for the end of the day. You're feeling like shit; a bit of a ride reminds you that there's more to the world than whatever is making you feel like shit. That's probably a really depressing start! [laughs] I've had a bad week.

12 It's weird, I already feel better than when I left work, and it's only been, what, a minute?

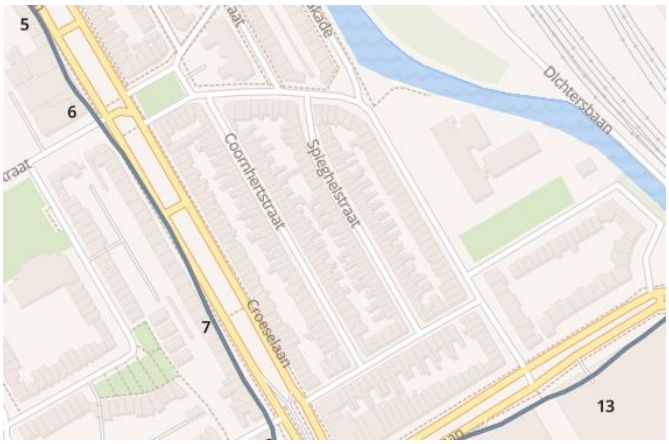
Spatial Transcript 6.62 Time: Bob, 77, Retired Teacher, Melbourne

54 And here I am at 77, still enjoying riding and finding it a good way to keep my weight down to 75ks [kilograms], and a nice way to just simply reflect, think about life, as I ride.

6.3.6.3 Utrecht

In the semi-structured interviews, several of the Utrecht participants note that in normal circumstances their ride would be different from the go-along in that they normally would have been engaged in another simultaneous task. Daryl (Spatial Transcript 6.63) explains he would usually use the time travelling on this familiar and safe path to turn his attention toward practising his Dutch.

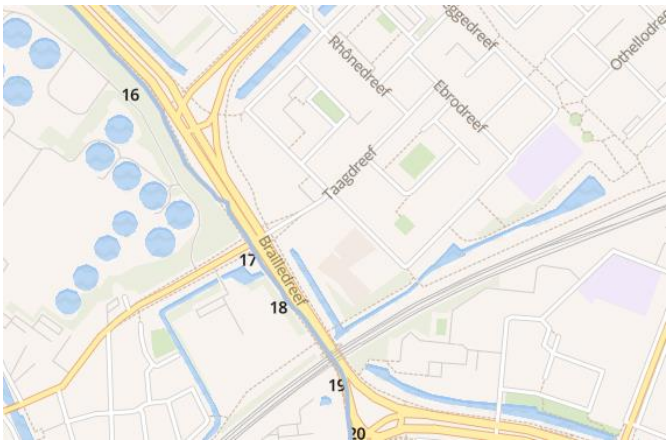
Spatial Transcript 6.63 Time: Daryl, 38, Sports Optometrist, Utrecht



7 Often along here I take the opportunity to practise my Dutch, which I probably should do more. It's good clear thinking time when it's a path that I know and I know that it's completely safe, I don't have to worry about cars generally. I often use it for thinking time rather than observing and taking too much notice of the environment

In Utrecht, cycling was often not a solitary activity. Lars (Spatial Transcript 6.64), a social worker, describes how he uses cycling as time to discuss cases with a colleague between visits to clients.

Spatial Transcript 6.64 Time: Lars, 30, Social worker, Utrecht



16 Normally I ride with a colleague but because of this interview and stuff I'm riding alone today. That's a difference. Normally we give feedback to each other about the conversation we had, think about stuff we think is good. But right now I'm riding alone.

6.4 Summary

As with the semi-structured interview results, the meanings and intensity of the themes differed across the case study cities. Table 6.4 ranks the importance of the themes to the participants in each location.

The themes of vigilance, space and interaction are all connected and interrelated. All three were ranked highly in Perth and Melbourne, and of low importance in Utrecht. To summarise the dynamic, in the highly automobile dominated contexts of Perth and Melbourne, cyclists exhibit ongoing hypervigilance in order to predict or quickly respond to potential incursions in their path. Situations that required such constant attention were when the cyclist was required to share road space with motorised vehicles, in particular, but also on paths shared with or frequently crossed by pedestrians. In the former case, the participants' concern was safety and fear of collision. In the latter, the cyclists were concerned to avoid collisions but also to maintain positive relationships with pedestrians, and not act in a way that would frighten or offend them. In Perth and Melbourne, interaction with other road users was particularly important for communicating the presence of the cyclist and avoiding crashes. In Utrecht, these three themes were ranked of low importance, largely because the separation of cycling from other modes reduced the requirement for vigilance and interaction to negotiate space. Importantly, an effect of Utrecht's normalised cycling culture is that all road users expect to see and accommodate people on bikes.

The desire to maintain momentum was rated highly across the case studies, and was perceived by the participants as an important element of a positive cycling experience. Cyclists in all the cities strongly disliked the flow of their ride being impeded by seemingly arbitrary demands of infrastructure. Exposure to heat, cold, weather, fumes, noise and proximity to traffic, combined with the desire to avoid added physical exertion to regain speed, resulted in too-slow red lights being run and routes chosen to deliberately minimise stopping. While the desire to keep moving may be common amongst car drivers too, the inherent vulnerability of the cyclist makes them much more sensitive to negative environmental stimulus and unexpected or unwanted changes in velocity.

Memory played a strong role in how cycling was experienced across the case studies, being ranked moderately in Perth, and high in Melbourne and Utrecht. Across the case studies, participants reported regularly remembering events that were associated with a landmark or section of route. Sometimes, negative memories would leave a sombre mark on a particular

place, but on the whole the memories triggered through the bike ride created a layered and storied landscape through which the cyclists felt a sense of place and connection to their city.

While time was rated highly across the case study cities in the semi-structured interviews, it was less apparent in the go-along results as of medium importance across the three sites. In Perth, where time and space permitted, the participants were able to daydream and let their thoughts wander, while in Melbourne, the meditative qualities of cycling were described if not displayed. Similarly, in Utrecht, cycling was thinking time, or additionally, an occasion for conversation with others.

This chapter demonstrated how the go-along interview can be used to capture the embodied experience of cycling for participants in three contrasting urban contexts. These results illuminate the stresses felt by cyclists in automobile dominated contexts as they navigate their way through spaces shared with other transport modes, entering into a constant state of vigilance and negotiation to maintain their safety as well as momentum. While the Perth and Melbourne participants did have enjoyable aspects to their rides, it was through using diligent route selection and personal capacity to overcome the limitations and inconsistencies of their urban contexts. The contrast between the experiences of the participants in Perth and Melbourne against those in Utrecht starkly illustrated how the quality of a bike ride is positively influenced by both provision of suitable infrastructure and a social context supportive and encouraging of cycling.

Table 6.4 Summary of go-along interview themes by case study

	City					
	Perth		Melbourne		Utrecht	
Theme	**Importance**	**Key Findings**	**Importance**	**Key Findings**	**Importance**	**Key Findings**
Vigilance	High	Safety, concern over sharing road with motorised transport in particular, but also in shared zones with pedestrians	High	Safety, concern over sharing road with motorised transport in particular, but also in shared zones with pedestrians; strong concern about doorings	Low	Closer attention required at busy intersections or where visibility was impaired; less attention required at other times
Space	High	Safety, positive image; negotiation of space almost constant when on road	High	Safety, positive image; negotiation of space almost constant when on road	Low	Space did not need to be negotiated often; participants sought routes with less cyclists but not as a matter of urgency
Interaction	High	Safety; making eye contact with drivers and ringing bell for pedestrians important for safety and good PR; less importantly supportive of community engagement	High	Safety; making eye contact with drivers and ringing bell for pedestrians important for safety and good PR; less importantly supportive of community engagement	Low	Not necessary for safety of journey; Minimal interaction with other cyclists or other road users
Momentum	High	Important for creating positive experience	High	Important for creating positive experience	High	Important for creating positive experience

	City					
	Perth		Melbourne		Utrecht	
Theme	**Importance**	**Key Findings**	**Importance**	**Key Findings**	**Importance**	**Key Findings**
Memory	Medium	Experience affected by memories triggered along the journey	High	Experience affected by memories triggered along the journey, strong association of place and belonging	High	Experience affected by memories triggered along the journey, strong association of place and belonging
Time	Medium	Safe places allow for daydreaming	Medium	Time for contemplation	Medium	Cycling for thinking or undertaking another simultaneous activity

Chapter 7 Discussion

7.1 Introduction

Transport has featured prominently in sustainability scholarship dedicated to addressing the environmental, health and economic problems caused by high rates of car use. The bicycle is increasingly represented in both sustainable transport literature and government policy as a transport option that helps to tackle chronic disease while reducing greenhouse gases and congestion. How people experience transport cycling, however, has not been given sufficient attention in Australian cycling policy, which as a result does not reflect the needs and desires of both current and potential cyclists. This thesis has drawn on tools from mobilities studies to respond to the limited explorations of cyclist experiences as compared across different urban environments in the literature, as well as ineffective cycling policies extant in automobile dependent Australian cities. Based on a novel methodology, using semi-structured and go-along interviews in a multi-case study framework, and utilising open source technologies for visualising cyclist journeys, this research has set out to understand how cyclists experience cycling in different cities by hearing directly from the cyclists themselves. This chapter explains how the methods worked together, explores the overarching findings from analysis of the results chapters with reflection on the reviewed literature and policy contexts of each city. The implications for Australian cycling policy are then outlined.

7.2 Reflections on methodology

This thesis used several unique and novel methodologies in response to the lack of engagement with the experience of transport, in particular cycling. The following section outlines the contribution of the three core methods used to conduct the research: multi-case study, semi-structured interview and go-along interview.

7.2.1 Multi-case study

One of the key contributions of this thesis, the multi-case study method was chosen with the intention of discovering how and why people ride bikes in three contrasting cities. There are limited examples of prior qualitative studies comparing cycling experiences in cities of high and low cycling amenity and mode share (although see Chataway, Kaplan, Nielsen, & Prato, 2014

for comparison of Copenhagen and Brisbane using surveys; Larsen, 2014 for an autoethnography of cycling in London and Copenhagen; and Sun, 2014 for a comparison of cycling in London and Amsterdam using semi-structured interviews). In particular, to this researcher's knowledge, there have been no prior studies using the combination of semi-structured and go-along interview methods to compare cyclist experiences between cities of high and low modal share.

The multi-case study approach functioned as a situational frame within which the two interview methods work to meet the research objectives (Flyvbjerg, 2011; Yin, 2009). Perth, Melbourne and Utrecht proved to be excellent selections for this study due to their different urban form, geography and climate as well as contrasting cycling cultures and policies. All sites had challenging climatic aspects: Perth and Melbourne both experience considerably hotter weather, and with much greater UV exposure during summer than Utrecht, which instead experiences much wetter and windier weather throughout the year. The urban form of the three cities is also markedly different, with Perth and Melbourne shaped by urban sprawl, Perth with distances between urban centres extended due to the river and few crossings. Utrecht by contrast is a small and compact city, easy to traverse on a bicycle in less than 30 minutes.

The policy contrast between Utrecht and the Australian cities was marked by a difference in the perceived importance of cyclists as part of the transport network, as well as the portrayal of cyclists in policy documents. Utrecht's key policy document, *Utrecht - We All Cycle Action Plan* makes a dedicated attempt to reflect the desires of its cycling citizens, who it aspires to be everyone. The policy documents guiding planning for cycling in Perth and Melbourne, on the other hand, set their aspirations for cycling much lower, ceding defeat to motorised transport through low targets, and visually portraying cycling as more of an optional and recreational way to get to work than a serious contender as a key mode choice. The differences highlighted here are clearly reflected in the transport mode share cycling has in the three cities, with inner Perth at 3.6% mode share, inner Melbourne at a slightly higher 6.2% and Utrecht 40.9%.

7.2.2 Semi-structured interview

The data collection for this thesis was carried out in part through conducting semi-structured interviews, following on from previous qualitative assessments of cycling (see: Aldred, 2010, 2013, Aldred & Jungnickel, 2012, 2013, 2014; Green et al., 2012; Steinbach et al., 2011). This

thesis differed from prior studies by conducting the interviews across these three cities. In addition, it is important to note that the participant samples were similar and comparable across the three sites, with a range of ages, gender balance and professions represented, making for straightforward comparison of the methods used, as well as the participants' cycling experiences across different policy and environmental contexts.

The semi-structured interview format enabled interviewees to reflect on their cycling experiences and integrate their answers with their own identities and aspirations while keeping the dialogue within the bounds of the research objective. The questions and style of interviewing used succeeded in prompting the interviewees to describe many aspects of riding a bike, in their own words with limited guidance from the researcher. As such, the interviewees were able to express themselves more fully than would have occurred if they had been asked set, direct questions or provided with a simple written or verbal survey on their cycling habits and preferences.

The outstanding benefit from using semi-structured interviews in this study of cycling experience was to gain an understanding of the context within which the participant experienced cycling. In particular, the method was useful for gaining insight into cycling identities and cultures, across and within the case study cities.

7.2.3 Go-along interview

Several methods of go-along interview were discussed in the literature review as techniques to capture and explore cyclist experiences (Brown et al., 2008; Spinney, 2011; van Duppen & Spierings, 2013). The go-along method of interview facilitates access to parts of the cycling experience that are either not possible during traditional interviews, such as what is happening in the moment, or don't lend themselves to the format, reflected after the fact (Kusenbach, 2003). The particular go-along method used here was selected to work within the phenomenological framework in order to complement and enhance the information gathered through semi-structured interviews. The unique combination of the two interview methods, particularly used within a multi-case study framework, is an important contribution to mobilities and sustainability research.

The form of go-along interview used in this thesis was novel, with a recording device in place of a researcher while also collecting GPS data to locate comments made, facilitated the capture of impromptu and often candid descriptions of the participant's in-the-moment

cycling experience that may not have occurred in a setting, such as the traditional interview, where they may censor or qualify statements made directly to the researcher. The go-along interview method captures habitual and unconscious processes that occur so naturally to the participant they are unlikely to be recalled during a traditional interview (Jones & Burwood, 2011; Jones & Evans, 2012; Spinney, 2011).

As a phenomenological method, the purpose of using the go-along interview was to get as close as possible to the cycling experience as told by the participants. The go-along interview as used in this thesis attempted to shift some of the balance of power away from the researcher, to enable the participants more control over their part in the process. For this thesis the approach was also intended to ensure participants were comfortable with the research processes at all stages of their involvement. The free-flow nature of the interview allowed the participants, within the bounds of the research objectives, to control the style of language, speed and content, and to describe what was most important to them while not being distracted or lead by the probing questions of a researcher. Participants were able to choose when and where they undertook their go-along interview, which intended to increase the likelihood of representing a genuine transport occasion or journey they might make in the course of a usual week whilst minimising navigational requirements. Hopefully this allowed the participants to be more at ease to focus on reflecting within the recording on what they were experiencing. Allowing the participants to choose where and when they did the ride contributed to assisting them to feel comfortable, and the premise of leaving the instructions fairly broad regarding the narration enabled them to be more confident their approach would be correct. Nevertheless, the reality of the go-along method had some limitations. Several participants expressed concern prior to the interview that they would not know what to say or somehow “do it wrong”. While the majority of participants found the experience to be enjoyable and not as stressful as they had feared, the concern felt by some indicate that the method does not work comfortably for everyone. It is therefore worth considering for future research using go-along interviews, whether particular groups may be more likely to feel empowered using this method, and if another form of go-along (such as without the narration requirement) could be more suitable for others.

7.2.4 Visualisation

As covered previously, the go-along method has been used in a variety of mobility studies. The visualisation method used to display the go-along interviews of this research is, however, unique, and a key contribution of this thesis. Building upon the spatial transcripts of Jones

and Evans (2012), the approach taken for this thesis utilises open source software which means other individuals can potentially replicate this for free, rather than requiring access to costly proprietary software, as well as modify the source code to suit their own purposes. The obvious limitation of this is that programming skills are required in order to utilise the source code, however, as covered in Chapter 3, courses and workshops on how to code are freely and widely available for those inclined to learn.

The value of visualising go-along interviews lies in the possibilities this holds for helping researchers, policymakers and community members to better understand how people experience mobility in cities. While more applicable to the viewer who has direct knowledge of the location of the go-along, being able to read what a cyclist experienced at the place they experienced it, has the potential to engender a sense of empathy and visual comprehension in the viewer that may not be as vivid through simply recording a recollection in a traditional interview format or, even, typical public consultation process. In the case of such visualisation being used in a community consultation process, for example, the spatial transcripts can provide an opportunity for participants to reflect on and share their own embodied experiences of a particular place; this may provide more nuanced and valuable, if resource-intensive, information on which to base transport policy and planning decisions than is currently in wide use in Australia.

7.3 Findings

The purpose of this research was to develop an understanding of how cycling is experienced in three cities with contrasting urban form, cycling infrastructure, cycling transport mode share and policy contexts. The findings presented in this chapter are grounded in mobilities studies as a theoretical framework, in particular referencing Cresswell's politics of mobility (Cresswell, 2010b) and with reflection on the literature regarding cycling cultures, citizenship and identity (Aldred, 2010; Green et al., 2012; Spinney et al., 2015; Steinbach et al., 2011), to show how these factors impact on cyclist experience (Jones, 2005, 2012; Jungnickel & Aldred, 2013; Spinney, 2009, 2015).

Mobilities scholars have asked that we see beyond the function of transport networks to shuttle people (as well as things and ideas) from place to place, to instead understand that within these networks are imbalances of power that privilege some modes, speeds and demographics over others (Cresswell, 2010b; Koglin & Rye, 2014; Sheller & Urry, 2006). Citizens' access to forms of mobility therefore affects how mobile they can be and, in turn,

their ability to engage in the spaces of a city. Ultimately, the politics of mobility affect the level at which citizens are both empowered and urged to "enact their citizenship" in terms of their rights to accessing the transport network and their responsibilities towards society as transport users (Aldred, 2012; Spinney, 2016).

With the politics of mobility in mind, the findings are presented under the headings "Identities", "Negotiation", and "Curating experience". Each of the findings relates to core aspects of the place people who ride bikes have in their city: whether or not they are or feel welcome, whether policy is for them, and their right to mobility and to space. The findings question whether particular transport modes should be privileged over others, and if so, what the rationale for this should be. Ultimately, the findings argue that the politics of mobility do not solely exist in an abstract field; they have real-life implications for how cycling is experienced. Transport planners as well as sustainability scholars should therefore recognise and respond to the embodied experiences of cyclists in order to make effective, and sustainable, transport policy.

This chapter has, thus far, provided a summary of the methods explored to conduct the research, and demonstrated the successful application of the methods for gathering data for analysis appropriate to answering the research question. The remainder of the chapter explains the findings that have come from applying the research methodology. The significance of these findings supports the value of combining semi-structured with go-along interviews while illuminating the experiences of cyclists across a range of urban contexts.

7.3.1 Identities

Discussion of cycling identities dominated the semi-structured interview results. The initial questions asked of participants were regarding the form of their cycling identity, or whether they considered they had one. The responses from the Australian interviews strongly reflect findings from Aldred (2013) that cyclists in automobile dominated contexts experience their cycling identity as belonging to an existentially and physically threatened and stigmatised group.

Specifically, the Perth participants were self-conscious about their cycling identities. The concept of having a cycling identity was one all participants seemed to have grappled with over time, and represented an ongoing source of discomfort and constant evaluation and justification. About half the participants reflected that they did identify with the term cyclist, however they also qualified this to explain exactly what kind of cyclist they represented. The

frame of reference for their cycling identity was a type of cyclist variously described as "serious", "the Lycra brigade", "MAMILs" or just "those other cyclists". This archetypal cyclist is male, wears Lycra clothing, uses expensive equipment, shows reckless disregard for other road users and is motivated by speed and fitness. He mirrors the "Cycling Citizen" depicted by Osborne and Grant-Smith (2017) as both the construct and beneficiary of, in their case, Brisbane cycling policy. The Lycra-clad Cycling Citizen can also be found gracing the pages of cycling policy documents in Perth, as well as material from the state cycling advocacy organisations referenced in Chapter 4. Most Perth participants were keen to distance themselves from this archetypal cyclist, however others, who were all fit and confident male cyclists, actively embraced the stereotype. While in the minority, for these cyclists, the archetype was easily incorporated into their personal identity as well as cycling practice. The challenge for policy makers in Perth is to recognise that many people will not identify with the kind of fast and furious cycling associated with the "Lycra cyclist", and that provision should be made for a diverse range of representations in policy and promotional material, as well as interventions for cycling in the built environment.

The Melbourne participants in comparison assertively identified with the term cyclist. This is perhaps because cycling was seen as a shared identity, with terms such as "community" and "camaraderie" often used by the Melbourne participants to explain a form of solidarity with other cyclists, despite any formal organisational structure. A particular feature of the Melbourne interviews was the participants' eagerness to complain about the behaviour of "some" cyclists, and express their dismay that they were giving all cyclists a "bad name". They were anxious that the consequences of bad cycling behaviour would be car drivers showing less consideration toward cyclists. There seemed to be a code of appropriate cycling conduct and the participants were keen to maintain the image of cyclists as being sensible and rule-abiding through policing of their own and others' behaviour.

Both the responses to cycling identities found in Perth and Melbourne align with the literature on the stigma of being associated with negative public perceptions of cyclists (Aldred, 2013). In Perth, stigma was demonstrated through participants' concern of appearing too sporty and aggressive to other road users, as well as an acute awareness of how their presence on the road may impede the momentum of motorists and the possible negative repercussions of any subsequent altercations. In Melbourne, the participants' concerns centred less on the derogatory label of cyclist *per se*, and more on presenting as the right kind of cyclist: well behaved and following appropriate legal and social norms.

Concern for portraying the correct image of cycling in Melbourne was subsequently tied to policing the behaviour of other cyclists, comparable with a level of irritation one might expect from a motorist rather than someone who rides a bike. Versions of the phrase "they give cyclists a bad name" were used by several participants to express their annoyance at the poor behaviour of "other" cyclists. The judgements participant cyclists in Melbourne made about other cyclists' behaviour are reflective of Aldred's (2013) assessment that "members of a stigmatised group explicitly criticize their own group from another group's viewpoint" (Aldred, 2013, p. 267). The criticism of other cyclists was from the perspective of a motorist, inconvenienced by having to share road space with a cyclist or irritated by not being afforded the same level of automobility as a cyclist who is able to manoeuvre themselves freely through a traffic jam or avoid the legal consequences of running a red light. The concern underlying the criticism is that further stigmatisation of cyclists and cycling by the public will increase the risks of verbal abuse and threats to physical safety, in addition to potential repercussions for how valuable the practice is seen by policy makers and hence the resources provided for the ongoing provision of cycling infrastructure.

Understanding that the cyclist's negative experience in Australia may result from the stigmatisation of cycling identities enables us to reflect on the influence of cycling policy and infrastructure in facilitating an on-going tension between the drivers and cyclists. The Utrecht participants' lack of cycling identity as well as relative lack of concern regarding both the behaviours of other cyclists and the perceptions of drivers, in contrast, was reflective of the normalisation of cycling in the Netherlands, and cycling policy and infrastructure in Utrecht not representing any particular kind of person as a cyclist. The focus in Utrecht is on the mobility of people in a way that is supportive and equitable. In Australia, however, the approach to cycling in policy and the built environment instead centres on the mode of transport itself, with expectations that users will submit to particular representations and requirements of cyclists that in reality are neither possible or desirable for many people.

These reflections on cycling identities confirm findings in the literature emphasizing the importance for cycling policy to take into consideration the different meanings cycling has in different places, in order to achieve its desired outcomes (Aldred & Jungnickel, 2014). The Australian participant group was comprised of individuals highly motivated to cycle when contrasted against the vast majority of transport users who are not riding bikes. If cycling policies do not resonate strongly with these people, it is unlikely that the present policy approaches will be sufficient to increase mode share to anything comparable with Utrecht. The

crucial difference between Utrecht, Perth and Melbourne is that in Utrecht, policy does not assume certain characteristics or identities of cyclists; rather, as was reflected in the attitudes of the Utrecht participants, it assumes anyone and likely everyone rides a bike at some point.

7.3.2 Negotiation

For those cycling in highly automobile dominated environments, each ride is comprised of an on-going series of negotiations for physical space and social acceptance. Micro-negotiations between transport users – pedestrians, motorists and cyclists – navigating public spaces have been well explored (Jacobs, 1992; Jensen, 2010), however the cycling literature has not deeply investigated these dynamics from the perspective of the cyclist. As the go-along results in this thesis demonstrated, negotiations of space and relationships with motorists and pedestrians was a constant preoccupation of the participant cyclists in Perth and Melbourne. The vigilant attention given to the task of negotiation was generally experienced as stressful by cyclists, as the primarily motivation for this behaviour was to maintain their physical safety. The stress was compounded by the additional burden of the cyclists having to manage the complexities and contradictions of their own cycling identities, and desire not to infringe on social norms nor contravene road rules. The relationships the participants had with other road users were influenced by the relative meanings of cycling in each place, whether cycling was completely normalised and accepted as in Utrecht, or stigmatised and conflicted in Perth and Melbourne. If the participants felt they were part of a stigmatised group, their interactions with motorists and pedestrians as well as other cyclists were influenced by this self-perception, and thus so was their experience of cycling.

The go-along interviews demonstrated that when given separate infrastructure, the participants were able to relax, think over their day and even daydream. The stress displayed by participants in the go-along interviews was clearly linked with the times they were cycling amongst or in close proximity to motorised traffic or, less so, sharing space with pedestrians. The participants' concerns were primarily focused on avoiding a collision with another vehicle, however physical intensity of exposure to the noise and pollution of traffic, even with on-road separated cycling infrastructure, contributed to a further sensory burden. The moments of stress were correlated in Australia with the inconsistencies of the cycle network as it changed over the course of a route, which might feature a combination of separated, off-road path, shared space with cars on a multi-lane road, and use of the footpath to avoid a hazard or parked cars. Where participants in Perth and Melbourne were able to cycle on paths separate from motorised traffic and crowds of pedestrians, their experience was

reflective of the relative calm of the Utrecht go-along interviews. The above finding indicates that the overall experience of cycling could be made far less stressful through the provision of infrastructure that separates motorists from cyclists, does not require intensive negotiations between road users and ideally has reduced exposure to negative sensory inputs such as traffic noise and fumes.

As covered previously in Chapter 1: Background, cycling offers important benefits to society, the economy and the environment. As such, it should be supported and facilitated so that cyclists do not need to overcome such high levels of stress, nor engage in such intense on-going negotiations with other transport users. In their important paper on "making cycling irresistible", the renowned cycling researchers John Pucher and Ralph Buehler (John Pucher & Buehler, 2008) provide a comprehensive report on the essential elements required for creating a city where people want to ride bikes. A core part of their recommendations is adequate provision of quality cycling infrastructure. These authors reflect that the government policies in the Netherlands, Denmark, and Germany, all countries with a bicycle mode share above 10% (John Pucher & Buehler, 2008, p. 498), have focused attention on people rather than cars for several decades now. The researchers argue that as a result, the cities within these countries are generally more liveable and sustainable than their automobile dominated counterparts in the USA, UK and, as this thesis has also suggested, Australia. Through analysis of the policies of cities with high cycling modal share across the Netherlands, Denmark and Germany, the authors distil the "cycling city" down to the essential policy recommendations. Primarily, policy should require the provision of separated cycling infrastructure along highly trafficked routes and intersections, to support both commuter travel as well as other transport uses. Local residential neighbourhoods should be designed with traffic calming measures to lower speeds and create road space that is shareable between cyclists, motorists and pedestrians. Parking for bicycles should be widespread and secure. This combination of environmental responses can provide cyclists of all ages and abilities with safe, useful transport routes, particularly if supported with education and training for all road users, and on-going promotional events and campaigns that celebrate cycling as a mode of transport. Cycle planning should be integrated with other land use planning processes, ideally part of a strategy for mixed-use, medium to high density land use, as well as integrating with public transport to be part of a comprehensive network of sustainable transport options. Importantly, the above policies to make cycling more appealing must, the authors caution, be paired with strong disincentives for driving a car: "It

is precisely that double-barrelled combination of 'carrot' and 'stick' policies that make cycling so irresistible" (John Pucher & Buehler, 2008, p. 525).

Infrastructure on its own, however, is insufficient to achieve the levels of cycling necessary to create a lasting and sustainable mode shift away from car dependence. While it does contribute to increases in cycling rates (John Pucher & Buehler, 2008) as well as the normalisation of cycling and diversification of the cyclist community (Aldred & Dales, 2016), greater cultural change is also needed. Pucher and Buehler's (2008) work (here and elsewhere: see also Buehler & Pucher, 2012; Pucher & Buehler, 2006, 2009, 2016; Pucher, Buehler, & Seinen, 2011; Pucher, Garrard, & Greaves, 2011) is comprehensive, and provides an excellent recipe for policymakers to create cycling friendly cities, however their approach lacks a crucial ingredient that sustainability researchers increasingly recognise is the key to successful, sustainable change: discussion, deliberation and co-creation of cities between policymakers and community members (Hartz-Karp, 2005, 2007; Hartz-Karp & Weymouth, 2017).

Deliberative processes are varied and complex, depending on many factors from local context to the subject under deliberation (Button & Ryfe, 2005). The deliberative democratic approach to decision-making moves beyond the current limitations and dissatisfactions of community and stakeholder engagement used across the democratic world (Hartz-Karp & Weymouth, 2017). The overarching process, as outlined by Hartz-Karp and Weymouth (2017, p. 115 after Carson and Hartz-Karp, 2005), involves everyday people, broadly representative of the general population, who commit to making decisions together on important matters through a process of deliberation; through consideration of relevant information, recognition and incorporation of diverse viewpoints, co-creating and weighing possible options, and ultimately co-developing a pathway forward to the final, influential outcome (Hartz-Karp & Weymouth, 2017, p. 115).

Participatory democracy techniques can be utilised for bringing the community together with policymakers to explore issues relating to cycling, as part of a larger project of building the sustainable city, opening dialogue for significant shift away from automobile dependence, and breaking down stigmatised ideas of what it is to be a cyclist. Versions of the spatial transcripts developed for this thesis, or indeed other creative outputs of a mapped, go-along interview process, offer an opportunity to visualise and make tangible the recollections and experiences of others. As such, the spatial transcript can be used as a tool for focusing and stimulating discussion about cycling, and the chance to different perspectives. In such situations, community members are given the opportunity to be heard and their experiences

and opinions validated. The display of creatively visualised spatial transcripts in deliberative democratic processes could potentially assist people who are not cyclists to understand and empathise with the challenges faced by cyclists while riding, and lead to better transport outcomes through empathetic, co-creation of cycling policy.

Deliberative processes have the potential to produce better outcomes for transport planning than traditional consultation in part due to the conditions of inclusion and reciprocity. These conditions facilitate both diverse representation of background and opinion; further, they require that participants engage cooperatively and respectfully, and therefore ideally lead to a more just outcome (Button & Ryfe, 2005). Meaningful collaboration between government and public done well has the potential to improve cycling outcomes by resulting in the creation of a transport system that fits actual users' needs, while contributing to cultural change by increasing empathy for different types of road users, and potentially decreasing the stigma associated with cycling. Deliberative democracy requires, however, that both policymakers and the community are willing to commit the time and resources necessary to properly engage in deliberative processes, both of which may be significantly greater than a usual "call for submissions" consultation period. The policy-makers are further required to be open to take on board the outcomes produce as a result from the deliberation processes.

7.3.3 Curating Experience

The results from this research indicate cyclists are actively involved in creating and curating their experience, a finding which aligns with previous studies on the embodied experience of cycling (Jones, 2012; Jungnickel & Aldred, 2013). While the act of curating one's mobility in order to achieve the optimal experience features in all transport modes, cyclists inherently have more exposure to the world around them, and are therefore more sensitive to detours, noise, fumes, air turbulence, and loss of momentum than "enclosed" modes. As such, cyclists have a greater need to be engaged in shaping their experience, particularly when the built and social environment is hostile to their presence. In constant engagement with the world around them, cyclists make in-the-moment assessments of how they should act to maintain their personal momentum and stay safe while upholding social norms and legal behaviour.

The results chapters demonstrated that in many ways, cycling is a model of urban automobility in its truest sense, given the potential range of movement and access to spaces possible for cyclists. Free from ties to fossil fuels or charged batteries, the bicycle requires only the body for propulsion, and it's faster than walking. The agility, size and relative safety

of the bicycle allow the user to enact “deviant” behaviour, such as filtering past cars trapped in a traffic jam, hopping the curb to circumvent obstacles or undesirable sections of road, taking cheeky shortcuts across corners or even turning down ostensibly one-way streets (for which cyclists may or may not be excepted). These aspects of cycling, as related by the Australian participants in particular, suggest the cyclist to be a self-contained, autonomous actor, reliant on no-one nor bound to the routes and schedules of the transport network. The apparent agency and autonomy of cycling-in-practice afford the practitioner with a unique form of transport which, in turn, facilitates the imagination of a personal, cycling-specific cognitive map. This cycling schema of the city is informed by the outcomes of the cyclist’s explorations and subsequent discoveries on the bicycle that may not have been possible as a user of public transport (too restricted by route and scheduling), driver (too “stuck” to the road and bound by rules) or pedestrian (too slow). The cyclist, therefore, is perceived as an empowered actor, with agency to respond to and ultimately benefit from the demands made of the cyclist in the moment. To follow from Jones (2005), the cyclist creates personal micro-geographies of the city and “reconstructing various spaces in the city in a highly embodied fashion” (Jones, 2005, p. 827). There is power attached to agency and autonomy, and in turn, several of the participants in this study associated the positive connotations of these aspects of their ride with feeling a sense of freedom.

Cycling in highly automobile dominated contexts not only produces but requires individual agency and autonomy. These qualities were celebrated by Fincham’s (2006) bicycle couriers, who took pride in their abilities to deftly manoeuvre in and out of traffic, becoming truly automobile compared with the reduced mobility of car drivers trapped by congestion. However, as Fincham notes, their ability to embrace risk-taking behaviour to maintain their speed and make deliveries on time was actually a requirement of an inherently dangerous job that had been reframed as culture in order to be acceptable. The work of a bicycle courier is extreme compared with the daily commutes of the cyclists in the present study, however it mirrors the situation occurring with, in particular, the Australian participants. While in the semi-structured interviews the Perth and Melbourne participants celebrated cycling as an enjoyable, freeing experience, as discussed in the previous section, the go-along interviews showed that in-the-moment, cycling could actually be very stressful. The two sets of results taken together suggest that cyclists are compensating for their negative experiences of infrastructure and culture by reframing these experiences after the fact, focusing on the benefits of cycling, the skills and knowledge they gain, as well as how cycling fits positively with other aspects of their identity.

This process of reframing however, was apparently only a feature of the automobile dependent cities of Perth and Melbourne. In comparison, the Utrecht participants, while embracing the inherently freeing aspects of the bicycle, did not express feelings of freedom being associated with developing their cycling skills to a level where they could fiercely take on any situation on the road. Rather, their sense of freedom came from riding a bicycle being a pleasant and useful form of transport that enabled them to get where they wanted to go with a minimum of fuss. The supportive infrastructure, legislative environment and culture enabled the participants to use cycling to facilitate and enhance other aspects of their lives as there was considerably reduced requirement for the hypervigilance experienced in the Australian cities. Rather, the more controlled environment, where cyclists had less instances requiring negotiation of road space with motorised vehicles, enabled the participants to focus less on the practice of cycling, and instead use their journey for additional activities such as listening to podcasts or music, having free space to daydream or meditate, spend time with children or practice their language skills.

Taking advantage of the mobile flexibility of the bicycle to maximise flow and avoid unsafe situations should not be dismissed as deviant behaviour. Neither should the use of headphones for listening to music or podcasts, talking on the phone, or daydreaming be framed as "distracted riding", as some researchers have suggested (Chataway et al., 2014). Rather, these are the strategies cyclists use to make up for deficiencies in the built and social environment in which they are riding or, as in places of relative security such as on a bike path in Utrecht or an off-road path in Melbourne, activities that make their ride more interesting or make additional use of their time. By actively seeking to understand how and why cyclists are working to curate and optimise their experiences, policymakers can make cycling policy that is better for cyclists and has positive outcomes for other road users. This is demonstrated in Utrecht's *We All Cycle - Action Plan*, which recognises that "annoyance creates annoying behaviour", such as running red lights when the wait is too long. Subsequently, the plan promises to increase efforts to design out long wait times at lights, and make necessary diversions due to construction a pleasant experience. By working with the cyclists' desire to maintain momentum and compensating for the physical cost to the cyclists of an extra 500m diversion, the city can both increase their approval rating from cyclists, and decrease the instances of non-ideal behaviour.

Exploring why and how cyclists are curating their experiences gives insight into the end-use of cycling policy and infrastructure, and valuable information for improving transport networks.

Crucially, however, how cycling is experienced varies from person to person, depending on a range of reasons from personality to physical fitness and tolerance for risk (Jones 2012). The behaviour exhibited by participants in Perth and Melbourne in actively curating their experience through route selection and constant readjustment strategies is, as with Osborne and Grant-Smith's Cycling Citizen (2017), reflective of policy that requires and supports only autonomous, highly motivated, capable individuals. The absence of this as a requirement for cycling in Utrecht similarly highlights the impact of cycling policy that strives to represent everyone. As Steinbach, Green, Datta and Edwards reflect in their study on identities and cycling, "the body evoked by the autonomous, future-health orientated, efficient cyclist (and perhaps the one evoked by much cycling policy and promotion materials) is simply not the body experienced across all the population" (Steinbach et al., 2011, p. 30). It is unreasonable to place such high expectations of motivation, skill and capability onto members of the public who are engaging in a form of transport that has as many health, environmental, social and economic benefits as cycling. Cycling policy should instead facilitate extremely low barriers for participation, so that people of all ages, cultures, life stages and ability levels can easily participate and take full advantage of all that cycling offers.

7.4 Summary

Based on a novel methodology, using semi-structured and go-along interviews in a multi-case study framework, this research has shown how cyclists experience cycling in different cities by enabling the voices of cyclists to be heard. This chapter has discussed how tools from mobilities studies were used to respond to the limited explorations of cyclist experiences in the literature, to understand how cycling was experience in three very different case study cities.

The findings suggest that cyclists in automobile dominated cities struggle with the concept of a cycling identity, and that the constant assessments cyclists make regarding how their actions are perceived has implications for their overall cycling experience. The go-along results demonstrated that even though cycling may have been described by the participants in Perth and Melbourne as an overall positive activity, in the moment they are forced to overcome many stressful situations. The stress felt by participants was largely associated with the times they were engaged in negotiation of space with motorists. Stress was not a significant feature of the Utrecht participants' go-along rides, as there were few occasions when they were required to choose a route with motorised traffic. The participant cyclists in Perth and Melbourne responded to the stresses of cycling by actively curating their ride to optimise their experience. Several framed the resulting feelings of autonomy and agency as

eliciting a sense of freedom and hence positive overall. Again, this process was largely absent amongst the Utrecht participants, as their environment was on the whole extremely supportive of their cycling practice.

Taken together, the findings indicate that cycling policy in both Perth and Melbourne is not adequately addressing the needs of cyclists, because they are not included in the process of policy creation. The various government bodies responsible for transport policy in Australia have apparently disengaged with the question of who and what kind of activities should be privileged in transport networks. Grappling with this question is a fundamental requirement for developing sustainable and equitable cities, and is at the heart of the tension currently experienced between cyclists and motorists when they are forced into physical and social negotiations. Developing empathetic understandings of people's experiences of mobility in cities can illuminate the efficacy of local transport policies, particularly if incorporated into deliberative democratic decision-making processes. The findings presented here therefore argue for Australian policymakers to commit to deeper processes of deliberative policy making that directly engaging with transport users.

Chapter 8 Conclusions and Future Research

8.1 Introduction

This thesis has been designed in the hope that the reader will find it not only provides a window into the experiences of cyclists in three cities, but honours and celebrates the poetic wisdom that ordinary people hold and are keen to share about how they move around their cities. Transport is such a central part of our lives that while not everyone has the technical ability to design a network of cycle paths, they can certainly share how using a particular network has made them feel, and how their experience could be improved. This chapter will summarise how the methods used throughout this study have worked to answer the research question and objectives, and reiterate the major contributions and Australian policy implications of the thesis that have grown through dedicated engagement with the stories generously told by participants in this study. The final section offers a sample of imaginings for future research directions, and a hope for further enquiries into experiences of mobility.

8.2 Answering the research question and meeting the research objectives

This thesis has sought to answer the question:

How can people's experiences of cycling in urban environments be understood and used to inform transport policy?

To provide an initial framework for the research, Chapter 1: Background identified that sustainability researchers, responding to the negative effects of automobile dependence, had established transport as a key element to address in the task of making cities sustainable. In particular, bicycle transport, due to its low carbon, healthy and potentially socially inclusive attributes, is consistently given as an important transport mode to support when planning sustainable transport systems. Chapter 1 identified that the approaches used by sustainability scholars to understanding the transport needs of cities did not adequately engage with how transport is experienced by users. Transport cycling holds more physicality and corporeal vulnerability than motorised modes such as private car or public transport, and the possible speeds and hazards associated with riding a bicycle means that cyclists have different needs again when compared with pedestrians. As such, to make good transport

planning decisions for cyclists, empathetic understandings of how the practice is embodied and experienced by the cyclist should be attained. The remainder of the thesis served to respond to this evaluation, and in the process meet four research objectives:

1. To contribute to understandings of urban cycling mobilities;
2. To compare experiences of cycling in Western cities of high and low cycling amenity;
3. To understand how the combination of semi-structured interviews and go-along interviews can be used to capture the experiences of cyclists; and
4. To analyse how cyclists' experiences can inform sustainable transport policy in Australia.

The first objective, to contribute to understandings of urban cycling mobilities was met in several ways. Firstly, Chapter 2: Literature Review provided an assessment of review of the literature relevant to developing understandings of cycling in cities, and in particular, factors affecting how cycling is experienced. The review of this cycling literature revealed an abundance of research dedicated to identifying policy and infrastructure practices that increase cycling mode share in cities. In comparison, limited work has been undertaken on how transport cycling is experienced or the contributing factors to experience as told from the perspective of the cyclist. In particular, mobilities studies was identified as holding tool, such as the use of mobile methods, for developing understandings of the embodied cycling experience. This field, however, is still growing. A need for further research on methods that facilitate exploring and understanding how transport cycling is experienced was identified in the literature review, and used to inform the creation of the research question and objectives guiding this thesis.

Chapter 3: Research Design, further responded to the first objective by offering a methodological approach for exploring cycling mobilities. Phenomenology was described as the overarching methodology. Useful for exploring phenomena as they appear to perception, this approach guided the selection of methods that would work in concert to develop an understanding of cycling as it was experienced across three contrasting, yet comparable, case study locations. In particular, for data collection, the go-along method of interview was tested as a complement for the more traditional semi-structured interview. The form of spatial transcript used to visualise the go-along interviews further reinforced the commitment of this thesis to the phenomenological approach of understanding cyclist experiences. Based on data collected with a smartphone by the participants themselves in the absence of the researcher, the spatial transcripts represent experience of cycling as directly as possible while making attempts to minimise interference from the researcher.

The second research objective, to compare experiences of cycling in Western cities of high and low cycling amenity, was met through the selection of the case study cities outlined in Chapter 4: Cities and Participants. This chapter described various characteristics of the case study cities relevant to understanding transport cycling in those places. In doing so, it provided the foundation for answering the research objective to compare cyclist experiences in cities of low (Perth and Melbourne) and high (Utrecht) cycling amenity. This chapter provided an overview of cycling in Australia and the Netherlands, as well as the policy contexts for each of Perth, Melbourne and Utrecht. The participant sample from each city was also described, and found to be similar across the three sites in terms of age, gender, and balance of professions.

The third research objective, to understand how the combination of semi-structured interviews and go-along interviews can be used to capture the experiences of cyclists, was met through the analysis of the two results chapters, and explored in Chapter 7: Discussion. This chapter outlined the successful application of the methodology for answering the research question, and presented the findings of the thesis. It argued for the efficacy of the combined use of semi-structured and go-along interviews for collecting data with which to understand cyclist experiences, both in the general context of the cyclist's life and specifically during the act of cycling.

The findings outlined in Chapter 7: Discussion delivered an answer to the final research objective, to analyse how cyclists' experiences can inform sustainable transport policy. The chapter validated the chosen methodology by showing how cyclist experiences were captured, with the findings being of value to creating sustainable transport policy. The findings can be summarised as illuminating the challenges for cyclists in automobile dominated contexts resulting from an imbalance of power between transport modes, and subsequent required negotiation of space and relationships with other road users. This discussion established that to neutralise if not overcome the limitations presented by automobile dominance, cyclists are actively curating their experience using a range of strategies constructed from their knowledge and skill level. The crucial finding from analysis of the interviews is that while culture and social norms impact on how people experience cycling, overall the presence of separated infrastructure was associated with more positive experiences. Transport policy, as it currently exists in Australia, assumes and requires cyclists to possess high levels of technical proficiency, resilience and motivation to compensate for the limitations of the physical environment as well as the privileges afforded to motorised

transport. This approach relies on cyclists, with all the contributions their transport mode makes to the community, to do the heavy lifting rather than society, and has restricted the mode share of cycling to well below levels that could be considered to represent a sustainable transport system. By attending to the experiential aspect of cycling and including cyclists in decision-making processes, policymakers can develop understandings of the real-world impact of transport cycling policy, and make better assessments of its efficacy.

8.3 Contribution of this thesis

This thesis has provided four original contributions to mobilities and sustainability scholarship. Firstly, the multi-case study approach provided a cross-cultural comparison of the embodied experience of cycling in three cities with differing characteristics. By using a comparable sample of cyclists across the inner urban areas of three cities with a variety of cycling rates and cycling policies, the research was able to compare and contrast real-life experiences. The case study sites provided situational frames within which to test the interview methods, and compare the experiences of the research participants.

Secondly, the results chapters and subsequent discussion demonstrate the efficacy of using the combination of semi-structured and go-along interviews in developing a full picture of the cyclist's experience. While the semi-structured interview provided context, the addition of the go-along interviews to the data collection methods captured the "fleeting and ephemeral" (Spinney, 2009) aspects of cycling in the pre-reflective, spontaneous descriptions the participants gave of their own experience. The combination of these methods was shown to be a powerful tool for understanding how cyclists' experiences in the moment become integrated with the broader context of their lives to define their cycling identity.

Thirdly, the go-along interview results were visualised with a novel form of spatial transcript. The custom web application was created using open source software, freely available and open to others to emulate, particularly by utilising the source code located in the online repository described in Chapter 3. As discussed further below, the spatial transcript has potential to be used as a tool within community consultation processes, and the use of open source software in this project allows for a broader range of organisations and individuals to build on the methods used here in a cost-effective way.

Fourth and lastly, this thesis provides lessons for the creation of sustainable transport policy in Australia, discussed further below. They outline a new approach to policy development in this country which builds on the findings from this study.

8.4 Informing sustainable transport policy in Australia

Ultimately, the thesis has been an endeavour to generate findings that can be used to improve sustainable transport policy in Australia. As previously mentioned, the results of this research clearly indicated preference of participants for cycling infrastructure that separates bicycles from motorised traffic, shown through reduced stress and need for high levels of vigilance when cycling in places not shared with motorists. The Utrecht participants generally expressed less stress than those in Perth and Melbourne, in large part because of the quality of the cycling infrastructure, though also as a result of the policy context, which treated cyclists with respect and aimed to create an urban environment that lessened discomfort for cyclists and therefore displays of risky and law-breaking behaviour. There is scope in Perth and Melbourne for cycling policy to recognise that cyclists engaging in apparently deviant behaviour are, in actuality, compensating for difficulties in the urban form as well as managing social norms and relationships with other road users.

Relatedly, policy in Perth and Melbourne could more clearly recognise that cyclists are not a homogenous group, and that any person is potentially able to cycle (on a bicycle, or indeed tricycle or other bicycle-like device). Currently, the focus of policy in Australia is still very much directed at those who "Lycra-up" to commute long distances for fitness, or those who use cycle paths in a recreational manner. This is in stark contrast to cycling policy in Utrecht which instead assumes everyone cycles. Policy documents guide the provision (or not) of cycling infrastructure and are important in shaping the public discourse around cycling. The flavour of this discourse impacts on how welcome cyclists feel using the roads and paths, which in turn influences how they experience their cycling journey as well as the kinds of decisions they make while cycling. It is therefore essential that policy is created with the general population in mind, if the aim is to increase cycling rates to a level where they represent a real transport option and not just one for the fearless or environmentally passionate.

There is significant potential for the data collection and representation methods used in this thesis to be utilised to create meaningful dialogue with the broader community. It is, perhaps, an obvious finding in this thesis, but a very important one, that the community should be consulted about how they currently experience cycling in a city, and what they think they need

to improve their experience. The comparatively positive experiences of the Utrecht participants on their cycling journeys are reflective of the depth with which the local municipality has engaged with its population on transport issues, relative to similar governments in Australia. The results chapters of this thesis clearly show the willingness of community members to share stories of their cycling experiences. It is well within the capabilities of policymakers within local and state governments to reach out to community members who currently ride bikes, as well as those who don't but would like to, in order to conduct personal interviews and hear these stories firsthand. To deliver high quality outcomes, consultation processes must include actively seeking out a diverse range of voices including varieties of ethnicity, class, ability, age, and gender. Mobile technologies, such as applications that enable easy recording of people's bike rides, as used for this thesis, can further illuminate the spectrum of cyclist experiences and enable policymakers to deeply understand current use of infrastructure as well as imagine better ways of providing sustainable transport networks. The spatial transcripts that can be produced through the go-along process are an excellent tool for use in a community dialogue event, to act as a focal point for discussion by allowing participants to see and comment on the route choices and experiences of others.

8.5 Future research directions

As a multi-method, multi-case study project, this thesis acts as a launching point for a wild array of exciting and valuable research projects, only a handful of which will be discussed here. Future research stemming from this project has two main directions; firstly, projects that could follow directly from this thesis and topic, and secondly the application of methods used here on a range of different topics and contexts relevant to mobilities.

With respect to the go-along interviews in this thesis, participants were free to choose where and when they conducted their ride. Future projects using the go-along interview could focus instead on uncovering how the same route is experienced, such as a single road or bike path. This approach could, for example, directly compare the experience of specific groups, perhaps those who are under-represented in both cycling demographics and cycling research such as Indigenous people, those from minority ethnic and migrant groups, people with disabilities, women, seniors and children. Sustainable cities should be inclusive, with transport networks that benefit everyone. It is therefore essential that researchers embrace opportunities for developing understandings of how under-represented groups experience cycling, and subsequently policy that accommodates their diverse needs.

There are endless interesting permutations of the multi-case study approach used for this thesis, with room for much more research comparing cycling in differing cultural, environmental and socio-economic contexts, areas of high and low cycling amenity both between and within countries. The current paucity of literature exploring the experiences of cyclists in cities and towns outside Northern Europe and the Anglosphere should be challenged. A wealth of projects is possible that extends the work of international scholars mentioned previously in Chapter 2 and champion voices from regions – Asia, Africa, Latin America – that are under-represented in the cycling literature despite representing some of the highest rates of urban growth. In addition, regional and rural towns, where cycling rates are sometimes higher than in the most cycle-friendly inner-urban suburbs, are ripe for investigation as well as comparison with their compatriots in the Big Smoke.

It is clear that the various methodologies used in this thesis can be applied to studies of a range of transport modes, from skateboarding to public transport and walking, as well as the various forms of cycles including e-bikes, trikes and recumbent bicycles. E-bikes in particular are growing in popularity globally, and represent a potential sustainable transport option for those living in low-density or geographically challenging areas, in addition to people with mobility difficulties that prevent use of a standard bicycle. Sustainable transport systems in cities should represent the diversity of the community by accommodating a range of low carbon, affordable and accessible modes, and the methodology used for this thesis can be applied to understand how these other modes are experienced, and hence what planning is required.

Similarly, the methodology used in this thesis may also be applied to other studies of mobility that are not specifically related to transport. This might include, for example, the experiences of mobility of a recovering stroke survivor or the experiential wanderings of a hiker embarking on a newly developed recreational trail. The combination of semi-structured interview, with the go-along interview and subsequent production of spatial transcripts can provide a level of insight into the mobile experiences people have in all manner of aspects of their daily life, of similar quality and value as that attained by the present study.

Finally, future research into mobile experiences and mobilities studies more generally can, and should, embrace play and creativity as a means to better understand and convey the mobility of others. There is some precedent set for creative approaches to conducting and presenting mobilities research in the ethnographic cycling literature, including an exhibition of commuter cyclists' sensory maps (Jones & Burwood, 2011); narrative-style description of cycling as performance and GPS-drawn "RIDE" across London (Jones, 2005, 2014); and

workshops to make women's "rational dress" cycling garments to wear on a ride across London (Jungnickel, 2015). The spatial transcripts created for this thesis could, for example, be reconfigured and represented as light projection on the route of the go-along, and provide an opportunity to engage communities in a process of co-creating knowledge while generating conversations about cycling practices that could influence transport policy. The need for researchers to feel empowered to employ creative methods for developing and sharing knowledge is increasingly urgent, as the difficult environmental and social problems facing urban transport systems become more complex and desperate. New ways of thinking and exploring are necessary to develop the solutions that will create truly sustainable cities.

8.6 Conclusion

This thesis has endeavoured to demonstrate the vast depth of knowledge that can be gained from working with cyclists, or any users of transport systems, to understand how they are experiencing their mobile practice. Policymakers in Australia, keen to deliver transport networks that function to enhance the sustainability of cities, can use the stories of how people experience mobility to inform sustainable transport decisions. Cyclists are particularly and directly sensitive to the environment around them, and by paying attention to their experiences as transport network users, improvements can be made that have the potential to benefit everyone. This thesis has shown that opening up policymaking processes to earnest dialogue with community members could lead us closer to the sustainable city by not just designing cities for people, but with them.

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Appendices

Appendix A Information Sheet

My name is Georgia Scott and I'm a PhD student at Curtin University of Technology, Perth, Western Australia. I invite you to participate in my research. My project is titled "The bicycling body: an experience-based policy framework for urban cycling in Australia".

Project Aims

This project aims to capture the subjective physical and emotional – "embodied" – experiences people have while riding a bike in urban environments. Experiential data will be collected by both research participants in the three case study locations (Melbourne, Perth and Utrecht, Netherlands) and myself in these and several other cities. This data will then be used to create beautiful maps that represent riders' experiences as much as possible. These maps, combined with qualitative data obtained through interviews and my own reflections, will inform the development of a new framework for making better transport policy in Australian cities.

How I'd like you to be involved

Interview

I'd like to interview you about your experiences cycling. The questions will be reasonably unstructured, but centered around things like what you like about cycling, what makes it difficult or easy, why you ride, and similar topics. The interview will go for about 30 minutes and will be recorded. The interview will take place in either a café or other public place.

Journey Mapping

While riding your bike, using the provided GPS and voice recorder, narrate and map a journey familiar to you, such as from work to home (approx 15-30 mins). Describe what you're feeling, smelling, seeing, doing, thinking. Whatever comes to mind. At the interview (above) I will arrange a time with you to drop off and pick up the equipment.

Confidentiality and security of information

Any personal data collected through this research process will be anonymised before publication. Every effort will be taken to maintain your privacy. During the data collection and analysis period, all material will be stored on my password-protected computer with encrypted online backup. After publication, all data collected during interviews and other activities will be securely stored at the Curtin University Sustainability Policy (CUSP) Institute for 7 years, after which it will be destroyed. Throughout the research process, your data may be accessed by me (Georgia Scott), and by my supervisors Dr Anne Matan and Professor Dora Marinova.

Consent

Before participating in the study, I will ask that you sign a consent form to show you have understood what is being asked of you. However, your participation in this study is completely voluntary, and you may withdraw at any time from any or all parts without giving a reason, and without negative consequences.

Further information

If you would like to know more about the study, please call me on +61 416 007 627 or email georgia.scott@postgrad.curtin.edu.au. Alternatively, you may contact my supervisor Dr Anne Matan by phoning +61 8 9266 9039 or by emailing anne.matan@curtin.edu.au.

This research has been given ethics approval by the Curtin University Human Research Ethics Committee (approval number HURGS-14-14). If you have any concerns about the project on ethical grounds, please contact

Human Research Ethics Committee (Secretary)
Phone: +61 8 9266 2784
Email: hrec@curtin.edu.au
In writing: C/- Office of Research and Development, Curtin University of Technology, GPO Box U1987, Perth WA 6845

Appendix B Consent to Participate in Research

Consent to participate in research
Project title:
The bicycling body: an experience-based policy framework for urban cycling in Australia

Researcher:
Georgia Scott, PhD Candidate
Curtin University, Perth, Western Australia

- I have been informed of, and understand the purpose of, this study.
- I acknowledge I have been given the opportunity to ask questions and seek further clarification about the project.
- I understand that I will be able to view the material collected about me and make changes if necessary.
- I understand that the published data will be anonymised to the best of the researcher's ability, and that the anonymised data will be published in various media (eg academic journals, PhD dissertation, online).
- I confirm I am able to safely perform the cycling component of the research, and agree that I will only undertake the narration at times that it is safe for me to do so.
- I agree to participate in the study as outlined to me, with the understanding that I can withdraw at any time without prejudice.

Name	Signature	Date

Appendix C Instructions to Participants

Go-along interviews: instructions for participants

1. I have provided you with a lapel mic and an iPhone. Please connect the mic to the phone, then use the clip on the mic to attach it to your collar or shirt somewhere close to your face but free from interference from clothing or bag straps etc.
2. Once you have opened the phone, the screen displays two apps: MotionX-GPS and Voice Memos.
3. Open Voice Memos and press the red button to start recording.
4. Press the "home" button on the phone to return to the home screen.
5. Open MotionX-GPS.
6. Important: make sure the spinning globe in the upper right corner has turned blue/green (not red). This may take a moment.
7. Press Menu (lower right), then Record Track (upper right).
8. Press Start.
9. Tell the recording you have pressed start.
10. Start riding! Whatever route and speed you choose is fine.
11. Narrate your journey however you feel comfortable. The point is to describe whatever you are experiencing, including sensations, emotions, memories etc. Don't worry, you can't get it wrong!
12. When you reach your destination, open up MotionX-GPS and press Pause, then Save.
13. Press the red strip at the top of the phone to return to Voice Memos and stop the recording by pressing the red square.
14. Press Done, write your name in the pop-up box and press Save.
15. That's it! Thank you ☺