

**Secured by automobility: why does the private car continue to
dominate transport practices?**

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Use of the private car is often viewed as highly problematic. It is regularly associated with global physical, social and ecological harms such as climate change and epidemics of lifestyle diseases, including obesity.

Attempts to address these problems generally include provision for day-to-day physical mobility based on alternatives to the private car. Labelled alternative transport, these modes include public transport, walking and cycling. Yet the private car continues as the preferred way to travel in many cities. A deeper understanding of this preference can reveal under explored sites of resistance to alternative transport modes.

This study uses qualitative methods to record very personal barriers to the uptake of alternative transport. Its focus is on the use of the car for the journey to work in suburban Sydney - Australia's largest city. Applying a novel approach to participant selection, the study explores the daily practices and perceptions of those who continue to drive, despite having access to viable alternative transport.

The study finds that resistance to alternative transport is more complex than findings to date suggests. Mobility practices stem from the active integration of skills, images and materials that potentially have little to do with transport. Instead, attachments to the private car, and resistance to alternative mobility, are products of other practices, such as parenting and working. The study reveals the way the private car is deeply engrained in the way people make sense of, and navigate, not only their streets but their place in the world.

The complexity of the relationship between mobility practices and ways of being in the modern world can be represented through the concept of ontological security. Car-based autonomous mobility plays a key role in experiences of autonomy, predictability and acceptance - all of which act to sustain a sense of coherency to modern life. Transition away from car use disturbs this sense of coherency and is essentially ontologically threatening.

This way of thinking about resistance to alternative transport exposes a number of sticking points for its uptake - junctures at which transition away from private car use will only occur in the face of unprecedented disruption to existing ways of 'being' in modern life. The research exposes a series of inconsistencies between the expectations of those planning for, and those anticipated to one day use, alternative transport.

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Abbreviations

BITRE	Bureau of Infrastructure, Transport & Regional Economics
BTS	Bureau of Transport Statistics
HTS	Household Travel Survey
NSW	New South Wales
TDM	Transportation Demand Management
TIB	Theory of Interpersonal Behaviour
TPB	Theory of Planned Behaviour
VKT	Vehicle Kilometres Travelled
WHO	World Health Organization

Introduction

Sociologist John Urry opens his influential work, “Mobilities” with the observation that “It sometimes seems as if all the world is on the move” (Urry 2008, 3). From this starting point, Urry goes on to explain the scale at which movement – of not only people, but also of ideas, ideals, objects and images – is increasing.

Technological innovation has facilitated an unprecedented array of opportunities for mobility. It has enabled the intriguing emergence of connections detached from embodiment (Bauman 2010). It is now possible to fulfil modern life’s prerequisite for mobility while remaining all but physically motionless. Despite this relatively novel capability, we are just as physically mobile now as we ever have been (Newman and Kenworthy 2011; Hillman 2012). And while this continued propensity to move has a range of benefits, it has also come with problems. These problems have positioned physical mobility as something that needs to be regulated. Intervention on some level is required to ensure its negative externalities are minimised.

A very public face of this regulation in many developed (and increasingly developing) countries is the promotion of day-to-day physical mobility based on alternatives to the private car. The endemic use of the private car, often referred to as automobility¹, engenders particularly scathing critique for its relationship with global physical, social and ecological harms such as climate change and ‘epidemics’ of lifestyle diseases including obesity. As a result, automobility has become something regularly situated as a problem that needs urgent attention.

Ways of being physically mobile without the use of the private car are increasingly promoted in multiple regulatory arenas as a solution to the problem of automobility (Docherty and Shaw 2008). Collectively labelled alternative transport, these substitute

¹ The term automobility is used in this thesis as a label for private car-based autonomous mobility.

modes include public transport (such as fixed rail, light rail and bus transport) and active transport (such as walking and cycling²). Despite this endorsement, there remains resistance to alternative transport (Sheller 2012). In many cities, mobility based on the private car continues to dominate as the preferred way to satisfy requirements and desires to be mobile.

Successful promotion of alternative transport modes needs to be underpinned by better understandings of the collective preference for automobility. This is the focus of this thesis: what are the benefits associated with automobility and how do these benefits maintain resistance to alternative transport? My central proposition is that automobility's dominance can be explained by a series of benefits intimately linked to car use. These benefits extend beyond simply those associated with saving time. They also include, for example, heightened experiences of acceptance and autonomy, and sensory encounters with comfort. I hope to make clear that these benefits are individually lived yet have become inextricable from ways of being in modern life. They provide a degree of security in a world often experienced as unpredictable and uncontrollable. I also propose, however, that these seemingly internal experiences are similarly shaped by cultural patterns and routines which act to reiteratively reinforce private car use.

The journey to work in Australia's largest city, Sydney, is used to explore automobility's appeal. As a low-density city characterised by a dispersed geography of employment, Sydney's 4.6 million residents are highly reliant on the private car for day-to-day mobility. This reliance endures in the face of attempts to regulate and plan for the use of other modes, and, in some cases, the availability of time competitive alternative transport. Accordingly, this study has an intentional focus on those who continue to drive in the face of viable, time competitive alternatives. Using a systematic process of trip substitution analysis, a group of people were identified who could use alternative

² Public transport is often treated in health-related literature as active transport. The distinction of 'active transport' within the phrase 'alternative transport' has been retained in recognition that barriers to walking and cycling are often explicitly different to those articulated for public transport. As outlined above, any reference to the collective of transport modes, other than the private car, is termed 'alternative transport'. Where relevant, distinction is made between public and active transport as alternative modes.

transport to get to work in the same amount of time it currently takes them to drive. These people then participated in a series of in-depth interviews where deeper attachments and motivations for private car use were explored. This approach has enabled development of the multi-layered understanding that informs the study's central proposition relating to the individually lived, yet culturally inculcated, link between security and automobility in modern life.

Thesis Structure

This thesis is structured in three parts: Context, Approach and Outcomes.

The first part, Context, provides a broad background to the study of automobility. The second part, Approach, describes my methodology and methods and also articulates my theoretical position. The third part, Outcomes, is dedicated to the findings of this research and concludes with a discussion of the implications of these findings on automobility's endurance.

I have sought to question the idea that the benefits of automobility extend beyond those associated with instrumentality. This has required detailed explorations of the way automobility is embedded in negotiations of modern life with such negotiations potentially individually experienced yet culturally inculcated. The complexity of questioning implied by this position warrants the use of a grounded methodology and qualitative methods (decisions described in detail throughout the second part of the thesis). As such, although its three-pronged structure implies a very traditional and temporally coherent approach to the research, in reality, the development of my findings (Chapters Seven, Eight and Nine) as well as my theoretical position (Chapter Four) occurred concurrent to the process of data collection and analysis described in Chapters Five and Six. Following a constructivist approach to grounded theory (Charmaz 2006), this entire process occurred against the diverse background of existing automobility research, some of which is explored in Part One of the thesis: Context.

Each of the three parts contains three chapters.

The first chapter uses empirical evidence from Sydney, to explore the role automobility plays in fulfilling modern life's continued demand for day-to-day mobility. I suggest that automobility appears to be a 'sticky' problem – one that will not necessarily drift away easily, as though a fad or fashion. The chapter goes on to problematise automobility. Using the lens of human health and wellbeing, I examine some of the negative impacts of an auto-mobile society. Having established the complexity of the automobility problem, I conclude with an exploration of some of the more tangible benefits associated with car use. This preliminary exploration provides initial insights into some of the themes that will be explored in-depth throughout the thesis.

Chapter Two examines some of the more conventional answers to the question of why people drive cars. It is a primer on a diverse and burgeoning body of research examining mobility practices, with a specific focus on relatively individualised motives for car use. These range from the more obvious role of factors such as accessibility and cost, and progress to cover more tacit motives such as cultural attachments to autonomy and the object of the car itself, as well as the role of emotions, identities and habit. Its principal finding is that resistance to alternative transport, and the attraction to automobility, cannot be explained by utilitarian motives alone. While a wide range of objective variables such as distance and time influence decisions to drive, various subjective factors such as attitudes, emotions, perceptions and interpretations are also operative.

Chapter Three starts to unpack and question the ways mobility practices have been conceptualised in research. This includes theorisations of the influence of systems and structures of provision as well as more traditional ways of thinking about transport behaviour. The chapter concludes with a critical synthesis of various theoretical traditions by contrasting each conceptualisation's treatment of the influence of structure as opposed to individual agency on mobility. This critique paves the way for my own approach and concludes Part One of the thesis.

Expanding on the themes and theorisations already explored in Part One, Chapter Four describes my theoretical position. Eschewing traditional utilitarian, psycho-social and systemised approaches, this position emphasises the duality of structure and agency in sustaining automobility, which, I propose, is articulated through practice. I propose that automobility is a product of practices that are both structured and structuring and that meanings and sensibilities are as central to understandings of the persistence of the car's hegemony as rational-instrumental and other approaches emphasising the car as technically and politically cemented. As mentioned above, a grounded theory methodology enabled the development of this theoretical position, which was ultimately informed by a series of in-depth interviews.

As mentioned above, to question the way the car's time saving capacity might sustain automobility, I chose to interview only people whose current car-based journeys could be undertaken in the same amount of time using alternative transport. Chapter Five details the complex method of trip substitution analysis used to identify and recruit participants who fit this criterion. A questionnaire was used to gather data on the car-based journey to work for 856 people working in outer suburban Sydney. A trip substitution analysis was applied to 119 of these journeys, to identify those who could substitute their existing car-based trip with an alternative transport trip and not experience a time penalty. This process identified 26 potential participants for in-depth interview.

Chapter Six details the methods used to select participants, conduct interviews and analyse data. In brief, I conducted two semi-structured interviews with 15 participants. As outlined above, participants were purposefully selected primarily on the basis that their existing car journey to work could be undertaken by alternative transport modes in a similar amount of time as it currently takes them to drive. To confirm this and to prolong my involvement in the data collection process, I physically undertook each participant's alternative journey to work, prior to commencement of the interview process. Interviews did not focus solely on the participants' transport practices. During the interview, I encouraged participants to speak without restriction about the things that were important to them, exploring ideas they had about where they'd like to be in

the future, how they work towards these goals as well as their priorities, values and special interests. Throughout the entire process of trip substitution, participant selection and participant interview, I kept a journal of reflective memos which were subsequently incorporated into the data analysis process. Chapter Six concludes with the articulation of a series of key conceptual themes developed through data coding and analysis. These themes are then used in the following two chapters to frame a series of benefits study participants gain from both the car and being auto-mobile.

Chapter Seven opens with an introduction to the study participants and proceeds to unpack the themes identified through data analysis. Many of these themes loosely reference those described in Chapter Two, indicating that my research confirms some of the existing findings in the literature on automobility's endurance. Consistencies and inconsistencies with recent research are referenced throughout the chapter. Inconsistencies include participant perceptions of the prestige associated with the material object of the car, as well as participant disinclination to translate their cycling for recreation into cycling for transport. The most striking area of inconsistency, however, relates to participants' perceptions of time. This study's approach to participant selection attempted to remove time as a barrier, by ensuring each participant could travel to work by alternative modes in the same amount of time as it currently takes them to drive. Nevertheless, time continued to feature strongly in the way the participants spoke about their choice to drive. The chapter concludes that perceptions and practices of automobility are more complex and more embedded in participants day-to-day negotiations of modern life than has been conceptualised by existing research.

Chapter Eight delves deeper into the meanings of car use told through the data and is dedicated to a final core theme. As my understanding of the data developed, it became obvious that automobility plays a critical role in the pursuit of individual and collective interpretations of the things that matter in life. Resistance to alternative transport is, therefore, a way to protect and in some cases maintain this pursuit. I propose that at the centre of this story is the idea that automobility is linked to a concept known as ontological security. Chapter Eight is used to introduce and examine

this proposal, with examples from data employed to demonstrate the way study participants experience and use automobility as ontologically securing.

The final chapter, Chapter Nine, discusses the implications of a conceptualisation of automobility based on ontological security on the potential for the uptake of alternative transport. I propose that transition away from private car use will occur only through modification of practices within the boundaries of the components of ontological security. I also outline a number of 'sticking points' or deep-seated and complex accumulations of socio-technical structures and internalised pursuits that this study exposes. Where possible, I articulate inconsistencies between the expectations of those planning for alternative transport and those anticipated to one day practice its use.

The thesis concludes with recommendations for future research and a discussion of the study's limitations. I make brief comments on overarching implications of its findings on transport and planning policy.

My Position

While debate continues as to the nature of rigour and validity in qualitative research (see for example Cho and Trent 2006; Koro-Ljungberg 2008), the "gold standard" of qualitative rigour is still accepted as Lincoln and Guba's (1985, 1989) fourth generation evaluation (Liamputtong 2009, 21, see also Creswell 2007 and Padgett 2008). These criteria include confirmability, meaning that the findings of my study "are determined by the conditions of the inquiry and not by the biases, motivations, interests or perspectives of the inquirer" (Lincoln and Guba 1985, 290). In the pursuit of confirmability, and subsequently rigour, I conclude this introduction with some notes on my position prior to entering into this research.

My interest in automobility primarily stems from my training and professional experience in environmental management and town planning. I have a keen awareness of the problems associated with automobility and am particularly

concerned by the health impacts of the dispersed urban form which is both car-constructed and car-contingent. As a planner I have been trained to consider context and in working through the problem of automobility I consider it extremely important to listen to those whose lives are structured around car use. As a result, in answering my primary research question, I have chosen to speak to a group of people living everyday lives in a city characterised by a dispersed geography of employment and structured around car reliance. I spoke to these people not only about the way they travel, but with a distinct focus on what it is the car enables them to do. I consider the car in the context of life outside of and around automobility in an effort to explore why people continue to drive.

From a more personal perspective, I have always been interested in cycling. I have lived and raced professionally, and represented Australia, in a number of countries in Europe and North America. My interest in bike racing did not always translate to riding for transport and it was not until I had retired from racing that I started to use the bike as a way to negotiate my home city of Sydney. My experience on a bike has influenced this study in a number of ways and some of these are the subject of reflection throughout this thesis. Of importance here, however, is that my daily encounters with trip chaining by combining the use of the bike with public transport provided inspiration for this study. After experimentation with several modes to get to work, including driving, I realised that the fastest way for me to commute was by combining a bike ride with a train trip. This made me question many of the assumptions about transport that I had been taught and had used in my work as a town planner. I began to consider the idea that people's transport decisions are not simply a matter of rational choices about things such as time and cost. I wanted to find out how others view their decision to travel the way they do and use this knowledge to explore automobility's endurance.

Part One: Context

Chapter One: Automobility. For better or worse?

Introduction

Automobility as a barrier to alternative transport is a phenomenon interesting enough to justify attention from the social sciences. By virtue of its relationship with global physical, social and ecological harms such as climate change and ‘epidemics’ of lifestyle diseases such as obesity, automobility has also become something regularly positioned as a problem that needs urgent attention.

This chapter first explores the role automobility plays in fulfilling modern life’s continued demand for day-to-day mobility. Empirical evidence from Sydney, Australia, is used to sketch the current contours of daily mobility in an aspiring global city characterised by dispersed urban form and reliance on the private car. This exploration aims to demonstrate the extent to which automobility endures in the face of technological change and obvious negative externalities. The chapter goes on to problematise automobility. I assume a relatively anthropomorphic view to conceptualise the car’s negative externalities as primarily related to human health and wellbeing. Having examined the problems generated by the car, the chapter concludes by exploring some of the benefits associated with automobility, providing initial insight into the themes that will be explored in-depth throughout this thesis. Why, in the face of problems, and in many cases the existence of viable alternatives, do people continue to drive cars?

How Are We Mobile?

This section draws primarily on empirical evidence from Sydney, Australia. It paints a broad picture of the way an insatiable appetite for movement is satisfied in a city characterised by low residential density, a dispersed geography of employment and a dominant culture of indifference to alternative transport modes. The use of Sydney as a case study is further discussed and justified in Chapter Five (see pages 96-105). Although the data used in this analysis relates to Sydney, there is little reason to believe that the mobility patterns described are not, in many ways, comparable to other similarly-structured cities around the world.

In many industrialised and industrialising cities, personal movement patterns are overwhelmingly car-dominated (Millard-Ball and Schipper 2011). Developing countries are positioned to replicate this trend (Dargay et al. 2007; Chamon et al. 2008; Moriarty 2012; Wolfram et al. 2012).

Data from the 2010-2011 New South Wales (NSW) Bureau of Transport Statistics (BTS) Household Travel Survey (HTS)³ shows that over 77 per cent of Sydney's households own one or more cars, with 13.6 per cent of households owning three or more vehicles. The average Sydney resident makes 67.9 per cent of his or her weekly trips in a private car, with car-based mobility accounting for 79.1 per cent of total distance travelled. Private cars dominate mode-share for all trip purposes, including the journeys to work and school, with 70 per cent of commute-related and 55 per cent of education-related trips made using a car in 2010/11. Furthermore, cars dominate mode-share for all trips over one kilometre in length, with 78 per cent of trips between two and five kilometres completed in a private vehicle (BTS 2012a).

Complementing figures on continued car use is some evidence of renewed cultural and political interest in alternative transport, particularly cycling. Australians, like many other nations around the developed world, are increasingly interested in cycling. In

³ Each year over 5,000 households are chosen at random to participate in the HTS. The survey collects information about people's day-to-day travel, such as where they go, when they travel, the purpose of the trip, the means of transport used and the costs associated with the trip. Three or more years of data are pooled to produce reliable estimates of travel at a particular geographical level. The survey is conducted by the BTS, on behalf of Transport for New South Wales, the state government agency responsible for transport planning for NSW, Australia.

2006, cycling was the third most popular physical activity in terms of regular participation for Australian adults (Bauman et al. 2008). Additionally, most Australian households have access to a bike, with bicycle industry figures suggesting bicycle sales are the subject of near linear growth (Bauman et al. 2012). Various assessments of 2011 Australian Bureau of Statistics Census⁴ Journey to Work data also allude to an increase in cycling for the commute (Zander and Rissel 2012). A report by four prominent academics also cites Australian capital city journey to work data to suggest cycling to work in Sydney increased by 17.2 per cent between 2001 and 2006 (Bauman et al. 2008).

The significance of this increase has been called into question, however, by research suggesting that while there may be modest increases in cycling for the journey to work in inner urban areas, cycling mode-share is actually decreasing in many of Sydney's suburbs (New and Rissel 2008; Zander and Rissel 2012). It is possible that renewed political and cultural interest in cycling, evidenced by increased bicycle sales (Cycling Promotion Fund 2008; Bauman et al. 2012), has affected a slight increase in cycling for recreation rather than for transport, and perhaps an increase in bikes that are bought and not used (Bauman et al. 2012). The BTS, for example, cite evidence that while an encouraging 15 per cent of Sydney's population rides a bike each week, only 27 per cent of this riding is done for transport (BTS 2012b). Data indicating modest increases in cycling for transport hide considerable intra-urban differences, with cyclists in inner urban areas taking advantage of newly-constructed infrastructure and an undeniable culture of support to replace at least some of their car trips with a trip on the bike (New and Rissel 2008; Zander and Rissel 2012). Perhaps the remainder of the 15 per cent of those riding have simply discovered the joy of going for a ride.

Figures on other alternative modes, such as walking and public transport use, tell a similar story. Over the long-term, the data for Sydney indicate that average growth rates for walking and train use are marginally stronger than for all other modes, including bus and the private car (BTS 2012a). Again, this is likely the result of a strengthening of opportunities to live and work in close proximity to the Sydney

⁴ The Australian Bureau of Statistics conducts the Census of Population and Housing every five years. The Census collects data on the characteristics of the population and its housing, including the mode of transport to work. The last Census was conducted in August 2011 with data from this count progressively released throughout the latter half of 2012 and into 2013. Where possible, 2011 data is referenced in this thesis.

central business district (Brooker and Moore 2008) and could also be influenced by the provision of new rail infrastructure. Those living in higher-density areas in and around the central business district are more likely to have access to rail infrastructure and less likely to need to travel long distances to access desired destinations (BTS 2012a). Those working in the central business district are more likely to commute using public transport (Xu and Milthorpe 2010).

The idea of there being intra-urban differences in the way people travel around low-density car dominated cities forms a key component of Sydney's selection as a case study for this research. This selection is justified in detail in Chapter Five (see pages 96-105). The point here is that while there is some indication of a strengthening in support for alternative transport modes, this support is extremely contextual and confined to certain urban areas.

Data indicating hints of transition towards walking, cycling and public transport use has been sourced from many cities around the world and subsequently used to fuel speculation that car use is actually on the decrease. There have been suggestions that modest increases in the use of alternative transport (Newman and Kenworthy 2011; Goodwin 2012), expanding interest in 'urban' lifestyles (Morrow-Jones et al. 2004; Sheller 2012), increased densification of cities (Newman and Kenworthy 2011), weakening cultural attachments to the car (Simpson 2009; Geels et al. 2012), high oil prices and decreased investment in road infrastructure (Millard-Ball and Schipper 2011) have resulted in a tangible and global shift away from car use. Other authors, however, point to the strong link between personal income and vehicle kilometres travelled (VKT) to suggest that any sign of recent decreases can be attributed to global economic instability rather than a trend of decreasing aggregate VKT (for example Australian Bureau of Infrastructure, Transport and Regional Economics (BITRE) 2012).

Indeed, there is strong evidence to suggest that while the domination of the private car is not necessarily decreasing, its growth is at least starting to plateau. Following exponential increases throughout the period from the 1950s to the late 1970s, growth in VKT per capita for many cities around the world, including cities in Australia, has gradually slowed (Stanley and Hensher 2009, Metz 2010; Millard-Ball and Schipper 2011; Newman and Kenworthy 2011). Newman and Kenworthy (2011, 33), for example, cite data from the "Global Cities Database" (a database that collates transport statistics from 46 cities in the North America, Australia, Canada, Western

Europe and Asia) to demonstrate the way growth in car use per capita has slowed – from 42 per cent in the 1960s to 23 per cent in the 1980s. In the period 1995-2005 growth in car use per capita slowed to 5.1 per cent. The point at which growth stabilises to zero is often referred to as ‘saturation’. The Australian BITRE suggest that by 2011 saturation had occurred in most Australian cities. Figure one below demonstrates this trend for Sydney, indicating that saturation was reached in 2005.

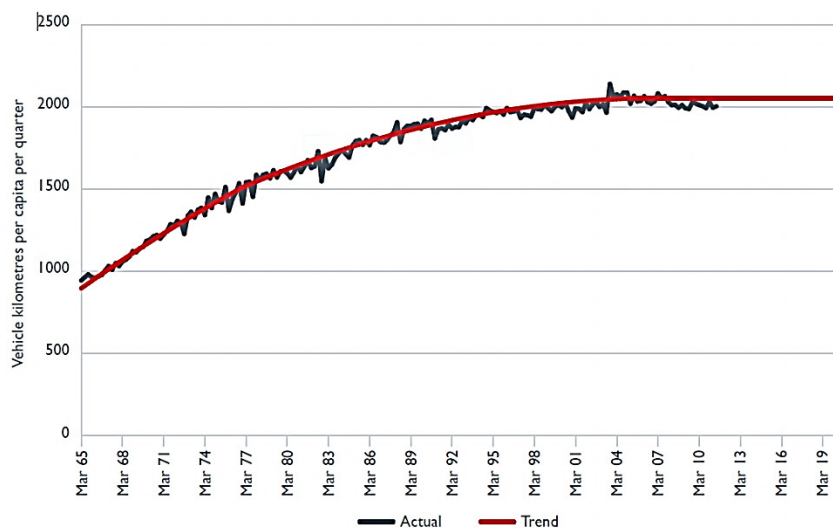


Figure 1.1: VKT per capita in Sydney 1965 to June 2011 forecast to March 2019

Source Australian BITRE 2012, 45

Attainment of saturation, or “peak car use” (Newman and Kenworthy 2011, 31) is often attributed to there being a collective budget for the amount of time people are willing to spend on travel. The time budget concept suggests there are only 24 hours in the day, and there is a societal threshold as to how much of that 24 hours will be spent travelling. If this is the case, and in the absence of increased average travel speeds or limitless utility gained from accessing endless destinations (Metz 2010), VKT per person must eventually cease growth. Although various nuances of this proposition have been critiqued in the literature (see for example Schwanen et al. 2002), its basic premise that VKT per person cannot assume a position of indefinite growth holds true.

Of importance here, however, is that while there is very strong evidence to suggest that growth in per capita VKT has peaked, aggregate growth in VKT remains inextricably linked to growth in population. As a result, even if per capita VKT remains static, it is likely that car use will continue to grow in many cities, including Sydney, simply because of projected increases in population. There is little evidence to suggest, therefore, that the current trend of near linear increases in aggregate urban VKT will not continue.

Data to date therefore suggests that the hegemony of the car is likely to remain extremely difficult to challenge. Many of the problems associated with continued car use stem from this position of seemingly unassailable growth and the following section goes on to explore some of these problems in more detail.

Problematising the Car

“Autogeddon comes to stalk the world”

(Urry 2012b, 16).

There is a substantial amount of research on the impact of the automobile and ‘being auto-mobile’ across a diverse collection of perspectives. Often this work points to the “impossibilities” of automobility (Böhm et al. 2006, 7) and paints an intense picture of the problems associated with the car and its contemporary link to mobility. In their introduction to a series of articles on automobility, for example, Böhm et al. propose that “if continued, a car-based regime generates widespread problems – ecological collapse, war, widespread death and ill-health and economic dysfunctionality” (Böhm et al. 2006, 9). They propose that these impending ‘issues’ cannot be resolved without abandonment of the regime itself. John Urry labels automobility a “Frankenstein-created monster”, where the system of automobility as now established is “impossible to break from” (2008, 120). In their review of options for sustainable car use, Sperling and Gordon proclaim that “Cars are arguably one of the greatest man made threats to human society” (Sperling and Gordon 2009, 1).

This view of being auto-mobile as harmful is not new in that cars have been portrayed politically and culturally in widely negative and often highly emotive terms since their popularisation in the early 20th Century (Miller 2001). Matthew Paterson’s text on the

politicisation of the automobile, for example, cites Kenneth Grahame's much loathed *Toad of Toad Hall*, whose motor car driving terrorises pastoral England, as an original classic expression of cultural opposition to car use (Paterson 2007, 33). As early as 1956, British planner Ian Nairn's formative piece "Outrage" notably questioned the infiltration of placeless suburbia along England's roads (Nairn 1956). Others have focussed on the powerful cultural backlash against road building which has been labelled the archetype development by those questioning the nature of democracy in the planning process (Robertson 2007; Bonham 2008; Merriman 2009). Emotive discourse aroused to problematise the car can therefore be found in both academic literature and popular culture aimed at overcoming the car's hegemony (Simpson 2006). What is it, exactly, about the car that produces such emotion? For the "gurus of automobility" (Latimer and Munro 2006, 33) it is the idea that the car is all pervasive and controlling. The theoretical basis of this idea is further explored in this thesis through a review of the new mobilities paradigm in Chapter Three. Here, the car as autonomous mobility is systematised, an autopoietic regime embedded in notions of individual consumption, technological and industrial advancement, cultural legitimisation and privatisation (Urry 2008, 115-118). This system simultaneously brings freedom and constraint and as such 'lures' a social way of being that is characterised by intense flexibility. This is a society where time, and by implication an individual's ability to be present, is micromanaged and fragmented. And it is car-based autonomous mobility that is (in many ways) responsible for this systemisation, time-space fragmentation and irresistible coercion.

To problematise the car in this sense is to suggest that there is something inherently wrong with its widespread systemisation. The car-as-monster portrayed by the new mobilities paradigm's treatment of car-based autonomous mobility is not monstrous simply because it is systematised. It is the systemisation and consequent reproduction of the by-products, the consequences both intended and unintended, that creates the problem. Many of these consequences can be understood in terms of the car's impact on popular health and well-being (Frank et al. 2010; Douglas et al. 2011). For example, the impact of road accidents, air and noise pollution, reduction in opportunities for physical activity, lost productivity and a weakening of community cohesion. The following discussion frames the problematisation of the car in terms of the way the car impacts human health and well-being. While mindful of the impact the car has on the

bio-physical environment, I follow geographers Smith (1990) and Simmons (1996) to assume a relatively anthropomorphic view of this impact.

The Human Cost of Car Accidents

Traditionally, transport-related health research has focussed on the links between automobility and acute morbidity and mortality from car-related accidents (Ewing and Dumbaugh 2009). In 2011, road accidents in Australia were responsible for 1,296 fatalities, equating to 5.68 road accident fatalities per 100,000 people (Australian BITRE 2012). Less information exists about those seriously injured in road accidents. In 2006, however, it was estimated that 20 people were seriously injured for every recorded road death in Australia (Australian BITRE 2008). The health impact of road accidents extends beyond acute and physical injury. The long-term psychological effects of car accidents include post-traumatic stress disorder and other psychiatric conditions, which the World Health Organization (WHO) estimates affects up to 25 per cent of survivors of serious accidents (WHO 2000).

The car does not only pose injury risk to its drivers and passengers. The physical risks posed to pedestrians are primarily a result of the need to share space with the car (Australian BITRE 2012). Across the spectrum of severity, cycling accidents are actually less likely to involve a car (Biegler et al. 2012), however cars are almost always implicated in fatal cycling accidents (Centre for Accident Research and Road Safety Queensland 2012).

The Car and Physical Inactivity as a Risk Factor for Chronic, Non-Communicable Diseases

Car-related concern in public health research has more recently turned to the impact of cars on chronic, non-communicable diseases such as type II diabetes, heart disease, some cancers and depression. These diseases are on the rise globally and represent an escalating public health problem. In many countries chronic, non-communicable diseases account for 80 per cent of the total burden of disease and injury and more than two thirds of health expenditure (Commonwealth of Australia 2010).

Physical inactivity is a commonly identified risk factor for many of these diseases, not least because of its connection to other risk factors such as obesity and being overweight (Booth et al. 2000 and 2005). Cars are related to physical inactivity in a number of ways. They remove the need to use active modes of transport, including walking, cycling and public transport. They hinder opportunities for those who prefer to travel by active modes, often replacing or compromising essential infrastructure such as footpaths and bike paths. The popularity of the car also detracts from the critical mass required to justify investment in public transport infrastructure and that required to encourage active transport (Jacobson et al. 2011). Further, land dedicated to car-related infrastructure, including land for parking, is land that cannot generally be used for recreational physical activity. Finally, the noise and air pollution associated with car transport has the potential to detract from the provision of pleasant recreational environments.

Various studies have gone to great lengths to connect the rise in rates of obesity and overweight with the rise in car use. Bell et al. (2001), for example, examined the transition from active to car-based transport modes in China over eight years. At the conclusion of their study, they found a two-fold increase in the risks of obesity for those switching from active to car transport. In their study of 10,878 residents of the Atlanta region in the United States of America, Frank et al. (2004) were able to quantify that each additional hour spent per day in a car was linked with a 6 per cent increase in the likelihood of obesity (adjusted for socio-economic status). In an Australian study of 462 Sydney residents, Wen et al. (2006) demonstrated a significant positive association between overweight and obesity and higher frequency of car use. Jacobsen et al. (2011) modelled the vehicle miles travelled by licenced drivers against obesity levels in the North America and found a strong correlation between rising VKT and rising rates of obesity but with a six year lag time. Interestingly, they account for this lag time by referencing Chow and Hall (2008) who found that the body takes 5.5 years to achieve a steady state in response to changes in physical activity. Other research on the link between overweight and obesity and car use include Courtemanche (2011) and Florez Pregonero et al. (2012).

Concurrent to studies linking physical inactivity with car use has been research linking alternative transport to increased physical activity across all age groups (Besser and Dannenberg 2005; Wener and Evans 2007; Edwards 2008; Villanueva et al. 2008; Wen

and Rissel 2008; Faulkner et al. 2009; Larsen et al. 2009). As discussed above, physical activity is a key determinant of health and physical inactivity is a risk factor for several increasingly common chronic diseases (Booth et al. 2000). At present, about 50 per cent of Australians do not undertake the amount of physical activity required to gain health benefits (Bauman et al. 2008). In response, utilitarian, day-to-day activities have regained recognition as a way to reincorporate physical activity into everyday life (Transportation Research Board 2005). This way of thinking about physical activity results from evidence suggesting that when physical activity is tied to another purpose (for example, travel from home to work) it is more likely to be sustained over time than more structured physical activity (for example, attendance at a gym) (Hahn and Craythorn 1994; Sallis et al. 1998). There is also evidence that moderate, regular physical activity is more likely to be sustained over time than short and intermittent bursts of more intense activities (Sallis and Glanz 2006). Walking and cycling between destinations, or to and from public transport stops, is a type of utilitarian physical activity that can be relatively moderate and incorporated in the daily requirements of everyday life. While debate continues regarding the impact of confounding variables such as residential self-selection (Handy et al. 2006; Handy et al. 2009), many studies have demonstrated the link between the use of alternative transport modes, increased physical activity and better health and well-being (Sallis et al. 2004; Bassett and Glandon 2008; Edwards 2008; MacDonald et al. 2010; Pabayo et al. 2010).

The Car and Healthy Eating

The car, however, is not only implicated in the 'energy out' (physical activity-related) component of the equation that must be balanced to maintain healthy weight. Research has identified a number of ways that automobility impacts on societal norms of sourcing and consuming food (Norberg-Hodge et al. 2002; Banwell et al. 2006; Burns and Inglis 2007; Roberts 2011). The car sponsored coercion into the interminable busyness characteristic of modern life promotes convenience eating, where energy dense options from takeaway fast food outlets and other pre-prepared foods are increasingly attractive in a time stressed world.

Further, the low-density urban form facilitated by car use has separated opportunities to source healthy food by distances only feasibly covered by the car (Coveney and

O'Dwyer 2009). In most cities in the developed world it is now supermarkets rather than smaller and local shops that provide the easiest access to healthy, reasonably priced food (French et al. 2001; Morland et al. 2002; Morland et al. 2006). The replacement of local shops within walkable distances of homes with supermarkets in larger shopping hubs has therefore made fresh, healthy food less accessible, particularly for those who are not auto-mobile.

The encroachment of urban uses onto peri-urban agricultural lands also threatens healthy food production in close proximity to consumers (Mason and Knowd 2010). In addition to supplying fresh quality produce to cities, local food production is an integral component of community building, providing the produce for farmers' markets and land for community gardens (Thompson et al. 2007, Knight and Riggs 2010; Pearson and Pearson 2010).

The Car, Air Pollution and Disease

The association between automobile emissions and respiratory disease as a chronic, non-communicable disease is well researched (see for example Buckeridge et al. 2002; Kjellstrom et al. 2002 and Woodward et al. 2002) with data suggesting that premature mortality due to vehicle related air pollution is similar to the accident road toll (Kunzli et al. 2000; WHO 2001; Scoggins 2004). Emissions from cars contribute to air pollution by augmenting concentrations of ground level ozone, particulates, nitrogen dioxide and carbon monoxide in the air. This augmentation can have negative effects not only on the respiratory system (lungs and airways), but also on the cardiovascular system (heart function and blood circulation) (Simpson et al. 1997; Morgan et al. 1998; Pope et al. 2002). For example, a recent study of 52,061 Danish participants associated traffic air pollution with mortality from cardiovascular diseases, after adjustment for various confounding variables such as traffic noise (Raaschou-Nielsen et al. 2012).

On a positive note, research suggests that the ambient concentration of nitrogen dioxide is slowly declining in many industrialised cities (Kjellstrom et al. 2002). In this case, the use of catalytic converters for vehicle emission reduction has mitigated the impact of increasing VKT. Epidemiological evidence has been used to demonstrate that air pollution, even at levels less than those commonly used air quality standards, increases mortality rates (Dockery et al. 1993; Brunekreef and Holgate 2002; Pope et

al. 2002; Franklin et al. 2012). The consensus is that the technological fix provided by the catalytic converter and even increased use of high quality diesel fuels will not mitigate the link between the car, air pollution and disease (Host et al. 2012; Fowlie et al. 2012; Labranche et al. 2012; Yang and Holgate 2013).

The Car, Climate Change and Health

Carbon dioxide, another air pollutant generated by the combustion of fuel and associated with car use, does not have direct health effects at the very minimal concentrations occurring in the ambient environment (WHO 2000). It is, however, the main 'greenhouse gas' causing global climate change (DeCicco et al. 2006; Banister 2011), and as such, indirectly contributes to the global health impact of such change (Hickman et al. 2010). Transport contributed 13 per cent of Australia's net greenhouse gas emissions in 2007. Road transport was the main source of transport emissions in 2007 and passenger cars were the largest transport source (Department of Climate Change 2009). Transport emissions are also one of the strongest sources of emissions growth in Australia. Emissions from this sector were 34.6 per cent higher in 2009 than in 1990, and on average have increased by around 1.6 per cent annually. Emissions from road transportation increased by 32.8 per cent between 1990 and 2009 and emissions from passenger cars increased by 17.6 per cent. The resultant health impacts of greenhouse gas induced climate change are also well researched and extensive (McMichael et al. 2003). As reviewed by Younger et al. (2008) and Capon et al. (2009) they extend well beyond chronic, non-communicable diseases to include increasing rates of infectious disease, increased vulnerability to natural hazards such as fire, flood and extreme heat, as well as societal dislocation resulting from rapid and enforced changes in location and livelihood.

The Car, Stress and Community

There are other less tangible links between automobility and poor health outcomes. The way the car facilitates the rush and busyness previously mentioned undoubtedly contributes to the stress associated with the measurable rise in mental illness such as anxiety and depression (Stroud et al. 2008; Wener and Evans 2011). Traffic noise has

also been shown to induce nervousness, sleep deprivation, hearing impairment and depression (Stansfeld and Matheson 2003; Gidlöf-Gunnarsson and Öhrström 2007; Miedema 2007). Further, the physical restriction of being stuck in traffic increases blood pressure and induces sensations of frustration (Wickens et al. 2011). This in turn leads to impaired judgement, anxiety and increased likelihood of causing or being involved in a car accident (Dula et al. 2010). Some studies have shown that users of alternative transport are more likely to report commute-related experiences of satisfaction and peace (Gatersleben and Uzzell 2007; Paez and Whalen 2010; Lajeunesse and Rodríguez 2012).

Through their ability to transform streets into depersonalised places of danger and rush, cars, and the roads they use, have also been implicated in the dispersion of community fabric and community cohesion. Geographers such as Ronald Horvath have explored in-depth the way cars transformed streets from spaces for people to “machine spaces” (Horvath 1974, 168). Jane Jacobs also famously identified cars as “powerful and insistent instruments of city destruction” (Jacobs 1961, 352). This encroachment of the car into everyday spaces of connection and resultant dispersion of community is another tangible risk factor to various types of mental illness, including anxiety and depression (Nguyen 2010). Roads that are primarily designed for cars are not perceived as safe places to be unless one is surrounded by the cocoon of a car (Fincham 2006). As a result, roads for cars are generally not seen as places to do anything other than drive.

Grannis (2009) suggests that community cohesion rests on seemingly unimportant but repetitive, casual encounters between neighbours, the repetition of which builds formal, trusting friendships. Walking paths, bike paths and public transport are spaces for these encounters (Putnam 2000; Miles and Song 2009; Hodgson 2012). By inhibiting both the need to walk the streets and the enjoyment of being out and about on the street, cars are often implicated in changing, if not preventing, the casual encounters in the neighbourhood that are so integral to the development of community cohesion. Related to this is the idea that cars have facilitated development of Webber’s community without propinquity (1963). The car has made community irrelevant to residential spatial proximity. Communities are no longer based on casual encounters but are instead organised and privatised (Chaskin and Joseph 2010;

Williams and Pocock 2010). As a result, the places where an individual spends a great deal of time are no longer the places that host one's social network.

Costing Car Problems

Econometric research has made various attempts to monetise the problems associated with automobility as costs to society (see for example the review by Santos et al. 2010a with its focus on negative externalities). Congestion is a negative outcome of excessive car use that is regularly costed. In 1997 the annual cost of traffic congestion was placed at AU\$570 per capita in Sydney and Melbourne (Cervero 1997). In 2007, the Australian BITRE estimated that the 'avoidable' cost of congestion for the Australian capital cities totalled approximately AU\$9.4 billion per year. The Bureau subsequently project this figure to increase to AU\$20.4 billion per year by 2020 (Australian BITRE 2007). From a purely economic point of view, recurrent congestion arises as a result of market failure – demand to drive exceeds the capacity of the network to support driving, yet the market regulator of cost fails to regulate this demand and discourage driving. Sweet (2011) reviews literature on the economic impact of congestion. Impacts range from costs as first-order outcomes of congestion on individuals at the level of transport service, costs as second-order outcomes on economic activity supported by connections beyond the individual, and costs as various types of demand and supply related to the public sector response, such as congestion charging and road construction. Sweet concludes that while research has focussed on the cost of congestion as time or reliability lost, a better measure of the impact of congestion would be to look at the impact of how people adapt in attempts to avoid it. For example, the costs associated with employer relocation or an employee's decision to work from home. Sweet further proposes that in practice the contemporary response to congestion from the individual, business and public sector may be to adapt to congestion rather than attempt politically perilous and logistically difficult congestion mitigation. The review generally suggests that this embrace of adaptation confuses traffic congestion's economic story (Sweet 2011, 391). The figures on the costs of congestion often quoted in both popular and academic literature are therefore somewhat unreliable as a way to problematise the car (Tranter 2012).

The Car and Equity

As with many public health issues, the negative effects of automobility are disproportionately borne in disadvantaged communities. At the global scale, 90 per cent of injuries associated with road traffic crashes occur in low and middle income countries (WHO 2009) and pollutant levels are higher in major cities in low income countries than in cities in high income countries (Douglas et al. 2011).

Mobilities research concerns not only mobility but also immobility and potential mobility (Büscher and Urry 2009; Sheller 2012). Mobility is portrayed as capital, with issues of justice and the 'right' to mobility increasingly explored as a component of social inequality (Kaufmann et al. 2004; Uteng and Cresswell 2008). Kaufmann et al. (2004) coined the term "motility" to describe this relatively new face of social disparity.

In the developed world, the lower-density urban form facilitated by and supportive of private car use is often implicated as sustaining inequality. Inequity here is fed by unequal access – to jobs, services, schools, health care and other resources otherwise only available to the auto-mobile (Hine and Mitchell 2003; Clifton and Lucas 2004; Currie 2010; Delbosc and Currie 2011). Deprivation of access results in an exclusion from appropriation and an inevitable demise in the competence required to negotiate modern life (Kaufmann et al. 2004; Lucas 2010; Kellerman 2012). Linking social exclusion to car-dependent urban form, however, suggests that disadvantage can be addressed through the relatively simple mechanism of providing increased access to automobility (Stanley et al. 2011). In this light, various studies have demonstrated the ways that cars can be instrumental in facilitating more equitable access to resources, including employment opportunities (Ong 2002; Raphael and Rice 2002; Gurley and Bruce 2005; Baum 2009; Sandoval et al. 2011). This raises the ambiguity in evidence on the role of the car in social stratification. Sandoval et al. (2011), for example, found that the strongest predictor of making the transition from welfare to work in a study in North America was having access to a car. In this sense, the car has created a geography of inequality and subsequently provided a vehicle for equity.

It is also proposed that just as cars have allowed for the increased separation of uses associated with modern town planning and design, they have facilitated separation of class, where roads and the distance they create enable higher socio-economic groups

to live further from poorer areas (Cervero 1997). These areas inevitably attract a greater proportion of investment in infrastructure and services (Knox and Pinch 2006), amplifying the deprivation experienced by those without car access (Macintyre 2007).

Using a health lens, this section has explored some of the problems commonly associated with automobility. The car's hegemony is often portrayed in a problematic light. Negative externalities such as the human cost of car accidents, the separation of community and the car's dominance over other mobility modes are called upon by automobility research to demonise the car. Indeed, as discussed above, in many ways the car lives up to this reputation, creating as many problems as it once promised to take away.

Research on automobility also promotes the way society has been "coerced" by the car (Urry 2004b). Its hegemony is sustained by Foucauldian notions of power, including cultural legitimisation and the car's inextricable link to economic growth (Paterson 2007). In examining the car, however, it is difficult to ignore that its rise has occurred in a social and cultural context that has, in many ways, been overwhelmingly accommodating. Society as a collective of car drivers has not been bullied into automobility nearly as much as it has been regulated into driving slowly, safely and sober. Temporarily putting aside the tacit and underlying political economy so often implicated in sustaining the car's hegemony, to the individual it might appear that there is greater regulatory and increasingly cultural pressure to repress or relinquish the car than there is to revere it. And still, we continue to drive. This suggests that there are undeniable benefits associated with automobility and the remainder of this chapter is dedicated to unpacking some of these benefits.

Promoting the Car

Benefits of Automobility

The default position of mobility-based academic literature tends to downplay the idea that there are very tangible individual and societal benefits to be gained from being

auto-mobile (Lucas and Jones 2009). The way that automobility supports modern life is more often posed as a dilemma to be regulated rather than something to be celebrated and protected (for example Curtis and Low 2012; Low and O'Connor 2012).

The car that is marketed conveniently exposes its benefits, portraying the automobile as the safest, fastest and most comfortable way to negotiate not only traffic but the hectic demands of life. Automobility as advertised and generally popularly accepted has traditionally been seen as both object and system existing to bring people and places together, express various individual and national identities, present a stage for technological advancement and host rites of passage only relatively recently discarded in the modern world.

The car as the great equaliser

Through stimulation of urban design based on non-walkable distances between uses and complexity difficult to service with public transport, the car is charged with creating inequality in access to services, jobs and opportunities for those unable to drive and inextricably linked to social exclusion. As discussed above, mobility is capital in modern life and automobility is imperative to many of the key economic activities that have become the prerequisites for inclusion. The most obvious example is the way the car facilitates participation in employment in many cities around the world (Gurley and Bruce 2005; Goodman et al. 2012).

Inequity associated with the car, however, is not only linked to inequity of access, appropriation and competence. Linking social exclusion to car-dependent urban form wrongly implies that disadvantage can be addressed through the relatively simple mechanism of providing increased access to automobility or the more complex solution of decreasing distance between uses (Currie and Delbosc 2009; Stanley et al. 2011). In this light, various studies, including Baum (2009) and Sandoval et al. (2011), have demonstrated the ways that cars can be instrumental in facilitating employment opportunities. Sandoval, for example, found that the strongest predictor of making the transition from welfare to work in a study in two counties in California was having access to a car.

The question remains as to whether the socio-economic gap between those able to be auto-mobile and those who do not drive could be reduced simply by modifying urban form to bring uses closer together and allow the provision of a logical public transport system. A primary focus that will further unfold throughout this study is that the car not only bridges distance but it also brings an undeniable sense of individual comfort, autonomy and convenience – even when it is used for distances that might be otherwise accessible by public or active transport. Cars provide shelter from the weather, allow carriage of shopping and children and free us from timetables. Cars are also spaces that are relatively private and inherently personal. In this sense, there is an inequality associated with the car that is not necessarily just a product of the sprawling urban form it has facilitated. In the context of the aforementioned studies on the link between car ownership and transition from welfare to work (Baum 2009, Sandoval et al. 2011), it is possible that car sponsored feelings of autonomy, freedom, pride and empowerment impact employability as much as physical access to the workplace.

An alternative view on the car and social interaction

The impact of automobility on social capital, networking and interaction is complex and literature exploring this link is ambiguous (Carrasco and Cid-Aguayo 2012). The car has been implicated in hindering opportunities for locality based interactions and community connection because of the way its smells, sounds, and speeds dominate neighbourhood streetscapes (Taylor 2003; Urry 2008). At the micro scale of the neighbourhood, however, studies have shown that spaces for cars, such as garages and laneways, can also facilitate different opportunities for social interaction. Rear laneways, for example, are often integrated into new urbanist design in an effort to free the actual street from spaces for car parking and manoeuvring, as well as the streetscape from the garages that have so often been labelled an unsightly addition to housing design. In this sense, car-free streets are intended to create streets that are more suitable for social interaction by creating spaces for walking and encouraging casual surveillance. In a survey of three new urbanist neighbourhoods in Toronto, however, Hess (2008) found that the laneways designed to play host to the car created a secondary shared space as residents met while accessing and tinkering from within the garage. It was this space rather than the car-free streetscape that supported casual interaction and became a place of neighbouring as residents followed their cars to the

rear of the property. Hess further found that as a result, street frontage presentation was often neglected. In a survey of four San Diego neighbourhoods with alleys, Ford (2001) also found that residents used laneways for a variety of purposes, including informal socialising with neighbours. Hess concludes that patterns of resident use of the front and back of their properties, and their impact on the sociability of neighbours, is complex. It is not only the noises, sights, smells and concerns for safety associated with the car that discourage interaction in streets. A deeper societal attachment to privacy and aversion to life lived under the constant surveillance of the broader streetscape is potentially also inhibitory to locality based social interaction.

The car as technological chaperone

The automobile industry has traditionally been a driver of technological advancement and innovation (Womack et al. 1990). Legislation to lower carbon emissions of new cars, for example, has spurred a revolution in the development of alternative concepts of propulsion systems and alternative fuels (Ombach 2012). The automobile industry had traditionally been seen as a prolific investor in small to medium innovators in areas such as software and materials development (Brockhoff 1992). The industry is also more likely to engage in cross-sectoral research and development than other industries (Chen and Karami 2008). By way of a simple example, automotive company Honda has transferred its ergonomic technologies to the development of walking assist devices for people with weakened leg muscles (Jones 2012).

The car as cultural icon

The links between the car and technological innovation represent the way the car is perceived as a cultural icon of progression, freedom and sophistication (Urry 2004b; Mitchell et al. 2010). In this sense, the car is an object of cultural stimulus, providing inspiration to generations of musicians, actors, film makers and visual artists (Enevold 2000; Freudendal-Pedersen 2009). Cars are celebrated, nationalised, personalised and admired. Related to this is the way cars have replaced the traditions displaced by modernity to symbolise various rites of passage (such as the acquisition of a driver's licence) (Walker et al. 2000; Carrabine and Longhurst 2002; Falconer and Kingham

2007). It has also become a place where cultural rituals such as the family holiday, the school drop off and the first date are lived out (Miller 2001). In the trend towards houses where children are often partitioned away from adults, the car provides a rare space where families are forced to be together. Basmajian (2010) and Dowling (2000), for example, describe the way women use and value the time spent in the car transporting their children as a time to connect. Laurier et al. (2008) also explore the way the side-by-side alignment of driving and passengering gives rise to particular types of conversation and intimacy rarely experienced in other settings.

Cars, health and wellbeing

Contradicting the evidence cited above regarding automobility and the risk of lifestyle diseases such as obesity is a swathe of evidence linking car ownership with enhanced health and wellbeing. In many countries, car access is a powerful predictor of health (Kelaheer et al. 2008) and life expectancy (Macintyre et al. 1998). Macintyre et al. (1998) cite a longitudinal study from the United Kingdom which after ten years found that mortality for men and women living in non-car owning households was 41 per cent and 24 per cent higher respectively (657). This relationship is complex. The most apparent connection is that car ownership is often indicative of socio-economic status (as discussed by Johnson et al. 2010), which in turn is linked to health (Oliver and Hayes 2005; Cummins and Macintyre 2006). There is some evidence suggesting, however, that the relationship between car ownership, health and wellbeing is independent of income and can be attributed to measures of self-esteem (Macintyre et al. 1998; Hiscock et al. 2002; Bergstad et al. 2011). Other studies have focussed on the way car ownership in car-oriented environments facilitates healthy behaviours such as access to healthy food (Coveney and O'Dwyer 2009; Burns et al. 2011), opportunities for organised physical activity (Williams and Shaw 2009; Hino et al. 2011) and health services (Comber et al. 2011).

Conclusion

There are problems and, to a degree, impossibilities associated with increased car use. As cities continue to grow, the hegemony of the car as the default mode of transport will need to be challenged. Greater uptake of public transport, walking and cycling is increasingly endorsed in multiple regulatory arenas as a key weapon in the armoury against automobility. While alternative transport will be an important tool in challenging the car's dominance, resistance to its uptake is intriguingly robust. While there are some indications of the rumblings of change to date, automobility in many cities appears to be a 'sticky' problem – one that will not necessarily drift away easily, as though a fad or fashion. This chapter has established automobility's dominance and discussed some of the reasons why it is inherently complex and problematic. The following chapter explores some of the ways existing research has attempted to explain automobility's endurance.

Chapter Two: Choosing the Car. What is already known about automobility practices?

Introduction

This chapter explores some of the more conventional answers to the question of why people drive cars. It is a primer on a diverse and burgeoning body of literature and research examining mobility practices with a specific focus on relatively individualised motives for car use. These range from the more obvious role of factors such as accessibility and cost and progress to cover more tacit motives such as cultural attachments to autonomy and the object of the car itself as well as the role of emotions, identities and habit. Later chapters explore the way mobility practices can also be explained as related to broader systems and structures such as of governance and economy.

It is worth noting from the outset that distinctions are often drawn in the literature between “utilitarian” and “affective” influences on mobility practices. Utilitarian justifications, also referred to as rational-instrumental, include speed, flexibility, cost, convenience and physical comfort. The car’s dominance might therefore be explained by its ability to provide fast access to a number of destinations. Affective motives, also referred to as symbolic or emotional, refer to *feelings*, for example of power, control, tranquillity, altruism and status. Here, the use of the car might be explained by a desire to feel a sense of mastery or control over mobility decisions. As further discussed in Chapter Three, the distinction between utilitarian and affective motives for car use is often positioned as a clear dichotomy (see, for example, Steg 2005). Some authors propose that the distinction is synthetic and unhelpful (see for example Mann and Abraham 2006). Regardless, the distinction remains in the literature and is explained here simply to facilitate understandings of the way motivations for mobility are often interpreted in the research.

Speed and Accessibility:

“I drive because it is the fastest way to get where I want to go” (Diane)⁵

The car’s often unparalleled speed and reliability are key instrumental motives that make car use attractive. If the car dominates travel choice because it allows quick and reliable access to the destinations, it follows that if the distance between these destinations is reduced, so will be our incentive to drive.

This notion underpins a large body of literature analysing the impact of compact urban form on transport behaviour. The basic concept of time geography allows us to unpick the association between the decreased distances afforded by compact development and decreased car dependency.

Time geography (Hägerstrand 1970, 1973) is a framework to conceptualise people’s activities in space and time. In the relatively applied context of transport analysis, the approach examines transport choice as motivated primarily by accessibility and subject to various constraints. The theoretical basis for time geography, however, extends well beyond its use for the analysis of transport behaviour and its theoretical application to the transport field is further explored in Chapter Three (see pages 57-59). For the purposes of this review, the concept provides a starting point from which to approach the way speed (temporality) and accessibility (spatiality) influence transport choice. Using a time-space geography approach, the dominance of the car over alternative modes of transport is explained by its ability to increase the speed, flexibility and convenience of travel. Relative to alternative modes, the car enables people to travel from A to B quickly (speed), to select their route and travel time (flexibility) and to arrive directly at their destination (convenience). Specific to the journey to work, car use could be explained by the desire to minimise travel time between home and work or the requirement to work flexible hours.

⁵ The quotes used in the headings for this chapter are taken from data collected through a series of individual interviews for this research. The process of data collection and analysis is further detailed in Chapters Four, Five and Six, with the results from this data detailed in Chapters Seven, Eight and Nine. Quotes are used here simply to give each theme a more human and applied dimension, as though answering the question “why drive cars?”.

Density and Land-use Diversity

Consideration of the ways these accessibility determinants interact, particularly the role of the dispersion of activities, forms the basis for the plethora of research on the link between urban densities, mixed-uses and reduced car dependency.

There is a tension here between the accessibility provided by the increased travel speed associated with the car and the accessibility provided by concentration of activities. In recognition of this tension, authors such as Newman and Kenworthy (1999, 2006) and Ewing and Cervero (2001) have explored and advocated for increased density and mixing of uses as a way to reduce car use while maintaining accessibility. Land-use concepts such as 'new urban design', 'smart growth' and 'transit-oriented development' link higher density and land use diversity with increased shares of non-motorised travel (Crane 2000; Leck 2006; Cervero 2007; Saelens and Handy 2008; Walton et al. 2008; Rodríguez et al. 2009). This suggests that in denser urban areas, travel demand is concentrated, providing the critical mass required to justify public transport infrastructure. Distances between locations are also shorter, meaning they can be bridged more easily by active transport modes. In this sense, it is not so much the car that has enabled accessibility, but the dispersion of destinations inherent to a sprawling built environment that takes it away.

The assumptions linking higher urban densities to the use of alternative transport are supported by empirical research. For example, a landmark review undertaken by the United States Transportation Research Board (2005), concludes that there are links between higher density, at both origin and destination and decreased automobile use and increased walking and public transport use. In their report on cycling in Australia, Bauman et al. (2008) refer to Handy (2004) and review others inferring that low-density urban form is connected to car-dependent societies. Radbone and Hamnett (2003) and Therese et al. (2010) cite a study by Holtzclaw (1994) which established that a doubling of density produces 25 to 30 per cent less driving per household when conditions accompanying density are present. These conditions include better public transport, more local shopping, and a pedestrian-friendly environment. Heinen et al. (2010) reviewed Pucher and Buehler (2006), Guo and Ferreira Jr (2008), Parkin et al. (2008) and Zahran et al. (2008) to explain how higher densities lead to a higher cycling share. Litman (2007) found that higher densities are related to lower levels of car ownership and car use. Similarly, Witlox and Tindemans (2004) identified that

inhabitants of higher-density city centres use alternative transport modes more often than residents in the suburbs.

With regards to land use diversity, Radbone and Hamnett (2003) cite a variety of studies matching travel survey data to travel behaviours for residents in neighbourhoods with mixed and single-use characteristics. This work consistently found associations between mixed-use development, decreased car use and active travel behaviour. The United States Transportation Research Board (2005) also cites research which found positive correlations between land use diversity and walking for transport. Black and Macinko (2008) in reviewing Saelens et al. (2003), Frank et al. (2004) and Mobley et al. (2006) also come to the conclusion that an easy walk from home to commercial areas has a significant correlation with decreased car use. A meta-analysis conducted by Leck (2006) found mixed land use and the provision of destinations to be an overwhelmingly significant built environment element influencing alternative travel behaviour. So too did the review by Gebel et al. (2005) of Cervero and Duncan (2003) and Foster and Hillsdon (2004). Consistent with prior work, Ewing and Cervero's (2010) meta-analysis found that walking is most strongly related to measures of land use diversity, intersection density, and the number of destinations within walking distance. This was further confirmed by Ewing et al. (2011).

Despite this evidence, there remains scepticism about the impact of density and land use diversity on transport behaviour (Crane and Schweitzer 2003; Chen et al. 2008; Thérèse et al. 2010). In particular, it is argued that many studies neglect the impact of confounding variables and fail to articulate whether it is density or the social, economic, political and environmental characteristics that often accompany higher density that affect people's travel choices (Transportation Research Board 2005). The original and highly influential empirical and analytical work in this area by Newman and Kenworthy, for example, has been particularly criticised for its failure to incorporate the wider context of cities (see Neuman 2005 and van de Coevering and Schwanen 2006).

Controlling for other variables is one way to account for the impact of the confounding factors inherent to context. There are transport studies based on utilitarian concepts that attempt to take into account variables such as residential self-selection, socio-demographics, and even past travel experiences on travel behaviour. For example, Chen et al. (2008) assess the role of density in affecting mode choice while controlling

for confounding factors to conclude that it is density at the workplace rather than at the residence that is more likely to provoke a car-less commute. This was confirmed by Maat and Timmermans (2009) and Vega and Reynolds-Feighan (2008) who also found that the decision to commute by car is influenced by built environment characteristics of work locations. Perhaps the most comprehensive study attempting to address the issue of residential self-selection is that of Ewing and Cervero (2010) whose meta-analysis of data from over 50 studies calculated elasticities for the impact of elements of the built environment, including density and land use diversity on travel choice. Their conclusions refute those of Chen et al. (2008) in that they found no correlation between density at the workplace and travel behaviour.

Density and Diversity....but at what scale?

The conclusions of the studies by Chen et al. (2008) and Maat and Timmermans (2009) highlight the issue of scale, so frequently omitted from consideration in studies of the impact of built environments on travel behaviour. Journey patterns are influenced by regional land use patterns. It logically follows that the structure of uses throughout the region will have more impact on travel behaviour than the density or diversity inherent to the immediate neighbourhood.

In an Australian context, Radbone and Hamnett (2003) look beyond micro-design variables and the local policy context to examine the impact of strategic planning initiatives on alternative transport use in cities. They explore the way contemporary land use strategies encouraging compact cities and mixed-use development facilitate better integration of land uses and resultant accessibility, including alternative accessibility. They conclude, however, that many of these policies lack integration with the wider policy context to be successful. The higher densities inferred by compact city policies, for example, will not encourage more people to cycle if they do not have destinations to cycle to – including opportunities for employment and access to goods and services. Mixed-use development may well provide for better residential access to smaller scale retail and commercial uses, however unless the push towards less uniform urban fabric is strategically applied across the city, it is unlikely to result in decreased car use.

This failure to integrate increased alternative accessibility as an aim in the wider policy context has recently been examined as a barrier to the success of a major 'healthy planning' initiative in Perth, Australia. The Western Australian State Government has developed 'Liveable Neighbourhoods' - a context-specific design code aiming to increase active transport through traditional design qualities such as connected streets with footpaths, higher density, mixed-uses and local centres (see Giles-Corti et al. 2007 and 2008). Falconer et al. (2010) used trip substitution techniques to examine the extent to which active transport modes could be substituted for car travel for the journey to work in suburbs designed according to the code. They found no real differences between neighbourhoods based on the code and more conventional neighbourhoods - in relative terms it would take the average resident about three times longer to conduct a trip by public transport. The study concludes that the Western Australian code is not sufficiently calibrated with regional structure planning to prescribe that new development be targeted in strategic areas around the city where proper (regional) integration with existing transport systems would be possible.

Even if the strategic planning of densities and mixing of uses occurs at the regional scale, the impact on car use will be complicated. The polycentric model of city structure attempts to co-locate workers and jobs in and around dense and mixed-use sub-centres. It is often pursued in the name of strategic increases in density and mixing of uses in the hope of increasing alternative accessibility (Aguilera et al. 2009). A shift from mono-centric urban form towards polycentrism has been the focus of strategic planning in many Australian cities since the 1970s. Often this focus is justified as a way to address the random suburbanisation on the periphery partly made possible by the popularisation of access to the car (see for example Department of Planning NSW 1994; Department of Infrastructure Victoria 2002; Department of Planning NSW 2005; Department of Planning and Community Development 2008; Department of Planning NSW 2010). Inherent to the appeal of polycentric urban form from a transport planning perspective is the idea that it might reduce car commuting through the co-location hypothesis (Parolin 2006). This theoretical proposition is based on the assumption that market mechanisms lead households and firms to relocate periodically in the pursuit of decreased commuting costs (Gordon et al. 1989). Over time, jobs and housing co-locate which acts to maintain constant average commuting durations and times (Levinson and Kumar 1994). Essentially, polycentrism intends to result in more people living close to where they work, and thereby decrease

commuting distances, subsequently increasing the likelihood of accessibility by means other than the private car.

As Forster (2006) points out, “a balance between the number of jobs and workers in a suburban region, even in the unlikely event that the types of job match precisely the nature of the local workforce, is no guarantee that people will find work locally.” (Forster 2006, 175). Nor is there any guarantee that people will be able to live in their preferred location (De Vos et al. 2012) or want to work close to where they live (Manaugh et al. 2010). The myth of the polycentrism’s ability to impact car use for the journey to work is further confirmed by the work of Buys and Miller in South East Queensland (2011), who found very little correlation between increased densities around transport hubs and reductions in commuting by car. It was also confirmed by Fagan and Dowling’s research on employment lands in Western Sydney (2005). In addition, the utility of polycentrism has been rejected by overseas models. For example, Schwanen et al. (2002) conclude that metropolitan structure in The Netherlands explains only a small part of the variation of individuals' commute behaviour.

Density, Diversity and....Discomfort

As reviewed above, there are inherent frictions in the literature suggesting that restructuring the built environment by policies such as increased density, mixing of uses and the pursuit of polycentrism will not automatically result in reduced car use (Boarnet and Crane 2001; Horner 2004; Kent et al. 2011). One reason for this is that the car not only bridges distance, but it also brings an undeniable sense of individual comfort, autonomy and convenience – *even when it is used for distances that might be otherwise accessible by public or active transport*. Cars provide other tangible benefits including shelter from the weather, allow carriage of shopping and children and free us from timetables. Cars are also spaces that are relatively private and inherently personal. Many of these benefits will be further discussed below. It is important at this stage, however, to recognise that having facilitated and perpetuated low-density urban form, automobility, now established, bestows benefits that are not necessarily singularly a product of the car’s capacity to seamlessly cover the distances characteristic of urban sprawl.

Acknowledging that motivations to drive and resistance to alternative transport is not just the product of accessibility, but is also related to deeper notions of comfort and autonomy, calls into question the relative advantages of the pursuit of increased residential density in the name of the uptake of alternative transport and subsequent better societal well-being (Neuman 2005; Mees 2009b). Empirical expressions of societal and individual antipathy to increased densities provide an avenue for conceptualisation of resistance to alternative transport which inherently requires higher density. People are not only resistant (on many levels) to alternative transport as a transport mode per se. From a very utilitarian perspective, they are also resistant to the residential densities often required to justify and support alternative transport infrastructure.

This chapter has thus far reviewed some of the ways large-scale spatial structure impacts accessibility and subsequently transport behaviour. The clearest message coming out of this research is that the relationship between urban structure and transport behaviour is contextual. It is logical that higher-density urban form will reduce distances and enable diversity, which in turn are characteristics often supportive of alternative transport use. It is questionable, however, whether a society and culture now firmly established in a low-density, car dominated city, will easily adapt to new ways of inhabiting and navigating urban space. Indeed, effective time space configurations for alternative transport are often situated in a wider environment of constraints to car use. For example, the ability to be auto-mobile is subject to the market economy and as such manipulating the cost of driving presents potential opportunities to constrain car use. Discussion now progresses to explore the way individual decisions to drive might be motivated by monetary cost.

Cost

"I drive because it's cheaper - a tank of petrol is the same price as the bus and train tickets to get here....." (Chrissy)

Car users encounter a multiplicity of financial costs. Fuel, registration (road tax), insurance, parking and tolls are all incurred in addition to the actual cost of buying and

servicing a car, as well as depreciation. It is well documented, however, that car users generally fail to realise the full monetary cost they incur to enjoy car travel (Gardner and Abraham 2007). Survey and interview based research regularly demonstrates that car users equate the total cost of running a car with expenditure that is regularly incurred. Fuel and parking costs are examples (Wardman et al. 2001).

Road pricing is frequently used by government authorities in attempts to modify transport practices (Li and Hensher 2012). Calculating the monetary cost of car use, and, more specifically, commuters' willingness to pay for driving, has been the subject of a great deal of relatively utilitarian research seeking to determine the role that road pricing mechanisms or other taxes might play in reducing car use (Hensher and Stanley 2009; Li and Hensher 2011; Beck et al. 2011).

Transport modelling has the capacity to divide the coefficient for travel time by that of monetary travel cost to get an estimate of the 'value of time'. Value of time represents the monetary value a traveller is willing to pay for a one minute reduction in travel time. For example, in 1992, Small suggested that a realistic average value of time for the journey to work was 50 per cent of the gross wage rate (Small 1992). This simply suggests that a person earning AU\$120 an hour is likely to be willing to pay AU\$1 to save one minute in travel time for the journey to work. This finding was subsequently confirmed using a more rigorous revealed preference method by Brownstone and Small (2005) and continues to be accepted as a reasonable average.

Despite complex modelling of the impact of pricing as a regulatory mechanism, if car users generally fail to realise the true monetary cost of being auto-mobile, road pricing charges must exceed a minimum threshold to entice any change in activity-travel behaviour (Cools et al. 2011). At a very practical scale, Bonsall et al. (1998) for example found that the main response to an increase in road tolls was to forfeit the fee without changing travel behaviour. The next most common response was to avoid the charge by driving at different times or taking different routes rather than decrease driving as such. This finding was confirmed by Jakobsson et al. (2002) who followed 80 households' travel behaviour over a four week intervention where the price of driving increased by 100 per cent. They found little evidence for behaviour change in response to the increased cost, with "lack of transport alternatives", "time pressure, unwanted suppression of activities", "discomfort" and "carrying cargo" cited as reasons for continued car use (Jakobsson et al. 2002, 365).

Price increases in fuel are often implicated in projections for decreased car use. The literature here is ambiguous and there are various debates about the most appropriate way to model petrol demand (Zheng et al. 2010). There is research demonstrating that even though car drivers regularly acknowledge the cost of fuel as a key cost of automobility, actual VKT is still relatively inelastic to fuel price increases (Van Reeve 2011). Breunig and Gisz (2009) found that the price elasticities of fuel demand for Australia lay somewhere between -0.13 (short-run) and -0.20 (long-run). This suggests that over time, if fuel price were to increase by 1 per cent, demand for fuel would fall by 0.20 per cent. Also in Australia, Hensher and Stanley (2009) modelled the effect of a per litre fuel price increase from AU\$2 to AU\$10 over the period 2009–17. They found that by 2017, the gradual AU\$1 per litre annual increase in fuel costs would decrease annual passenger vehicle kilometres by 25 per cent, and carbon emissions from cars by almost 30 per cent. While these figures sound impressive, a 25 per cent reduction in VKT is a relatively small response to a 500 per cent increase in price – an increase unlikely to be tolerated by the contemporary political economy.

Automobility is facilitated by having a place to store the car when not in use and increasing the cost of car parking is also seen as a way to reduce car use (Marsden 2006). However the results of studies looking at changes to mode choice resulting from the implementation of parking restrictions are mixed. Research demonstrates that parking demand, as measured strictly by number of cars parking, is also inelastic with respect to price. This means that increasing costs associated with car parking will not necessarily result in an analogous decrease in car parking demand, or further, a decrease in car use. For example, Hensher and King (2001) estimated that a 1 per cent increase in hourly parking fees results in only a 0.54 per cent decrease in demand for centrally located parking in Sydney's central business district. In a synthesis of research on traveller responses to parking prices and fees, the United States Transportation Research Board found that “empirically derived as well as modelled parking demand elasticities for area wide changes in parking price generally range from -0.1 to -0.6, with -0.3 being the most frequently cited value.” (2005, 13–14). Basically, research suggests that people are willing to pay to minimise the time spent out of the car getting from where they park it to their destination.

Price elasticity, however, can be a deceptive gauge when taken at face value (Transportation Research Board 2005). There is evidence that willingness to pay the

parking related costs is more sensitive to change than willingness to pay for other costs associated with driving (such as fuel). Feeney (1989) suggests that this is because parking costs are fixed, often incurred on a trip-by-trip basis or paid as a lump sum (rather than relatively sporadically, as is with fuel consumption). Parking costs are therefore very obvious to the consumer - fuel consumption for each trip is less likely to be known. Gillen (1977) also confirmed this by testing the elasticity of costs associated with parking compared with other monetary costs incurred as a result of driving to work.

The findings of Gillen (1977) support other research demonstrating the way workplace travel demand strategies have manipulated the supply and use of car parking to change commuter behaviour. These strategies can incorporate an array of incentives such as exchanging a company car park for subsidies to use public transport or a cash payment and allocating priority spaces to car pool programs. In a longitudinal study, for example, Brockman and Fox (2011) analysed the impact of the introduction of a restricted and paid parking scheme on travel mode to work. They found that over the nine years of the study, the incidence of walking to work increased from 19 per cent to 30 per cent and driving to work decreased from 50 per cent to 33 per cent. Cairns et al. (2010) found that the restriction of car parking availability was also key to the success of workplace travel plans in the UK. Pandhe and March (2012) found that increasing employee parking costs in the central business district of Melbourne, Australia, would encourage increased uptake of public transport. While this research suggests that on-site parking restrictions may result in decreased on-site parking, these findings may not necessarily mean a change in travel mode. Instead, they may be attributable to shifts in parking location (Marsden 2006), particularly when access to alternative transport modes is poor. Indeed, the United States Transportation Research Board go so far as to say "Charging for employee parking without reasonable levels of transit service can be expected to produce limited effect on travel and to act primarily as a parking revenue generation strategy" (Transportation Research Board 2005, 13-5).

In summary, this section has reviewed a collection of literature exploring the extent to which the monetary cost of driving influences mobility practices. The 'laws' of economics logically deem that an increase in the cost of driving will decrease its demand. However this review has demonstrated that demand for automobility displays varying degrees of price *inelasticity* (Hensher 1998; Paulley et al. 2006; Cools

et al. 2011; van Reeve 2011). That is, people are willing to absorb price increases associated with driving and regularly surprise economists with just how much they are willing to pay to be auto-mobile (Metz 2002). If demand for driving is somewhat inelastic to various monetary price increases, it is fair to suggest that driving is perceived to be something worth paying for. This chapter now turns to look into what it is people value so highly about the private car, starting with the often emotive concept of freedom.

Freedom, Flexibility, Autonomy, Independence

“I use the car because it allows me to go where I want, when I want” (Anthony)

Automobility allows us not only unparalleled access, but also the relative flexibility to travel when we want. Cars have enabled personal detachment from the schedules of public transport, contributing to the de-synchronisation of time that characterises modern life (Urry 2008). In this sense, the independence and freedom enabled by the car has utilitarian value – we can leave work when we want and take the route home that best suits us, stopping off on the way to pick up dinner, children or dry cleaning.

This freedom, however, can also be interpreted as a motivator for car use because it endows a *feeling* of autonomy – or the sense of being in control of one’s own life (Mann and Abraham 2006). Automobility by definition is about autonomy, with the car enabling a sense of mastery, not only over a high speed piece of machinery but also over time and space. Freedom therefore acts as a motivation for car use in a variety of ways, from the utilitarian value of being able to go where we want when we want, to the more affective value of feeling empowered (Steg 2005; Mann and Abraham 2006; Gardner and Abraham 2007).

The freedom inherent to automobility is perhaps the theme that best demonstrates the opaque territory between utilitarian and affective motivations for car use. This distinction was outlined at the beginning of this chapter which explained utilitarian motives as related to tangibles such as speed and distance, with affective motives more concentrated on feelings, for example of power, control, tranquillity, altruism and social status. To this point, automobility has been explained in a relatively utilitarian way, with the chapter thus far focused on individual motives based on

speed, accessibility, cost and freedom. Discussion now turns to unpack motives for driving use that are more opaque in their rationalisation, beginning with the symbolism and emotion embedded in the car.

Affect and Symbolism

“Driving gives me a rush, you know, I enjoy it...” (Steve)

“Car use is not only popular because of its instrumental function, but it also satisfies the need to express yourself and your social position, and it is pleasurable” (Steg et al. 2001, 164).

The cultural text of the car – the way it is portrayed in road movies, advertisements, books and its persistence as a symbol of status, safety and entry to adulthood – exposes its ability to fulfil symbolic and emotional functions. Many studies have explored the way travel choice represents something deeper than the mere motions of getting from one place to another. Often, particularly in psycho-social literature, the car’s ability to satisfy symbolic-affective needs is seen as distinct from its instrumental value (for example Anable and Gatersleben 2005; Lois and Lopez-Saez 2009; Bergstad et al. 2011). Symbolic-affective needs are emotion-based requirements for self-expression and social status, self-verification and social group membership. Affect in psychology is a half-sensed experience, differentiated from emotion because it is felt, but not always in a way that can be articulated (Shouse 2005). Symbolic affect therefore refers to the way we *feel* emotions aroused by driving, such as feeling fresh from the car’s air-conditioned comfort, excited by that new car smell or thrilled by speeding along a winding road (Fleiter et al. 2010; Peters et al. 2010).

In their highly cited study, Steg et al. (Steg et al. 2001) set out to test and validate the relevance of symbolic-affective compared to instrumental-rational motives for car use. They started from the idea that many studies have failed to reveal symbolic-affective motives for car use simply because in a self-report situation respondents are likely to justify and rationalise car use behaviour and unlikely to self-reflect on emotive aspects. They used various questionnaires to conceal the aims of their study and reveal that symbolic-affective motives for car use such as independence, are just as significant in determining transport practices as more instrumental motives such as accessibility.

Steg (2005) progressed this research with a further study confirming the importance of symbolic-affective motives and the extent these different motives are related to the level of car use. The importance of symbolic-affective motives for car use has subsequently been verified by an array of studies including Anable and Gatersleben (2005); Lois and Lopez-Saez (2009) and Sevillano et al. (2011).

In reality, the separation of utilitarian and affect-based or symbolic motivations for car use is an empirical construct. It is unlikely to be salient to those who 'choose' to drive (Mann and Abraham 2006). The car's instrumental ability to be flexible, for example, may well have a symbolic function of endowing the driver with a sense of control and independence. The desire for independence may well be grounded in symbolism and affect but the decision to drive is usually also somehow associated with a utilitarian motive (Steg et al. 2001; Sevillano et al. 2011).

Some qualitative, psycho-social research has explored the instrumental and affective motives for car use as inseparable. Mann and Abraham (2006) and Gardner and Abraham (2007) used a series of in-depth interviews to analyse motives for travel behaviour. In the first study they found that the distinction between affect and utility beliefs was entirely obscured by the way interviewees integrated the two concepts in their discussions of travel motives. One participant spoke about the time consequences of a long train journey both in the context of being late for a meeting and feeling bored and restless on the train. Another justified his decision to drive because it was cheaper than taking the train. Further reflection however, revealed that it was not the actual cost of public transport that motivated use of the car. Instead it was that the study participant felt cheated by paying for something he believed should be a public good. In their study on the acceptability of road pricing policies, Schuitema et al. (2010) found that it was mistrust of the efficacy of road pricing policies rather than an instrumentally-based desire to minimise cost that was the source of antagonism. Gardner and Abraham (2007) also concluded that an underlying desire for control over the transport experience underpinned utilitarian and affect related driving motives such as effort minimisation, journey-based affect and personal space concerns. This finding supports the work of Hiscock et al. (2002) who found that driving is related to more basic needs. They tied the use of the car for the commute to the deeper concept of ontological security. This cultural conceptualisation evades the superficial distinction between instrumental and affective motives for car use.

Ontological security is a key concept in the current study which will be discussed in detail in Chapters Eight and Nine.

Identity, Social Role and Culture

“Driving, it's just a normal thing, it's just what you do to get to work and to get home...” (Leroy)

The term identity is often used in the transport literature to explore the various social and personal roles we play out by the way we travel. The car has been implicated as integral to national identities (Martin-Jones 2006) racial identities (Gilroy 2001), gender identities (Dowling 2000) and social and individual identities (Murtagh et al. 2012).

The relationship of the car to personal identity is difficult to extrapolate from the notion of symbolic affect discussed above. Linda Steg's work in this area, which argues that the car satisfies “the need to express yourself and your social position” (Steg et al. 2001 p. 164) is essentially a broader conceptualisation of the car's place in the development of individual identity. In 2010, Murtagh et al. (2010) attempted to clarify the specific function of identity in travel choice through the application of social role theory (after Stryker 1987). Identity in social role theory is the subjective interpretation of social norms and expectations (that is, the social role). For example, an identity of ‘employee’ will comprise the expectations around behaviour and attitudes which individuals believe others within their culture and context hold regarding that role (Murtagh et al. 2010). Behaviour motivated by identity in this sense is usually congruent with social norms. However social norms are not the only determinant of behaviour. According to social role theory we move between a multiplicity of social roles and manage multiple identities (Stryker and Burke 2000). Where specific identities may be conflicting, we maintain an identity hierarchy which is influenced by the concepts of identity salience and centrality (Stryker and Serpe 1994). Salience represents the frequency with which an identity is actuated with centrality representing the subjective importance the individual places on that identity. Salience and centrality/importance are not always equated – for example, our identity as a member of an environmental political group may be highly central to us, however our

identity as a shop assistant may be invoked more frequently and therefore be more salient (Isabel Sanz-Vergel et al. 2011).

Studies have explored the way knowledge of the centrality and salience of an individual's identity can be used to predict various types of behaviour such as eating (Oyserman et al. 2007), recycling (Nigbur et al. 2010) and parenting (Nuttbrock and Freudiger 1991). Murtagh et al. (2010 and 2012) explored whether identity is related to the travel choices of 248 working parents in the UK. They measured identity salience using the Twenty Statements Test (a well-established measure of salience requiring the participant to complete up to 20 statements beginning with "I am..."). For the purposes of the Murtagh study the test's initiating question was phrased "When it comes to how I travel, who am I?" (Murtagh et al. 2010, 17). The test revealed a strong role for the car in supporting important social identities such as friend, worker and parent and that the choice to drive was not influenced as much by the individual as it was by the individual's social network. They concluded with recognition that changing travel behaviour requires a focus beyond the individual to incorporate the way the car supports the individual's identity as enacted through a social role.

Other studies have examined the relationships between identity outside of the explicit framework of Stryker's social role theory. Mann and Abraham's (2006) qualitative work, for example, concluded that the car is often seen as an instrument supporting other identities, such as identities of parenting. This finding was explored in-depth by Dowling's study of cultures of mothering where it was concluded that the car was an integral component of interpretations of "good mothering" (Dowling 2000, 347).

At its extreme here is literature examining the association between the car user as 'normal' against the user of alternative transport as the 'other' (Wickham 2006; Aldred 2010; McCarthy 2011; Aldred 2012). Various psychological studies have shown that subjective accounts of social norm precede behavioural intention, including for car use (Kerr et al. 2010). This simply means that people drive because they see it as the socially acceptable thing to do, avoiding the use of alternative transport for the very same reason. Research has also demonstrated that this influence extends to the uptake of alternative vehicles (Axsen and Kurani 2011; Axsen and Kurani 2012).

The idea of alternative transport not being a salient social norm has been well examined in the context of cycling. Cycling in many countries occurs within a transport

and cultural context dominated by the private car (Pucher and Buehler 2008). As discussed above, the automobility enabled by the car has become very much a part of people's everyday lives, integral to elements of cultural identities and various social roles. It therefore follows that to travel by alternative means requires people to place themselves in a position of difference and potentially face social exclusion (Aldred 2010). On the road, bikes are often seen to be intruding on spaces where the car belongs (McCarthy 2011). Cycling is routinely portrayed as threatening the hegemony of the private car, with cyclists depicted as particularly 'deviant' to the social norm (Böhm et al. 2006).

In addition to being salient and central to individual identities, automobility itself has also historically assumed a cultural identity of what it is to be 'modern' (Featherstone 2004; Conley and Tigar McLaren 2006; Paterson 2007; Hagman 2010). It is also linked to national identities (Edensor 2004; Goodwin 2010). The automobile has defined what it is to be technologically and culturally advanced and has filled some of the gaps left by the relatively recent weakening of tradition, religion and ties of kinship. In this sense, the car has been a cultural stimulus, providing inspiration to generations of musicians, actors, film makers and visual artists (Venkatasawmy et al. 2001; Laderman 2002; Simpson 2006). Related to this is the way that cars have replaced the traditions displaced by modernity to symbolise various rites of passage (such as the acquisition of a driver's licence) and cultural rituals (such as the road trip holiday) (Walker et al. 2000; Redshaw 2008; Lumsden 2010). While the home has been increasingly partitioned into spaces that segregate adults and children, the car remains a space where families are forced to be together. Basmajian (2010) and Dowling (2000), for example, describe the way women use time in the car with their children to socialise and catch up.

Journey-based Affect and Utility

"I drive to switch off, and relax a bit" (Anthony)

The concept of journey-based affect refers to the positive or negative feelings experienced while actually being mobile – for example feeling stressed, comfortable or happy (Mann and Abraham 2006). Journey-based utility is added here in recognition that journey time can be used for various activities such as catching up on the news or

calling friends and family. Both are relevant to any review of mobility practices in that they further demonstrate the myth that transport is wholly a product of rational instrumental choice.

Although sophisticated utility models can account for some of the concepts inherent to journey-based affect, psychological theories and methods have been applied more often. Many studies have found that journey-based affect is generally more positive in car users than in users of alternative transport (Ellaway et al. 2003; Mann and Abraham 2006). Stress and frustration associated with waiting, discomfort from crowding and exposure to the elements and the inconvenience and disempowerment experienced by having to adhere to a public timetable are some of the reasons cited. Feelings of vulnerability to both crime and traffic are also particularly relevant in the context of walking and cycling (Ferreira et al. 2007; Mendes De Leon et al. 2009; Durant et al. 2010; Heinen et al. 2010). Using physiological methods to measure stress (such as monitoring salivary cortisol), Evans and Wener (2007) were able to demonstrate the way crowding in a train causes anxiety. They conclude that it is not the number of people in a train carriage that causes stress, but that when people have to sit close to other passengers, they experience adverse stress reactions. This study raises the concept of personal space.

The primacy of the car in maintaining privacy and personal space often surfaces in the literature (for example Ibrahim 2003; Petkewich 2005). Physical mobility is a corporeal thing – we are required to leave one place to get to another place and in this process it is inevitable that we will come into contact with other people. In most spheres of life we are able to regulate our personal space and we use personal space as a boundary to maintain self-defined optimum states of social interaction (Evans and Howard 1973). Often this definition is culturally contextual. Regardless of the extent of the boundary, crowded buses and trains often erode capacities to perform this regulatory function. If a person's personal space boundary is crossed, they will feel forced into states of social interaction that are beyond what is considered optimal. The cocoon of the car, however, allows movement amongst people without the risk of impingement on personal space boundaries. The car has thus become a tool in the modern regard for highly regulated social interaction (Bauman 2010).

Using different measures of affect, however, studies demonstrate that positive journey-based affect is also associated with alternative transport modes. In their study

of 786 university employees, Lajeunesse and Rodríguez (2012), for example, found that walkers and cyclists were more likely than car drivers to find their commute satisfying and peaceful. This was also confirmed by Paez and Whalen (2010) and Gatersleben and Uzzell (2007), whose studies of university students concluded that those commuting by active modes were less likely than car drivers to experience stress on the commute. Wener and Evans (2011) concurred in their study of commuters in New York City. This study concluded that car commuters showed significantly higher levels of reported stress and a more negative mood when compared with train commuters. Steg's (2001) suggestion that many studies fail to reveal positive affective motives for car use in a self-report situation may be relevant here. People who walk or cycle to work often sacrifice a degree of utilitarian benefit (such as speed and convenience) for the affective benefits associated with active travel – including a sense of achievement and satisfaction linked with physical activity (McManus et al. 2005; Daley et al. 2007), a sense of magnanimity linked to environmental awareness (Abrahamse et al. 2009) and feelings of peace associated with exposure to the outdoors and nature generally (Conradson 2005; Cresswell and Merriman 2011). On reflection, and in the presence of diminished utilitarian benefit, walkers and cyclists are more likely to highlight affective motives for their travel behaviour than utilitarian motives. People who drive are more likely to cite the obvious utilitarian benefits of car use, potentially denying the role of positive affect in influencing mobility practice (Steg 2005). Related to this are studies that seek to develop understandings of the emotions and sensations of mobility from observation rather than methods based on self-report (Jensen 2011). Rising above the relatively simplistic dichotomy of the relationship between affect and mode is the broad conclusion that physical mobility is as much a sensory experience as it is a way to address the constraint of distance (Sheller 2004).

Travel time in the utilitarian sense is a cost of travel which needs to be minimised (Cervero 1997). Inherent to this assumption is the idea that travel time is time wasted – it is unproductive. The concept of journey-based utility presents a powerful rebuttal to this assumption because it suggests that people use their travel time productively. Academic and cultural discourse has traditionally represented time spent in the car, particularly time spent commuting, as a banal and alienating experience (Edensor 2011; Jones et al. 2012). The journey to work is often portrayed as one that must be endured in order to 'get on' with the serious business of work (Lyons and Chatterjee 2008). However thanks in part to technological innovation, time used to travel is no

longer just 'dead time' and this use of time needs to be taken into consideration in any analysis of motives for mobility practices.

In their qualitative study, Jain and Lyons (2008) set out to examine travel time through a different lens by conceptualising travel time as a gift instead of a burden. Examining discourse from several focus groups, they explore the way individuals often gain personal benefits from travel time because it is time out from the busy schedules of modern life, or transition time, allowing distance to be created between two activities or roles (for example, employee to parent). Bull (2004) also describes the way the car offers "temporary respite from the demands of the other" (249) – a respite which is only enhanced through personalisation of sound within the cocoon of the car. Jain and Lyons (2008) further explore the way commuters 'equip' themselves for travel time, having music, work, obligatory phone calls or other tasks ready to hand. This idea of travel time being a 'gift' stems from time geography based research comprehensively explored by Patricia Mokhtarian and colleagues. This research proposes that the activities undertaken while travelling and the positive experience of travelling itself render travel time useful (see Mokhtarian et al. 2001; Mokhtarian and Salomon 2001; Redmond and Mokhtarian 2001 and Mokhtarian and Chen 2004). This proposal was applied empirically to the commute by Redmond and Mokhtarian (2001) in their study on the travel behaviour of 1,300 full-time and part-time employees from the San Francisco Bay area. The study is based on the idea that people have an ideal commute time that is substantially greater than zero. Using a questionnaire, they quantified that 15 to 20 minutes was the most desirable commute time primarily because it enabled the transition between work and home roles. They reviewed an array of other studies arriving at similar conclusions.

There is a considerable body of research exploring and describing the things people do in cars during the commute. Ethnographic work by Laurier (2004) for example describes in detail the work a female executive undertakes to do in the car transitioning from one appointment to the next. Laurier records the way the subject balances spreadsheets on the steering wheel while driving at full speed on an English motorway. This work was recently extended by Laurier and Dant (2012) who conclude that automobility is increasingly less about identity and more about inhabiting space. This space, they claim, will become increasingly useful as technology renders the driver within the car progressively less 'preoccupied' with the actual task of driving. Bull

(2004) explores the way people experience and use sound in the car, describing the car as "potentially one of the most perfectible of acoustic listening chambers" (247) with the sound from the stereo adding to the positive affect gained from travelling through changing landscapes. Edensor (2003 and 2004), and Walsh (2010) describe similar situations. A more recent study by Basmajian (2010) explores the way women use time spent in the car driving to and from work to catch up with children, wind down after work and prepare for the evening's demands. Haddington et al. (2012) introduce an entire special issue of journal *Semiotica* dedicated to conversations and happenings in cars.

Related to the concept of journey-based affect and utility is the idea of 'autotelic' or recreational travel – a concept modelled using utilitarian methods by Cao et al. (2009a). This study explored the environmental correlates of travelling out of the house with no particular destination in mind to confirm that the features of urban environments that encourage alternative utilitarian travel modes also encourage alternative autotelic travel modes. Walking and cycling for the sake of walking and cycling are therefore more likely modes for autotelic travel in higher-density mixed-use areas than taking the car out for a Sunday drive. Autotelic travel, however, is not limited to journeys with zero utilitarian benefit. The practice of taking the long way home from work, for example, incorporates autotelic notions into a journey for another purpose such as to wind down or zone out.

Cars are comfortable and comfort is a utilitarian benefit gained from car travel. At its most basic, the enclosed space of the car offers shelter from the elements. Climate control allows more than shelter, enabling the customisation of the space within the car. Other technological advances such as iPod/MP3-ready ten speaker sound systems, retractable head rests, heated seats, ambient lighting and drink coolers turn the car cabin into a "cocoon" of personalised comfort (Honda 2012). A lack of comfort and general exposure to the elements is often cited as a barrier to alternative transport (see for example Winters et al. 2010 in relation to cycling). Rain, wind, snow and extremes in temperatures have all been explored as having negative impact on the uptake of alternative transport (Nankervis 1999; Mann and Abraham 2006; Zahran et al. 2008). In a sense, the desire for comfort is inextricable from more affective rationales. To be mobile in the easiest and most comfortable way possible can be seen as a way to nurture the self. The avoidance of immediate risk, danger and discomfort is

an obvious human response and one that this study examines in-depth in subsequent chapters.

This chapter has thus far reviewed car use as something intentionally pursued by the 'knowing' driver. Automobility has been positioned as resulting from an individualised and linear decision-making process (Urry 2012a, 533). Car use, however, can also be conceptualised as a routine human action that may not necessarily be predicated upon processes of deliberation. This chapter concludes with a review of research on the way car use is shaped by habit.

Habit

".. driving to work is just something I do" (Frederick)

Psychological methods and theories have been used in the exploration of motives for travel behaviour. These approaches often attempt to account for the impact of habit on mobility practices. In other words, do people drive to work because they have always driven to work, or do they drive to work because on this particular day and for this particular journey it is the quickest and most comfortable way for them to commute? The way that automobility has become a practice enacted precognition – "somehow before thought" (Laurier 2011, 71) – has also been of particular interest to cultural theorists (Sheller 2012).

Habit is often conceptualised as the product of a process initialised with a more rational evaluation of the costs and benefits of the behaviour which, following repeated successful application, becomes ingrained (Aarts et al. 1997 and 1998; Fujii and Garling 2003). In this sense, habit is non-deliberative and without reason, possibly in an effort to reduce cognitive effort in the context of frequently repeated trips (such as the journey to work) (Garling and Axhausen 2003).

That mobility practices are practices of habit has been confirmed by numerous studies. Gardner and Abraham's meta-analysis of 23 data sets concludes with a recommendation for greater incorporation of habit as opposed to deliberative cognitions such as attitudes and perceived behavioural control on transport behaviour (Gardner and Abraham 2008). Other studies that confirm the strength of habit's mediating impact on transport include Domarchi et al. (2008), Eriksson et al. (2008a);

Thøgersen and Moller (2008), and Kerr et al. (2010). Habit's influence extends beyond car use and also shapes choices to cycle or walk (Heinen et al. 2010 and Middleton 2011).

The automated, non-deliberative nature of habit is often cited as a characteristic that makes it difficult to change. When we undertake an activity as a habit we are not required to think about it. Appeals to reason or judgement may therefore be ineffective (Murtagh et al. 2011). Murtagh et al. (2011) develop the role habit plays in preventing behaviour change by conceptualising the way automatic and non-deliberative habit develops into more cognitive repeated behaviour in the face of threat. In this sense, the concept of habit goes full circle. The behaviour starts as a chosen response based on a rational evaluation of options. It then develops to be a non-deliberative cue response. However awareness of the behaviour is revived if it is somehow threatened. Murtagh et al. (2011) demonstrate that habit under threat can develop into resistance to change. Such defiance is believed to be related to concepts of self-efficacy and self-identity - an assertion of freedom in the face of threat may therefore be an assertion of self-identity. They cite a study by Hansen et al. (2010) which found that smokers who nominated their smoking as a strong component of their self-identity were more likely to rate smoking as positive following exposure to potentially threatening health warnings such as 'Smoking Kills'. It follows that if car use is highly salient or central to a person's identity, attempts to reduce car use may be perceived as a threat which could result in resistance to behaviour change. For example, Dowling's (2000) study of busy mothers dependent on the car to fulfil identities of 'good parent' may feel threatened rather than inspired by suggestions to reduce car use. Research by Tertoolen et al. (1998) concurs. They found that the provision of more information on the costs and environmental impacts of car use resulted in increased blame attributed to government policy rather than behaviour change. Murtagh et al. (2011) conclude that it is possible that certain behaviour change campaigns, and discourses aimed at encouraging decreased car use, may inadvertently attack identity principles and result in increased resistance to change.

Related to habit is the role past experience plays in determining transport behaviour (Cao and Mokhtarian 2005). Weinberger and Goetzke (2010) examined the extent to which people maintain familiar yet irrational transport behaviours through changing circumstances. They examined whether people moving from rural areas, characterised

by endemic car use, to urban localities with relatively comprehensive access to public transport, are more likely to maintain a higher vehicle ownership rate than those moving from urban areas with similarly comprehensive access to public transport. In other words, Weinberger and Goetzke (2010) suggest that people carry transport practices with them when they move, regardless of whether these practices are the most efficient way to travel.

A recent development in research on the role of habit in mobility practice has been a critique of approaches conceptualising automobility as the result of an individualised and linear decision-making process (Urry 2012a, 533). The idea that changes to mobility practice can be enabled through awareness of cue-response behaviour has been particularly criticised (Schwanen et al. 2012). This critique has its focus on habit being more than automaticity and instead sustaining and nurturing of itself (Middleton 2011). This treatment of habit reflects a deepening of contemporary mobility research to consider mobility as maintained by complex knots of structures of provision and individual practices (Thrift 2004). It is a paradigm that is woven through the current study and one that is further explored in the following chapter.

Conclusion

This extensive review of literature on the reasons people drive cars has identified a number of key themes. Its principal finding is that resistance to alternative transport, and the attraction to automobility, cannot be explained by utilitarian motives alone. While a wide range of objective variables such as distance and time influence decisions to drive, various subjective factors such as attitudes, emotions, perceptions and interpretations are also operative. This is further confirmed by the fact that car use endures, despite increased costs, congestion and attempts to make alternative transport safer, cheaper and more comfortable.

What has not been addressed explicitly by this review is the idea that individual transport decisions are made against a background of broader systems and structures of provision which inevitably impact transport practices. Automobility cannot be detached from the “global economic networks, environmental resources, political legislature and expansive infrastructures” that support it (Merriman 2009, 586). There is an extensive literature exploring the way networks of power, knowledge and authority shape mobility (for example Freund and Martin 1996; Böhm et al. 2006; Paterson 2007; Urry 2008; Dennis and Urry 2009). This literature analyses the structural stage on which day-to-day practices of mobility are played out, and the systems active in underpinning that stage. Such structures are inevitably influential in determining the choices available to the mobile individual, and their exploration is imperative in any study on mobility. They are less useful, however, in fulfilling this chapter’s aim of exploring some of the specific answers to the question of why, given the existing socio-spatial condition, people drive cars instead of taking alternative transport.

Having examined some of the more conventional motivations for automobility, the following chapter explores different ways of theorising and analysing mobility. It starts to unpack and question the ways mobility practices have been conceptualised in research. This includes theorisations of the influence of systems and structures of provision on mobility practices as well as more traditional ways of thinking about transport behaviour.

Chapter Three: Paradigms of Mobility

Introduction

This study uses a constructivist grounded theory methodology. This choice of methodology is further explained in Chapter Four (see pages 75-76). It is important to note here, however, that although this study's findings are grounded in the data I collected, I have conducted the research in full awareness of the various theoretical traditions associated with transport behaviour and sociology. In this chapter, I unpack a selection of these theoretical traditions.

The introduction to a recent compilation of studies on motivations for car use proposes a framework of three dominant and one less conventional approach to the analysis of transport mode choice (Schwanen and Lucas 2011). The three dominant approaches have their roots in time geography, utilitarianism and psychology. The fourth approach has origins in systems theory and includes the new mobilities paradigm. The following analysis uses this framework.

I open with a return to the concept of time geography that was briefly introduced in Chapter Two. I progress to look at the way an ostensibly utilitarian approach to mobility has been used both to explain practice and inform policy. The contribution of psychology through various applications of psycho-social approaches to transport behaviour is explored. The chapter then delves into some of the less conventional approaches, including the new mobilities paradigm, and progresses to explore the way this paradigm has been developed and moulded by more contemporary research and practice. I conclude with a critical synthesis of these various theoretical traditions which paves the way for my own approach further detailed in Chapter Four.

Time Geography

Time geography was introduced in the Chapter Two as a way to conceptualise people's activities in space and time. Its influence can be found in the works of an array of social geographers and sociologists, particularly in social theories proposing dualisms of structure and agency such as Anthony Giddens' approach to structuration (1984), and Bourdieu's conceptualisation of habitus and field (1990a). These works are based on one very fundamental principle – that it is not time or space that is central to social ordering, but a relational configuration of time-space (Thrift 1996).

Swedish geographer Torsten Hägerstrand developed time geography in the 1960s as a way to illustrate how a person navigates his or her way through the spatial-temporal environment and is constrained by limitations (Hägerstrand 1967; 1970). Time geography is characterised by the use of three-dimensional representations of time, space and space-time to map a person's travel behaviour as sequences of trips and stationary activities (Hägerstrand 1970). These maps are translated into 'space-time prisms' which demonstrate the points that can physically be reached by an individual given a maximum possible speed from a starting point in space and time and an ending point in space and time. As an example, I have an hour to have lunch and would like to visit a cafe that is 25 kilometres away. I can travel at a maximum of 50 kilometres per hour. I leave at 1pm, travel 25 kilometres at the maximum speed, arriving at 1.30 just in time to turn around and, again travelling at the maximum speed, return to work by 2pm. The cafe is therefore unreachable for the purposes of my desired activity and hence outside of my time-space prism. However, if the maximum speed I can travel is 100 kilometres per hour, the prism's boundaries would widen and the cafe would be reachable by 1.15pm. Instead of having to turn back immediately, I could stay and eat my lunch for a full half hour before leaving, enjoying the increased accessibility enabled by my increased maximum speed.

A key contribution of time-space geography to transport research is conceptualisation of the impact of constraints on mobility (Hägerstrand 1984). The physical paths that people can take are controlled by the constraints in their space-time prism, known as

'potential path spaces'. Hägerstrand identified three categories of constraints shaping our potential path spaces:

- *Capability constraints* (also known as 'physical constraints'): the limitations on human movement due to instrumental restrictions (including physical or biological factors). For example, if I were to ride my push bike to the cafe I could not physically reach the 100 kilometres per hour speed limit and my time-space prism would again shrink.
- *Coupling constraints*: the need to be in one particular place at a certain time and for a certain time period. For example, I am constrained by my employer's requirement that I take just one hour for lunch.
- *Authority constraints*: laws, rules, or even norms that set limits to the access of specific areas at specific times. For example, if the café were not open between 1 and 2pm, my access would again be constrained.

Hägerstrand's approach to constraints, and the concept of potential path spaces, has been used by transport planners to determine accessibility, including for different socio-economic and demographic groups, as well as analyse existing transport patterns (for example Kwan 2005; Boussauw et al. 2012; Neutens et al. 2012). As reviewed in Chapter Two, a time-space geography approach explains automobility's hegemony as a product of the car's speed, flexibility and convenience of travel relative to alternative modes.

The time geography framework has been criticised by social theorists (for example Rose's often cited feminist critique) for its reductionist nature (Rose 1993), the failure to conceptualise the autonomy of the individual and an inadequate consideration of concepts such as social norms and power (Sui and DeLyser 2012). From a transport planning perspective, it is also difficult to incorporate any kind of flexibility into space-time modelling and avoid dichotomies of activities being either fixed or flexible (Goetz et al. 2009). Proponents of the paradigm have more recently been challenged by a relaxation of the boundaries that once conceptualised constraints - for example extended shopping hours, flexible working schedules and the ability to do many activities online at any time and in (virtually) any place (Schwanen and Lucas 2011). The time-space paradigm attempts to address these challenges using technology and increased integration with utility models and qualitative approaches (as reviewed in Neutens et al. 2011). Nevertheless, the basic principles of the framework remain

relevant and the subject of research aimed at explaining transport behaviour, some of which has already been reviewed in the previous chapter (see page 32). Although based on assumptions exposed by time geography, many of these more contemporary studies employ methods more characteristic of what are known as 'utility' models. The next section goes on to review this second way of thinking about transport behaviour.

Utility Models

In utility theory, mobility is a response to the physical separation of activities. For example, for the journey to work, this means the separation of the home from the workplace. This separation, and the need to traverse it to get to work, is considered a disutility which needs to be minimised. Travel choice is determined by a desire to maximise personal utility.

These models are essentially grounded in G.J. Stigler's original conceptualisation of utility theory as applied to the consumer. Here, the individual chooses from alternatives with the aim of maximising personal utility (Stigler 1950). This assumes that the knowing commuter compares different travel alternatives and subsequently selects the alternative that yields the most benefit compared to cost (Ben-Akiva and Lerman 1975). Cost is not limited to the monetary losses that may be incurred but includes other outlays such as time and physical effort. Utility is subjective and contextual. It is determined by the degree to which the alternative satisfies the individual commuter's needs and preferences. In utility theory, the car is the optimal mode of transport when it is comparatively the most economical and physically efficient way to travel (Balaker 2007).

The theory is applied through complex modelling of the variables that might inform or influence transport decisions and constitute the commuter's utility. These models are able to take into account various combinations of characteristics of the options available (for example, the monetary and time cost of driving compared with catching the train (Commins and Nolan 2010), the decision-maker (for example, demographic variables such as age, income and gender) and the situation (for example, the urban form at origin and destination) (Vega and Reynolds-Feighan 2008; Salon 2009). Using modelling techniques, coefficients are calculated for a variety of characteristics of the

choice alternative, the commuter making that choice and the situation in which the choice is being made. In this way, the relationship between these characteristics in the context of utility is revealed. In addition, models are applied both retrospectively to choices that have already been made and also to pre-suppose decision-making through stated-preference responses to hypothetical situations.

Utility theory has dominated research on transport behaviour since the 1970s. Technological developments have enabled some of the complexity inherent to its methods to be overcome, ensuring greater accessibility and dissemination of results (Schwanen and Lucas 2011). Further, the direct comparisons that can be made between the utility value of various variables modelled for large cohorts of travellers is a politically-appealing feature (Cao et al. 2009b). The coefficients derived from utility based models can be used to compare the elasticity of independent variables demonstrating, for example, how changes in ticket price, network accessibility and timetable structure might impact upon the probability that people will travel by train (Graham and Mulley 2012). The relationships between independent variables can also be calculated. As discussed in Chapter Two (see page 39), common use for this feature is to divide the coefficient for travel time by that of monetary travel cost to get an estimate of the value of time. Similar principles are applied to evaluate the value of reliability - the monetary value people are willing to pay for a reduction in the day-to-day variability of travel time for a particular trip. Both value of time and value of reliability calculations are used in practice to evaluate the economic viability of transport projects (for example Brownstone and Small 2005; Rong-Chang et al. 2010; Carrion and Levinson 2012).

One of the many critiques of utility theory is that its focus is primarily on utilitarian travel - that is, travel to get somewhere for some purpose. Mobility research has long recognised that mobility practices are a product of more than rational decisions to avoid disutility such as lost time and money, unreliability or avoidable effort (Mokhtarian 2005; Cao et al. 2009a). Utility theories do not account well for symbolic and emotional factors in the decision to drive (Steg et al. 2001; Steg 2005). They fail to take into account autotelic travel - that is, intrinsic travel, or travel simply for the enjoyment of travel (Cao et al. 2009a).

Another common critique, particularly relevant to repeat trips such as the commute to work, is that utility theory does not account for habitual or script-based decisions

(Diana 2010). For example, once a commuter finds the best route to get to work or the quickest mode, he or she is likely to use that route or mode as an automatic response rather than as part of a conscious and daily process of deliberation. Schwanen and Lucas (2011) discuss the idea that habit can be integrated into a utility model by incorporating variables accounting for habit or by analysing transport choice over time. The inability of these methods to separate habit from a persistent optimal choice, however, is cited as a remaining weakness in utility theory (Eriksson et al. 2008b; Klockner and Matthies 2009; Chen and Chao 2011).

Utilitarian studies increasingly integrate variables such as attitude and value structures into their modelling (for example Domarchi et al. 2008; Lois and Lopez-Saez 2009). However gaps still remain, particularly relating to affective and, as mentioned, habit based motivations for travel. These gaps have, in part, been filled by psychology-based models. These have emerged to enable a deeper conceptualisation of the role of emotion, symbolism and habit in determining travel behaviour. This chapter now turns to discuss these models.

Psychology Based Models

Theories and concepts from mainstream psychology have been applied to travel behaviour for some time, particularly in the context of theorising behaviour change. The Theory of Planned Behaviour (TPB) (after Ajzen 1991, see for example Bamberg and Schmidt 2003) and the Theory of Interpersonal Behaviour (TIB) (after Triandis 1977, see for example Verplanken et al. 1994) have been particularly influential in informing research in this area (Schwanen and Lucas 2011). There are, of course, many other conceptualisations of transport behaviour based on the approaches of mainstream psychology (see Shipworth 2000; Kollmuss and Agyeman 2002; Bonsall 2009; Brög et al. 2009 for reviews).

As demonstrated by a representation of the TPB in Figure 3.1, the TPB and the TIB are predominately linear models that essentially look at individual cognitive components, such as beliefs, attitudes and values, as predictors of behaviour. The idea in the context of travel choice is that if the cognitive components of an individual's travel

behaviour can be identified, they can also be modified. Behaviour change will logically follow.

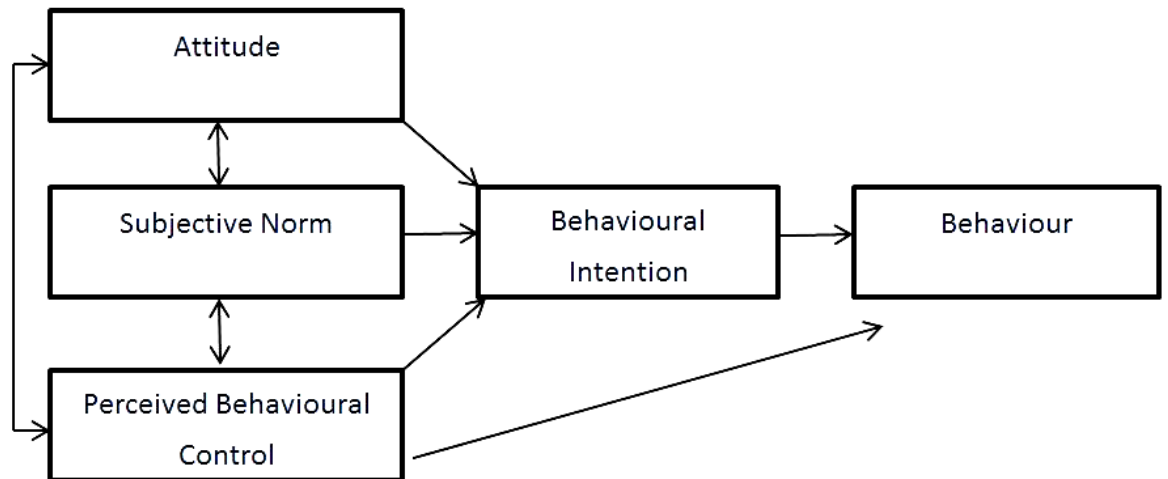


Figure 3.1: Representation of the linear structure of the Theory of Planned Behaviour (Ajzen 1991, 182)

The emphasis in these models is on the role of subjective and personal norms, attitudes and perceived control, with intention the focal antecedent to behaviour. They can be distinguished by their approach to the way habit motivates behaviour. The TPB views only intention and not necessarily habit as antecedent to behaviour. Intention in the TPB is the product of more rational cognitive components such as attitudes (for example 'riding a bike to work is bad'), subjective norm (for example 'people who matter to me don't think I should ride a bike to work') and perceived behavioural control (for example 'it would be hard for me to ride a bike to work'). In this way, the TPB model is called a 'rational choice model' and such models have been applied successfully to explain variations in intentions to drive, cycle or use public transport for the journey to work in certain contexts (Bamberg and Schmidt 1998 and 2001). These studies are considered to measure instrumental or rational motives in that the individual making the travel choice does so after conscious consideration of the utility of each option available. Components that precede intention, such as

attitude, are determined by elements such as time efficiency, cost, flexibility and comfort (for example 'riding a bike to work is bad because it is slow').

The TIB's incorporation of the notion of habit seeks to take into account the impact of automatic associations shaped by routine application of behaviour (for example Mannetti et al. 2004). Habit in this context is often conceptualised as non-deliberative and without reason, possibly in an effort to reduce cognitive effort in the context of frequently performed behaviours (such as the journey to work) (Garling and Axhausen 2003). It is automatic, script-based and something that needs to be challenged if behaviour is to be changed (Schwanen et al. 2012). This theory has been extensively used in attempts to understand pro-environmental behaviour. Its popularity can partly be attributed to its ability to include additional variables such as moral norms, belief salience and self-identity (Manetti et al. 2004; de Groot and Steg 2007).

Psychology based studies in travel behaviour usually combine and hybridise different models, including various versions of the TPB and TIB. For example, other psychological determinants such as measures of the symbolic and emotional elements of car use (Steg 2005) and the influence of the perceived need to be mobile (Haustein and Hunecke 2007; Hunecke et al. 2010) have been added to the TPB and TIB and attempts have been made to incorporate socio-demographic and infrastructural variables (Hunecke et al. 2007). This hybridisation comes in recognition of the complexity of travel behaviour and the inability to disassociate the way we travel from other social, environmental, political, technological, cultural and economic systems.

Despite such developments, these models have been criticised for their limited scope to consider social context, which has been shown to potentially override all the cognitive factors included in models of human behaviour (Stern 2000; see also Spaargaren and van Vliet 2000, Hobson 2003; Southerton et al. 2004; Shove 2003). Psychological models are also criticised as failing to account for situational fluctuations in the milieu of cognitive variables considered in transport decision-making (such as attitudes, beliefs and values). More recently, scathing dismissals of psycho-social approaches to transport and pro-environmental behaviour more generally have come from those exploring theories of social practice (Urry 2012a). Highlighting the psycho-social focus on "undersocialized methodological individualism" (Hargreaves 2011, 82), this critique proposes a failure to appreciate the complexity of the background against which mobility is actually practised (Shove 2003; Shove and Pantzar 2005; Hitchings

2011; Shove 2010a; Shove et al. 2012; Watson 2012). Dismissing any attempts that psycho-social approaches might make at incorporating a role for context in behaviour as simplistic and confounding, practice theorists claim to make way for a deeper conceptualisation of the way the actual practice rather than the individual sustains behaviour. This theoretical approach will be discussed in detail in Chapter Four.

In spite of an undercurrent of academic critique, the use of psycho-social models in policy has been popular (Shove et al. 2012). In an Australian context, Moloney et al. (2010) review over 100 local programs aimed at carbon reduction, the majority of which are based on behaviour change. This popularity is partly as a result of the appeal of the approach to neo-liberal notions of the 'responsibility of the individual' (Hargreaves 2011). Locating the problems of automobility as sustained purely by individual behaviours downplays the extent to which "the state sustains unsustainable institutions, conventions and ways of life" (Shove et al. 2012, 164). It is also possible that basing policy on psycho-social models of behaviour offers a relatively simple and easily adaptable framework (Taylor and Ampt 2003; Gardner and Abraham 2008). Such frameworks give often under-funded local agencies responsible for their implementation a sense of potency in what is inevitably a disempowering policy context.

This chapter has so far outlined three ways of thinking about mobility. Starting with the relatively rational approaches advocated by time-space geography and utilitarian perspectives, the chapter went on to describe models aimed at accounting for the impact of emotions, perceptions and attitudes on the way we travel. Common to all three theories is an explicit focus on the individual agent. Although psycho-social models integrate consideration of the impact of subjective norms, the idea that transport decisions are undertaken in the context of various overarching systems and structures (such as regimes of power related to politics and consumption) is not specifically addressed. Discussion now turns to ways of thinking about mobility based on the impact of the broader systems and structures within which it occurs.

The New Mobilities Paradigm

The cultural turn in the social sciences has a well-developed focus on mobility (Sheller and Urry 2006). Mobility here is defined more broadly than is generally conceptualised by transport research. Mobility in this context means movement which is not at all limited to the process of people getting from one place to another. It does include corporeal travel (for example, the daily commute), but extends to the physical movement of objects (such as the movements required to supply retail goods to a supermarket), imagined and virtual travel (such as perceptions and ideas formed about as yet unvisited cities), and all forms of personal communication (such as phone calls and text messages). It also extends to include the flow of ideas through the media. Media refers to both the mediated experience of what is happening in the world as presented on television, radio and the internet, as well as in newspapers (Giddens 1990), and the social media embodied by online social networking tools. Characteristic of this way of thinking about mobility is that it conceptualises these movements of people, things, and ideas as a 'system' capable of constituting of social life.

The way mobility is conceptualised in the social sciences transcends traditional disciplinary boundaries through consideration of the interface between transport, communications, travel, tourism, population, migration, and other related topics (Urry 2004a). This broad understanding of mobility has been explored most prolifically by sociologist John Urry, who together with Mimi Sheller labelled it the new mobilities paradigm (Sheller and Urry 2006). At the core of the new mobilities approach is a critique that social science has been overtly focussed on what is static in its theory and research. Urry cites Heidegger's attention to the concept of "dwelling" where the social is always grounded in units such as places, regions or nations (Urry 2008, 31) as an illustration. From this point, the new mobilities paradigm draws on a vast array of theoretical resources. Citing Simmel and Latour, mobility is networked and systematised in that people, things and ideas are wholly interconnected. Referencing Giddens, a relational approach to the structure-agency debate is assumed, although the focus remains primarily on a structuring autopoietic system where mobility is entrenched in various frameworks of power. Bauman's concept of liquidity (Bauman 2000) is also important as reinforcement of the shift from traditional concepts of modernity as fixed, "heavy and solid" (Sheller and Urry 2006, 210) to a system that is light and liquid, where movement is paramount. The new mobilities paradigm is also

characterised by its focus on typologies of social networks, placing particular importance on the weak and complex ties that stretch across time and space, binding those that are easily assumed to be unconnected, thereby revealing something about global connections in a world where social life is increasingly organised and nothing is left unplanned.

The new mobilities paradigm has not traditionally been used to explore transition or change as much as it has been a way to conceptualise or understand the social. Unlike the first three theories discussed so far in this chapter, the new mobilities paradigm does not generally explain mobility as much as it explores its impact and observes its form. Studies embracing the paradigm have been diverse. Büscher (2006) for example uses it to analyse the flow between ideas in conversation and their translation into graphic representation employed by landscape architects when assessing the viability of a development. Here the mobility is between ideas, words and the technical. The way this flow is structured and structures is shown to shape the outcome of the proposed development. In an even more radical application, Marvin and Medd (2006) study the issue of obesity by looking at the mobility of fat through individual bodies, cities and, finally, the infrastructure of the sewerage system. They explore a multiplicity of urban metabolisms, each with different interconnectivities and forms of instability. In all studies, mobility is viewed as an arbitrator of the socio-spatial dialectic. It is systematised in that it incorporates not only the movements of people, but of objects, images and ideas.

Automobility, including but not limited to the use of the personal car, holds particular significance in the new mobilities paradigm. Automobility is a socio-technical system, determining not only the way we travel and the spaces in which we travel, but also “the formation of gendered subjectivities, familial and social networks, spatially segregated neighbourhoods, national images and aspirations to modernity and global relations ranging from transnational migration to terrorism and oil wars” (Sheller and Urry 2006, 209). The car in the new mobilities paradigm is wholeheartedly positioned as a problematic phenomenon (Featherstone 2004; Böhm et al. 2006; Urry 2008; Dennis and Urry 2009).

Despite this, the car itself, the ‘automobile’, is not automobility. This term originates with the combination of ‘autonomy’ and ‘mobility’ (Featherstone 2004). In this sense, there are many automobilities – ways of movement that are autonomous and self-

directed (Böhm et al. 2006). Walking is perhaps the most autonomous movement possible, in that the able body can generally walk where it wants, when it wants, unconstrained by burdensome timetables and mechanics. However it is the car's capacity for *autonomous speed* that has ensured it is most often the form of mobility associated with automobility.

The new mobilities paradigm sees the system of automobility as made up of a number of interconnected components which act to orchestrate not only the production but the reproduction of the car's dominance. Automobility's appeal to capitalism, consumerism, culture and the absolute 'embeddedness' of the car in other practices and systems ensures that it is reinforced and reinforcing. These other systems include urban planning and the separation of uses, as well as the range of environmental resources and consequences required for automobility. They include the "machinic complex" (Urry 2008, 18) of more obvious infrastructural and governmental systems required for individual and mass automobile use. Road building and maintenance, traffic and parking regulations, car insurance, legal systems, healthcare and pollution control mechanisms are all systems linked in structure to automobility. The car as automobility is also an inherently cultural process. It is nationalised (Edensor 2004), gendered (Dowling 2000; Basmajian 2010; Barker 2011), generational (Best 2006; Barker 2009) popularised, marketed and consumed (Davison 2004). It appeals to communal desires for freedom of movement, new experiences, adventure, comfort, control, identity and solace (Dant 2004; Sheller 2004).

As the endemic use of the car is enabled by these various systems, it becomes not only a normal component of society, but one that is necessary for societal participation and individual flourishing. Automobility has enabled complex patterns of social life which have subsequently come to be not only socially acceptable but a precondition for social inclusion. The concept of automobility being a system that "generates the preconditions for its own self expansion" (Urry 2008, 118) is key to the new mobilities paradigm's understandings of automobility. Automobility is autopoietic. Society has been irreversibly "locked in" (Dennis and Urry 2009, 47) to the system of automobility. In particular, the way the flexibility of the car has enticed the individual to live a life that is increasingly fragmented and dependent on being adaptable in time and space is implicated. Automobility, for example, has enabled the viability of living comparatively vast distances from work, the acceptability of committing to spatially dispersed social

activities, the feasibility of living away from family and other support structures and the potential to accommodate flexible working arrangements. Ultimately, automobility promises a series of ideal freedoms, including the freedom to choose where one lives, works and unwinds. The idea that these promises are now locked in to cultural interpretations of 'the good life' has vast implications for any attempt to shift transport practices towards a less auto-mobile future. The removal of automobility as an impingement on freedom forms a key component of the current study and is explored throughout Chapters Seven, Eight and Nine.

Developments in the New Mobilities Paradigm

The way automobility is conceptualised by the new mobilities paradigm has done much to reveal the way cars as convenience devices have unbundled time and space. More recently, however, the inescapable dominance of automobility has been questioned. This questioning has led to further development of the new mobilities paradigm to deeper conceptualisations of the role systems and regimes of power play in shaping mobility.

This discourse generally relies on the idea that automobility is not an inevitable outcome of modern society. As Paterson claims, "autonomous mobility of car driving is socially produced ... by a range of interventions that have made it possible" (Patterson 2007, 18). Automobility is socialised, with the car providing a commodity around which a whole set of symbols, images and discourses have been constructed. Societies, according to Paterson, are built around a hegemonic culture of car ownership, with driving persisting as an ultimate mode of self-expression (Dowling and Simpson *in press*). Again referencing the cultural, this includes the car as represented in art, literature, popular music, film and advertising where it has often been associated with seductive forms of identity (Sachs 1992; Carrabine and Longhurst 2002; Edensor 2002; Edensor 2004).

The socialisation of the car, however, extends beyond culture to include inextricable linkages with other systems and regimes, including that of capitalism. Cars are the quintessential manufactured object with the car industry giving rise to definitive capitalistic concepts such as Fordism and Post Fordism. Here "the car industry *is* capitalism for much social science" (Urry 2008, 115). Automobility is sustained by a

powerful socio-economic and technological complex (Böhm et al. 2006). In their introduction to a special edition of *The Sociological Review* on automobility, Böhm et al. (2006) critique the new mobilities paradigm for its failure to more comprehensively address the power relations at play in sustaining automobility. Automobility here is positioned as a regime rather than 'just' a system, sustained by a Foucauldian emphasis on the relations between power, truth and subjectivity. The car's freedom is (necessarily) highly regulated. Traffic rules, speed limits, regulations on fuel efficiency, tolls, the direction of travel, the spatial and temporal availability of parking, taxes on imports and fuel are all evidence of state power deeply embedded in the regime. The necessity of the car, the embodied skill of driving as being habitual and taken-for-granted (Dant 2004), the failure of the state to internalise the true cost of driving, together with the continued supremacy of road construction in transport funding allocations, all act to normalise the car, fulfilling Foucault's premise of truth as a requirement for regime (Paterson 2007). Finally, the car as automobility's regime is confirmed through subjectivity in that the car is normalised in much of contemporary society (Paterson 2007). The normal 'auto-mobile' subject drives, while the 'other' catches the bus or rides a bike (Bonham 2008; Aldred 2010; Green et al. 2012; Guell et al. 2012). To drive is to be self-motivating and the self-motivated subject in the neo-liberal state is entirely legitimised (Hargreaves 2011). To be able to be autonomously mobile, to drive, is to be free.

In summary, the way the new mobilities paradigm conceptualises corporal transport is developing through questioning of the hegemony of the regime of automobility. In this 'post new mobilities paradigm', automobility is reinforced by its ability to encapsulate structural elements of power, truth and subjectivity, as well as cultures of security, identity and autonomy, all of which act to mutually reinforce the other such that the regime is reproduced. Automobility here, however, has become entirely contestable and is not necessarily conceived as inevitable. Because automobility involves power relations, its hegemony is open to challenge (Cohen 2012).

Post the New Mobilities Paradigm

Automobility's contestability results from recognition that if the hegemony of the car is socially and culturally constructed, it follows that it can be socially and culturally

deconstructed. In this vein, a body of work has emerged seeking to specifically question the hegemony of the system of automobility at various junctures. From diverse perspectives attention has turned toward the fissures, or cracks, within the structures of automobility as potential sites of change. Katherine Goodwin (2010), for example, argues that the connections between gasoline and notions of freedom and progress are by definition tenuous rather than fixed. Cohen (2012) sees “weak signals of instability ... [in] automotive entrenchment”, such as a revised war against the automobile (Cohen 2012, 380). And Kemp et al. (2012) have recently argued that automobility is dynamic, riven with tendencies of both stability and change that render its future course less certain than conventionally imagined.

Despite some emergent doubt around the hegemony of our taken-for-granted car-dependency, the literature here is in its infancy. The implication is, however, that the sole supremacy of the system so integral to the new mobilities paradigm’s explanation of automobility is increasingly open to debate. Questions remain as to how the system of automobility continues to be sustained and how its hegemony might be punctured. My proposal is that a deeper understanding of mobility practices is required to reveal the extent to which automobility is embedded in modern life. Driving a car is a routine performance deeply ingrained in the day-to-day doing of modern life in many cities. To question the system of automobility opens an opportunity for the (re)incorporation of a role for individual agency in conceptualisations of the cars persistent hegemony. Such understandings will not only lay bare the extent of automobility’s stronghold, but also reveal spaces from which to exploit its emergent fissures. This position, recognising automobility as a fractured practice rather than a perpetually autopoietic system is a key component of my own theoretical approach which is articulated in full in the following chapter (Chapter Four).

Conclusion

This chapter has outlined a number of ways that transport behaviour has been theorised in the literature to date.

The chapter opened with an examination of time-space geography's application to the transport field. It was explained that one of time-space geography's key contributions is recognition that transport behaviour can be explained by an individual's navigation through time and space. This navigation inevitably seeks to maximise accessibility in the context of various constraints. Focus then turned to utilitarian theories and their emphasis on rational/instrumental motives for transport behaviour. It was proposed that the 'knowing' individual in utilitarian theory makes transport decisions based on a desire to minimise dis-utilities associated with the need to overcome the constraints of distance. The contribution of psychology through application of psycho-social approaches to transport behaviour was also explored, showing how individual cognitive variables, such as beliefs, attitudes and values, are predictors of behaviour. Finally, the principle components of the new mobilities paradigm as it relates to automobility were discussed. The way this paradigm has developed to focus on systems to the construction (and de-construction) of systems of power was explored.

A juncture was reached recognising a shift towards the re-incorporation of a place for individual agency into explanations of mobilities motivations based on systems. An obvious distinction arises here between conceptualisations that call into question the relative influence of structure when compared with agency on mobility. Utilitarian and psycho-social approaches, as well as time geography as applied to everyday mobility, locate transport behaviour very much within the actions of the individual agent. Although systems such as those determining time commitments, traffic conditions and social norms are considered influential and/or constraining, these ways of thinking about transport emphasise individual negotiations of and motivations to travel. In contrast, the new mobilities paradigm is centered on the way the system of mobility is structured, inferring that this system determines transport behaviour. The past few years has seen a more nuanced view emerge, with attention now turning towards cracks within the structures of automobility as potential sites of change. These cracks

open space for conceptualisations of automobility practices that are the product of individual actions situated within an array of systems and regimes.

I have previously proposed that the systems purportedly so integral to automobility need to be examined at the site where automobility is individually and routinely practised. This exploration, however, should also acknowledge and account for the role that systems of automobility might play in shaping individual practices and the role of the knowing individual who is being mobile. Recognition of the duality of structure and agency in the actual practice of mobility underpins my approach to its study. The following part of this thesis goes on to describe this approach in detail, starting with a deeper explanation of my theoretical position based as it is on structure, agency and practice.

Part Two: Approach

Chapter Four: A roadmap for mobility research

Introduction

Theory is an account – a general and abstract ‘telling’ (Schatzki 2001). My attempt to theorise the private car’s dominance is not intended to explain why people travel the way they do. Instead, I present an account of the way automobility has emerged in an effort to explore how it might be punctured. I present a theory ‘about’ rather than a theory ‘of.’

This chapter details a theoretical proposition which has been developed as the result of my use of a constructivist grounded theory methodology (after Charmaz 2006). I start the chapter by revisiting the concept of grounded theory (introduced on page 56). I then focus on the theory of structuration, expanding on the discussion of structure and agency that concluded Chapter Three. This discussion leads to the introduction of a relatively new way of thinking about mobility, that of mobility as a social practice. I outline and subsequently critique social practice theory as it is applied to mobility practices and conclude the chapter with a clear articulation of my theoretical position.

On Grounded Theory

As a study using a constructivist grounded theory methodology, the theoretical proposal that follows has been as much informed by my observations of existing mobility paradigms as it has by my findings. Its development occurred concurrent to the process of data collection and analysis described in Chapters Five and Six.

The various theoretical frames outlined in Chapter Three display degrees of tension between the relative influence of structure over agency on mobility practices. This apparent dichotomy will be further discussed below however it is raised here as an example of apparent theoretical asynchrony in existing mobility research to justify the current study's use of grounded theory. Constructivist grounded theory has been used in this study because it enables existing theoretical tensions to be exposed and explored in the context of fresh data.

Grounded theory is an inductive methodology where the aim is to generate new theoretical suggestions (rather than empirical explanations) grounded in data and based on observation (Bryant and Charmaz 2007; Giske and Artinian 2007; Corbin and Strauss 2008). At the beginning of the previous chapter, I introduced my use of grounded theory as based on later forms of constructivist grounded theory (Charmaz 2006). This simply means that I came to this study from several 'points of departure' – in full awareness of the findings of the various theoretical traditions associated with transport behaviour and sociology. In this sense, the traditionalists in grounded theory (for example Glaser and Strauss 1967; Strauss and Corbin 1990; Strauss and Corbin 1998) might argue that I am not conducting a truly grounded study. I contend that one can never really disconnect oneself from one's own tacit knowledge and understandings. Using a constructivist grounded approach, I hope to stretch ways of thinking about transport behaviour in new directions (Seaman 2008) and have thus explored existing theories prior to embarking on my own grounded journey. I agree with Charmaz (2006) and suggest that "to take part in the current theoretical debate, we should understand it" (Liamputtong 2009, 212). The existing literature and

theorisations of transport behaviour, however, do not *define* my own observations. The theories that were in my mind prior to entering into my research are not (necessarily) those I have used to analyse my data and develop my own theoretical proposition (Thornberg 2012). Although I have come to this study with ideas informed by existing theory, these have been questioned, and ultimately shaped, by the themes that emerged from the data I collected.

Structure, Agency, Background, Practice

As mentioned above, Chapter Three concluded with recognition that a key area of asynchrony between the various ways of theorising transport behaviour is their treatment of the relative influence of structure when compared with agency. Utilitarian and psycho-social approaches, as well as time geography as it has been applied to every-day mobility, locate transport practices as the outcome of the actions of individual agents. The new mobilities paradigm, on the other hand, has its basis in the way the system of mobility is structured, inferring that it is this system that determines the way people are mobile. I propose that in prioritising the agent or structure, these ways of thinking about mobility prove insufficient to explore mobility practices.

My position is that neither the influence of the system of mobility (structure) nor the actions and motivations of the individual (agency) can be entirely negated in any understanding of the way we travel. Transport behaviour is shaped by the individual, the individual is shaped by the system and so on.

Structure, Agency...Structuration

The “structurationist school” (Thrift 1996, 68) encompasses a group of theories designed to recognise the dialectical nature of the dualism of structure and agency. Thrift suggests that elements of a theory of structuration were first proposed by Berger and Luckmann (2011). The theory has since been developed most prolifically by

Anthony Giddens (who actually coined the term structuration) (1984) and Pierre Bourdieu (1990a and Bourdieu and Wacquant 1992).

While each theory of structuration has its nuances, there are commonalities beyond the message that the dialectical relationship between structure and agency is the best position from which to observe the way the social is shaped and lived.

First is a concentration on practice. Social structures are very much constituted by and constituting of human practices. Automobility is problematic because it dominates the day-to-day navigation of modern life. Any exploration of why people drive needs to focus on mobility as it is practised in day-to-day life. This study proposes to have an overt focus on routine practice and this focus is explained in detail below.

The second area of common ground is a complete rejection of functionalism (Thrift 1996). The functionalist perspective in sociology emphasises an organic social tendency towards moral consensus and social order. This natural drive towards consensus shapes social action. Functionalism assumes there is a certain natural or normal state of cohesiveness to society, often overlooking the ways that conflict and creative social action can influence social ordering (Giddens 1995). Apart from the tendency to recognise the influence of issues of power, inequality and struggle, structurationists are anti-functionalist in their distinct avoidance of teleology (Bryant and Jary 1991; Brenner 1994). A teleological description of social phenomena describes aspects of social action by the function it fulfils. For example, the way utility perspectives of travel behaviour assume that driving to work is a function of speed has teleological and therefore functionalist inferences.

A third commonality is the way structurationists ground social action in time and space. Social ordering cannot be divorced from context because the practices that mediate structure and agency are inevitably spatially and temporally constrained. The way practices intersect in time and space is a defining component for social existence. This characteristic links what is a relatively conceptual socio-cultural theoretical proposition to the more empirical interpretations of Hägerstrand's time geography discussed in detail in Chapters Two and Three. Time geography has a focus on

potentiality of action within various constraints presented by time and space. Structuration theories emphasise the way these constraints mediate the social. The duality of agent and structure is maintained through society's structuring of time and space and the agent's negotiation of this structure.

Regardless of the nuances of theories recognising duality in structure and agency, of relevance to my own theoretical perspective is firstly the way the structurationist school avoids a functionalist perspective with its overt emphasis on organic solidarity and teleology. Mobility practices cannot be analysed at the site of their end result. Automobility, for example, is not the carbon emissions it produces as much as it is the day-to-day practice of negotiating streets and the demands of modern life. Also of importance is the structurationist emphasis on time and space in that social action is inextricably and necessarily grounded in context. Mobility practices are "home grown" (Shove and Pantzar 2005, 62) and always shaped against the backdrop of a spatial and temporal context. Of final relevance is the idea that neither agency nor structure is sufficient on its own, nor can it be consistently prioritised, in explanations of mobility practices. Applying this duality explicitly to transport behaviour infers that the way we travel cannot be sufficiently explained exclusively by structural influences or by the influence of the agent. Structures of traffic regulations, the geography of employment, the cost of public transport and the demands of flexible working hours both constrain and enable car use; however they cannot, on their own, explain why people drive to work. Individuals make choices and act by either taking advantage of, or avoiding various structural constraints. Furthermore, people shape their practices around structures and their interpretations of constraints breathe life into structures.

Background

"But ask yourself: in what sort of case, in what kind of circumstance, do we say, 'Now I know how to go on'?" (Wittgenstein 1958, 154 cited in Thrift 1996, 8).

Concurrent to acknowledgement of a duality of structure and agency, I also wish to recognise the inherently cultural concept of practical knowledge – the “world of daily life known in common with others and with others taken-for-granted” (Garfinkel 1967, 35).

In his useful overview of cultural approaches, Reckwitz (2002) starts with a very simple ‘lesson’ on the place of cultural theory, which he classifies as a subset of social theory. His attempt at social theory categorisation views social action and order as a) underpinned by the pursuit of individual purposes, desires, intentions, and motivations – an individual ‘will’, or, b) guaranteed by a collective pursuit of normative consensus – a social ‘ought’. A culturalist outlook nestles itself amongst what it deems to be a theoretical blind spot between social order and action as motivated by individual desires, and social order and action as arrived at by normative consensus. This blind spot, or theoretical space, arises from the failure of the aforementioned two categories to conceptualise a way to articulate, for example, what is desirable to the individual and what is normal to the collective. Cultural theory therefore often explores the nature and implications of this “implicit, tacit or unconscious layer of knowledge” (Reckwitz 2002: 246).

The individual carries an underlying practical knowledge of the world. Practical knowledge is the idea that we simply know what feels right and what feels wrong. We know how to be in the world, how to cope and find our way. This notion of universal “practical intelligibility” (Thrift 1996, 10) requires some formulation, or at least acknowledgement of the conditions through which everyday knowledge becomes manifested. This is a difficult task because it requires articulation of what is essentially characterised by its inarticulate nature. As Searle describes, it is akin to asking the eye which sees, to see itself (1983). The concepts of ‘background’ (Wittgenstein (1958) for example as discussed in Searle 1983) ‘pre-ontology’ (Heidegger, for example as discussed in Dreyfus and Hall 1992), the ‘space of the lived body’ (Merleau-Ponty 1962) and Bourdieu’s concept of ‘habitus’ as related to the ‘field’ (Bourdieu 1990b) have been developed to describe the space in which this knowledge lies. Each conceptualisation refers to a “familiarity with the world that enables us to make sense

of things” (Dreyfus and Hall 1992, 2). It is how we know what to do. This background does not depend on any one particular “universal subject” (Dreyfus 1996, 162), although it is reliant on socialisation because shared knowledge is produced. To Bourdieu, the background – habitus - is “historically constituted” (Bourdieu and Wacquant 1992, 18), that is, it is layered like sediment on the ocean floor reflective of social conditions through time. To de Certeau (1984) it is spatially constituted, examinable through a spatial syntax.

Attention to this background, to the unarticulated meanings that encapsulate objects, pursuits and representations, can provide a different perspective on socio-spatial ordering, including mobility. It opens the possibility for understandings to be gained from meanings and representations inherent to the way we are mobile in everyday life. From this position, the routine practice of the journey to work and the role it plays in giving meaning to other routines, identities and values, can be seen as a potentially powerful place from which to analyse transport behaviour (Thrift 2004).

Practice

In my desire to avoid dualisms of structure and agency and focus on the day-to-day ‘doing’ of transport behaviour I am drawn to the recent revival in the application of practice-based approaches to the analysis of social order.

Theories of practice have become increasingly popular in scholarship on sustainable transport and have been used to explore ways of moving beyond automobility (Birtchnell 2012; Watson 2012). Whilst there remains considerable debate about the precise character of practice theory and its value (see Shove 2010b), it is relatively settled that a practice lens can shed considerable light onto the persistence and fracturing of automobility (Shove et al. 2012). Practice theory especially critiques the view that behaviours are the result of an individualised and linear decision-making process (Urry 2012a, 533). Instead, routine human action is understood as a product of collective social practices influenced as much by the environment as it is by personal preferences or processes of deliberation (Hitchings 2011). Watson (2012) has recently

argued that this critique usefully moves transport scholarship beyond the attitudinal focus of psycho-social approaches characterised by increasingly complex models of individual behaviour change.

It is not my intention to comprehensively overview, nor advocate, practice theory in this thesis. I do, however, situate practices as a site from which to analyse automobility's endurance. The following description of practice theory provides a scaffold for this analysis.

Practice theory treads the line between structure and agency, reflecting a structurationist approach. It is inherently cultural in that it locates the social in everyday embodied practices (Reckwitz 2002). Practices, rather than the individuals who carry them out or the social structures that seemingly host them, become the core unit of analysis. For example, in undertaking a study to understand why people take a morning walk, a behaviouralist might focus on the attitudes of individuals to walking. A structuralist might look at the role walking plays in reducing government health care costs and how this affects support for its uptake. A practice theorist, however, would focus on the actual day-to-day practice of walking. She would look at the skills (such as negotiating pathways), images (such as of freshness and health), and materials, (such as shoes and a hat) involved in the practice of walking. She would explore the way the practice of walking connects with other seemingly unrelated practices, such as maintaining a simplified morning routine to make time available for walking. These connections would be explored for clues as to their role in shaping the practice of the morning walk.

Practice theory views everyday tasks, like walking, as complex constructions of interconnected and interdependent elements. These elements have been listed in various formats throughout the literature. For Reckwitz (2002, 249) they include "bodily movements", "mental activities", "objects" and "the use of objects", "ways of knowing" and "states of emotion". For Shove and Pantzar (2005, 58), they include "skills", "images" and "materials" and for Shove et al. (Shove et al. 2012, 8) they are "competences", "meanings" and "materials". These elements combine to form a

practice which cannot then be reduced to any one single item (Reckwitz 2002). It becomes an entity which has enduring existence that extends beyond individual instances of action, the cumulative performance of which constitute a pattern which becomes a practice sustained over time (Shove and Walker 2007; Birtchnell 2012). As an illustration, again reflecting on the nature of daily walking as a social practice, one must examine the practice as a block of elements - body stepping, mind knowing which side of the path to use, shoes protecting the feet and sensations of calm descending - rather than attempt to pull apart the elements. Walking is not as much about shoes, footpaths or social norms as much as it is about the ways these things interact in practice. Further, as practices convene and reconvene in routine they become interconnected with other practices which in turn involve the use of different skills, images and materials (Shove and Pantzar 2005). Referencing Latour's Actor Network theory (Law 1994), this mess of interconnectedness is sometimes referred to as a "bundle" of practice (Hargreaves 2011, 87). For example, for some people, the practice of walking home from the train station cannot be naturally extracted from the practice of cooking dinner since they generally purchase the supplies for dinner as they pass the shops on the way home. Similarly, for some, the practice of taking a morning walk with the family dog cannot be naturally extracted from the practice of providing a convivial family home which they feel requires the presence of a companion animal. These bundles of practice are not necessarily incapable of being 'unbundled'. The point in practice theory is to firstly observe the role of the practice in the context of the routines of day-to-day life.

The idea of using everyday skills, images and materials, and the intersections between them as the location and locator of the social in social phenomena has been explored by many social theorists, although these authors do not all use the term 'practice theory'. Bourdieu published his "Outline of a Theory of Practice" in 1977 (Bourdieu 1977), while Foucault's interest in regimes of practice and an emphasis on bodies, agency, knowledge and understanding is also understood as praxeological (Dreyfus 1996). Merleau-Ponty's emphasis on the body and later on flesh in lived experience also theorises practice (Merleau-Ponty 2008). Thrift is explicitly interested in the

“sensuousness of practice” (Thrift 1996, 1). This is articulated through his engagement with non-representational thinking and models. Distinctions are also often drawn between actor network theory and practice theory, particularly for practice theory’s approach to materials (see for example Thrift’s (1996) discussion of actor network theory, 23-27). Practice theory explicitly recognises the role of things (objects, technologies, non-humans) in the socialisation process.

More recently, practice theory has been formalised by German sociologist Andreas Reckwitz (2002) and American social theorist Ted Schatzki (Schatzki 1996 and Schatzki et al. 2001). Schatzki’s work has focussed on the idea of the duality of structure and agency by proposing practices as both the structured agent and the structuring. Schatzki was originally very interested in the way practices are as much coordinating as they are carried out. Reckwitz’s landmark 2002 article is a more systematic outline of a social theory of practices. Its emphasis is on the mid-ground between agency and structure as being located in the routine performance of everyday practice. As a theorisation, the work of Reckwitz (2002) has located practice theory within the work of a number of the abovementioned cultural scholars and made the concept more accessible.

Reckwitz and Schatzki’s frames for practice theory have since been applied in various ways to different agendas. Of relevance to this study is the application of practice theory to the exploration of transition to more environmentally sustainable ways of living. Hargreaves (2011), for example, compares the placement of the social in practice with the focus on the individual promoted by psycho-social theories of behaviour change as applied to pro-environmental transitions in the workplace. Shove (2003, 2010a and 2010b); Shove and Walker (2007, 2010); Pantzar and Shove (2010); Maller et al. (2011); and Spaargaren (2011) have also used practice theory explicitly in examination of the uptake (or otherwise) of sustainable practices including showering, ‘green’ home renovations and sustainable consumption more generally. Hitchings has applied a practice approach to examine the way different social and demographic groups use green space (2010), air conditioning (2011) and heating (Hitchings and Day 2011).

Exploring automobility specifically through recourse to everyday practice is relatively novel. There are notable exceptions. Warde (2005) applied practice theory to 'motoring' however Warde's exploration is based more on practices of consumption as related to car culture rather than autonomous mobility as such. More recently, Watson (2012) combined practice theory with systems theory to analyse the uptake of cycling. Birtchnell (2012) also hybridised practice theory to incorporate the influence of socio-technical systems in mobility theorisations. Both of these contemporary applications tend to stylise practice theory towards a socio-technical systems approach. Although this is done in an effort to create a theoretical space for the analysis of change in a practice-based framework, seeking answers through systemising practice seems incongruent with its initial aim to observe what is actually and corporally done in the patterns comprising ordinary life.

Applications of practice theory to mobility generally emphasise the way practices become systemised and subsequently reproduced. Despite a call from Reckwitz to view the "individual [as] the unique crossing point of practices, of bodily-mental routines" (2002, 256), the individual doing the practice is somewhat neglected as a site from which to glean insights into the relationships between practices and other concepts such as identity and sensibility. A subtle indifference to the individual forms the basis of my critique of practice theory. Discussion now turns to the way practice theory is woven through my theoretical position.

My Position and Practice Theory

Practice theory provides tools and perspectives which are potentially powerful when applied to explorations of mobility behaviour. The following section describes the way practice theory has influenced theoretical position. It progresses to detail what I believe are areas of paucity in existing applications of practice theory to automobility.

Practice theory's focus on the dynamics of embodied, everyday life forms an integral component of this research. The dailiness of the journey to work and the role it plays in giving meaning to other routines, identities and values, conceals as yet unexplored

motives for mobility behaviour. Practice theory “especially critiques the view that behaviours are the result of attitudes” (Urry 2012, 533). It has a focus on what actually is, rather than what is thought about (Schatzki et al. 2001). Practices cannot exist without bodily movement (Pouliot 2008). They must be articulated and presented - rather than ‘represented’ - outwardly through embodiment in some way (Thrift 1996). The body in practice theory is not the frame around social structures, a “sideshow to the ‘real’ business of existence” (Thrift 1996, 6). In transport literature, this focus on embodiment distinguishes a practice-based approach to mobility most distinctly from the attitudinal focus of psycho-social approaches (Watson 2012). Although I do not wish to exclude the influence of what is ‘un-practised’, I do propose that what people actually do in their day-to-day routines should be explored in examinations of mobility.

I am also drawn to practice theory because of the way it explicitly recognises that individual everyday life practices are interconnected. Practice theory is a theory of process – it seeks to explain by tracing the stream of events through which a process unfolds (Shove et al. 2012, 144). The interconnectedness of people’s everyday practices is as influential as more conventional structures of regimes and systems (Hargreaves et al. 2011). For example, an individual’s decision to drive to work may be just as much dependent on his or her need for time out from his or her children as it is on the price of petrol. Resistance to alternative transport might therefore be reinforced horizontally (through relationships between different practices) as opposed to vertically (through levels of regimes and systems) (Hargreaves et al. 2011). It may also be reinforced through the relationships between different elements of skills, images and materials (Shove and Pantzar 2005). I am interested in the way transport practices are dependent on the active integration of various elements (Watson 2012). Exploring mobility requires an unravelling of the way its practice may have very little to do with actual systems and regimes of transport. Instead, resistance may be embedded with other practices, systems and identities, for example related to self-care, parenting, presentation, working or socialising.

The practice approach to routine is also used explicitly in this study’s explorations of car use. In practice theory, the individual becomes the agent of practices as he or she

convenes and re-convenes to carry out a practice. This then becomes routinised which in turn contributes to social ordering (Reckwitz 2002). Practices are not merely sites from which to view the social, but are “ordering and orchestrating entities in their own right” (Shove 2010a, 471). In this sense, practice theory references Foucault’s view of discourse (Foucault 1970) and Wittgenstein’s view of language (Wittgenstein 1958) in that practices as routines locate, rather than are simply the location of, the social. It is the day-to-day practice of car driving and the way it bundles together and around other routines that sustains automobility.

According to Reckwitz (2002), routines can provoke transition because of their temporality. Routines, by definition, have a beginning and an end. Change happens because events of ‘out-of-place-ness’ in routines are inevitable. These events may be an unremarkable happening or an epic rupture in the course of an agent carrying out a practice. For example, the car requires a service, forcing the driver to catch the bus to work. The seed of an idea of catching the bus is planted, the skills are learnt and technology negotiated, with the possibility of reproduction in the future. These ‘out-of-place’ predicaments require pragmatic innovation on the part of the individual who uses existing knowledge to alter the practice and move through the ‘situation’. This idea of “puncturing practice” (Hitchings 2011, 2838) has been used to explore the potentiality for a shift away from other behaviours such as staying inside the office at lunch time (Hitchings 2011). Of key relevance to automobility is recognition that a shift away from car use requires intervention into routine. Intervention might come from within any one of the elements or practices that, from time to time, interact with mobility. Explicit recognition of this complexity reveals as yet underexplored spaces where car use might be intercepted and changed.

Some Clarifications on Practice Theory

I indicated above my intention to avoid an overt prescription to practice theory in this thesis. I have used practice theory as a key starting point of observation, particularly for its focus on the dualism of structure and agency, the way it treats routine and

context and its appreciation of interdependence and interconnectedness within routines and context. From the outset, however, I propose that the way practice theory has been applied to explorations of mobility behaviour has thus far been limited.

A key critique of practice theory is that it has largely been used to observe what is, rather than to 'suppose' what might be. In exploring opportunities for a shift away from car-based autonomous mobility, I propose that some attempt needs to be made at 'ordering' practices. In other words, what is it that makes some practices drift away over time, while others endure? Emergent research using practice theory attempts to address this "apparent difficulty in accounting for change" (Watson 2012, 488) through recourse to the socio-technical systems sustaining and being sustained by practice (see for example Schmidt and Volbers 2011, Birtchnell 2012 and Watson 2012). I propose, however, that the role of the individual in shaping practice has been underestimated.

Ehn and Lofgren view routine practices as both "prisons of ingrained and inflexible habits" and "helpful supportive structures that offer security and predictability" (Ehn and Löfgren 2009, 101). It is reasonable to suggest, therefore, that some practices are more valuable to the individual than others. In practice theory's aversion to the "undersocialized methodological individualism of the behavioural models" (Hargreaves 2011, 82), subjective interpretations of the value of practices are often neglected. Subsequently, the meanings embedded in practices are as yet underexplored sites, despite the possibility that these meanings sustain deeply entrenched ways of doing and being in modern life, including automobility. What it means to drive a car is potentially just as important as the other elements comprising the practice of automobility, such as the skill of driving and the material object of the car itself.

This proposal to hone in on the meanings inherent to automobility does not rouse conceptual incapability with practice theory as much as it implies an intention to explore an element of practice that I believe warrants increased focus. My second concern with practice theory, however, is perhaps slightly more contentious and it relates to the role of sensory experience in the practice approach. As indicated above, I

agree that there is value in concentrating on what is embodied. Automobility is a problem because it is practised, not because it is contemplated. Following Thrift (1996), however, I wish to avoid any strict (Cartesian) notion of mind-body dualism. The way we live and interact in practice can sometimes be determined by what we feel – the “embodied dispositions” structured by and structuring of practice (Thrift 2001, 36). For example, participants in the current study often cited feeling cool as a result of the car’s air conditioning as motivation to drive to work (this will be explored in detail in Chapters Seven and Eight). Feelings can reveal rich understandings into what motivates practices, yet practice theory does not generally consider sensory experience as a legitimate element of practice. Elizabeth Shove’s now well-known deconstruction of the practice of showering (Shove 2003; Shove and Walker 2007; Shove et al. 2012), for example, does not incorporate the idea that showering is sustained because, in a very visceral and embodied way, *feeling* clean *feels* good. Feelings are elements of practices often construed as individualised and as such it is possible that their apparent omission relates to practice theory’s aversion to the use of individuals’ beliefs, attitudes and values as predictors of behaviour. Regardless of its root cause, I propose that as a result, the extant practice-based literature has made only incremental attempts to explore the way some unsustainable practices, including the practice of driving, are truly embedded in ways of being in contemporary society.

Yet there is much to gain through an orientation of practice theory towards sensibility. The dialectical relationships that exist between sensibility and car use have been touched upon by the psycho-social literature on mobility behaviour seeking to prove a predisposition to car supported sensations such as empowerment, self-esteem, safety and superiority (such as Steg et al. 2001 and 2005). However there remains a need to explore the ways these supposed endogenous psychological preferences are “generated by collective cultural patterns” (Sheller 2004, 223). Feelings are sensed through embodiment yet they are also regulated cultural conventions that determine the boundaries of sensory acceptability (Bendelow and Williams 1998). People become accustomed to certain standards of feelings and prescribe to various cultural standards

about what is acceptable and not acceptable (Hochschild 1979; Lash and Urry 1994; Featherstone 2007).

Practice theory potentially offers a way to bridge the gap between psycho-social conceptualisations of sensibilities, their enculturation and resultant expression in practice. A focus on practices enables conceptualisation of the ways feelings are “elicited, invoked, regulated and managed” through culturally influenced “expectations, patterns and anticipations” (Sheller 2004, 226). And a more explicit consideration of the role of feelings in sustaining or shifting practices might give clues as to ways that problematic practices might be challenged.

There is a range of different means through which a focus on sensibility as an element of practice can illuminate the ways sensibilities become socialised and practices come to endure or shift. Here I want to pick out three key mechanisms. First, practice theory allows for explorations of the ways feelings become routinised and how “feeling rules” (Hochschild 2003, 82) might be established through repeated performances. The routine experience of the car’s climate control, for example, establishes expectations of ‘how much’ control over climate is acceptable in modern life. Second, practice theory enables conceptualisation of the way the feelings contributing to the elements of one practice might be bundled to and compare with others. Sitting in the ergonomic comfort of the car, for example, feels ‘better’ when compared to the sensation of supporting one’s own weight while standing on a train. Yet supporting one’s weight on a train might feel better (to some) than propelling one’s body through walking. Consideration of the way the feelings experienced in one practice compare with those experienced in competing practices may shed light on the way one practice endures over another. Third, and related, is the way recognition of the interconnectedness of practices enables explorations of how sensory boundaries associated with one practice are shaped by those experienced in a seemingly unrelated practice. Here, practices are conceptualised as compensating one another, rather than competing. Feeling crowded in a high density apartment building, for example, may be compensated by the sensation of privacy afforded by the personalised cocoon of the car.

Automobility supports a geography of sensibilities (Sheller 2004) - sensibilities that are “seemingly instinctual yet clearly a cultural achievement” (Sheller2004, 225). I follow Sheller (2004) to affirm that these sensibilities are as central to understandings of the persistence of the car’s hegemony as rational-instrumental and other approaches emphasising the car as technically and politically cemented. And practice theory offers a way to explore this geography. To do this, however, requires deeper acknowledgement and more sophisticated considerations of the “embodied pre-dispositions of car users and the visceral and other feelings associated with car use” as elements of the practice of automobility (Sheller 2004, 223).

A Theoretical Position

In summary, my theoretical position is based on a conditional interpretation of practice theory. This condition is essentially the ability to remain open to there being a role for individual subjectivity and sensibility in the ordering of practices.

I propose that mobility is a product of practices that are both structured and structuring. These practices are visible in daily routines. Practices are themselves interconnected and these ‘bundles’ provide a rich site from which to reveal telling connections that might be missed in more conventional analyses of mobility. In exploring potentiality for change, however, some attempt needs to be made at ordering practices and to do so requires explicit acknowledgement that people engaged in a practice are active and creative practitioners. It is the individual who must learn and maintain the skills, purchase or otherwise obtain the materials and interpret and negotiate the images that together constitute a practice. Individual perceptions, accounts and feelings must therefore be incorporated into analyses of the way practices are produced and reproduced.

Conclusion

This chapter opened with a statement on grounded theory. The theoretical statement that followed justified the use of grounded theory by presenting a position that demonstrates a degree of asynchrony with existing theories but resonate of my findings.

Through my statement, I propose that there is the need for a fresh approach to automobility's endurance, based on practice theory and allowing for accounts of the ways individuals perform and experience practices. There is an orchestrating role for the individual agent in practice theory. By implication, I have assumed a structurationist approach, referencing fluidity in the place of structure and agent in shaping mobility. The statement also incorporated a desire to focus on what is interconnected and ordinary – the dailiness of routine.

Chapters Five and Six go on to detail how the methods typical of a grounded theory study were used to shape this theoretical statement. One of the appealing features of grounded theory is that it engages purposive sampling. The sampling technique for my study is unique and it played an important role in shaping the way I progressed with data collection. Chapter Five is dedicated to describing this technique in detail.

Chapter Five: “but if it takes the same amount of time...”?

Why this city, this journey, these people?

Introduction

The previous chapter outlined my theoretical statement. This statement is based on a structurationist approach to mobility, maintaining an eye on the routinisation of social practice yet with an emphasis on the role of the individual. I described the way this study views the everyday practice of driving to work as a complex construction of interconnected and interdependent elements which in part reproduce car use as resistance to alternative transport. I also proposed that some attempt needs to be made at ‘ordering’ practices and that the role of the individual in shaping practice can therefore not be entirely disregarded. This theoretical approach was developed through an application of grounded theory. The current chapter begins to describe the methods used to execute my study.

Qualitative Methods

I have prescribed to methods typical of a grounded theory study. In summary, these methods have included purposive and theoretical sampling, the commencement of data analysis during data collection, the constant comparison of data with emergent theoretical categories and a focus on the development of theory via theoretical saturation (Charmaz 2011).

My methods are qualitative. I have been drawn to qualitative methods because I propose that the “panoramic” shots (Creswell 2007, 17) of barriers to alternative transport provided by a quantitative approach are insufficient to describe the ways that these barriers are formed and maintained. The predictive capacity engendered in quantitative transport modelling fails to adequately capture the motives of a public that continues to avoid alternative transport use. Qualitative methods can provide a more contextual and detailed description of this behaviour than can be modelled quantitatively from afar. Such methods allow for situated research and are able to avoid dichotomies such as cause and effect (Creswell 2007). Related to this, and as was outlined in the previous chapter, I propose that extant cultural approaches to mobility practices have made only incremental attempts to explore the extent to which barriers to alternative transport are intertwined with ways of ‘being’ in the world. A more inclusive empirical approach is required and qualitative methods can allow such an approach to develop.

Qualitative research methods are particularly suited to explorations of subjectivity and context (Denzin and Lincoln 2007). As a grounded theory study interested in the subjective experiences and sensibilities woven through car use, qualitative methods are appropriate for this research. These methods are described throughout the following two chapters. While debate continues as to the nature of rigour and validity in qualitative research (see for example Cho and Trent 2006; Koro-Ljungberg 2008), the “gold standard” of qualitative rigour is still accepted as Lincoln and Guba’s (1985; 1989) fourth generation evaluation (Liamputtong 2009, 21; see also Creswell 2007 and

Padgett 2008). These criteria include credibility, transferability, dependability and confirmability (Carpenter and Suto 2008, 149). Reference to the different techniques used to ensure rigour are intertwined with the various method descriptions in Chapters Five and Six. Applying Lincoln and Guba's criteria, these techniques can be summarised as follows:

- I have applied a meticulous approach to purposive sampling to ensure *credibility* (see pages 108-122 relating to the process of trip substitution analysis).
- I include detailed descriptions of the theoretical knowledge obtained through the study to support theoretical *transferability* of the study's findings (also articulated through Chapters Four and Nine).
- I am explicit in my method of participant selection, data collection and analysis. The way I have reported decisions made at each stage of data collection and analysis is comprehensive to ensure *auditability and dependability* (see pages 137-153 relating to data analysis).
- Multiple engagements with participants and their journeys to work (see pages 126-135), data and source triangulation (see pages 135-136), the extensive use of verbatim quotations (Chapters Seven and Eight) and acknowledgement of any personal or intellectual bias that might influence the research process have all been implemented in the pursuit of *confirmability* (Tobin and Begley 2004; Minichiello et al. 2008).

The primary method used for data collection was a series of semi-structured in-depth interviews. I wanted to focus on the "multiple realities" constructed by people being auto-mobile (Carpenter and Suto 2008, 149). As such, I placed particular emphasis on participant selection. Purposive sampling was employed to enhance the development of an authentic and novel way of thinking about barriers to alternative transport and enable identification of information rich cases for study (Patton 2001; Padgett 2008). As a qualitative study, this is not a probability sampling such that statistical inferences can be made (Miles and Huberman 1984). It is, instead, a sampling that best allows me to study, in-depth, a particular aspect of transport behaviour. To enable transferability,

I selected cases of some typicality. However I have actively sought those that give me some “*opportunity to learn*” (Stake 2000, 451, emphasis in original). The transferability of this study instead lay in the potential to apply its theoretical findings to other contexts (Sandelowski 2004).

The remainder of this chapter is dedicated to an explanation of how, specifically, participants were selected. I start by painting a broad picture of my approach to participant selection and progress to describe each component of the approach in more detail.

Purposive Sampling

Participant Selection: overview

Participants were selected based on three criteria:

1. *The city*: the participant needed to live and work in a low-density city displaying a diffuse geography of employment and a transport system not currently characterised by alternative transport. The rationale behind the study’s focus on such a city is detailed below. By outlining a brief history of Sydney’s development, complemented by current statistics on transport and other variables, the specific choice of Sydney as a case study city, is also introduced and justified.
2. *The trip type*: the participant needed to work full-time and commute to work using a private car. The basis for a focus on the routine commute performed with a degree of regularity as a case study trip type is also explained below.
3. *The journey*: participant selection was ultimately dependent on the participant having the option to travel to work by alternative transport in roughly the same amount of time as it currently takes him or her to drive. Again, the logic behind this prerequisite for selection, and the complex method used to locate participants fitting this criterion, is outlined below.

Sampling the City

The focus of this study is Sydney, Australia. My observations and findings, however, are likely to apply to Australia's other capital cities and indeed to many other cities around the world characterised by low residential densities, a dispersed geography of employment and a transport system dominated by private car use.

Suburban Sydney has been selected specifically for sampling primarily because it represents an area where transition to alternative transport is likely to be extremely difficult to encourage through structural provision alone. Transition will require a degree of cultural 'will' and exploration of this will is considered timely given both political and social expectations for increased alternative transport use. The use of Sydney as a case study is now further justified following a brief description of the city's contemporary land use and transport context.

Introducing suburban Sydney

Sydney has a population of 4.6 million (BTS 2012a). It is Australia's largest city and an aspiring global city situated within a coastal strip exceeding a total population of 5 million people. Sydney's population is increasing, both naturally and through 'in migration' (Randolph and Freestone 2012). The city has a pivotal role at the nexus of the Australian economy and the rest of the world – evidenced by its being the preferred location for corporate headquarters, banks and the regional head offices of transnational companies (Pfister et al. 2000; McNeill et al. 2005; McGuirk and Argent 2011; Beer 2012). By global standards, Sydney is a low-density city (Newman and Kenworthy 2006). Furthermore, until recently, this low-density urban form has been relatively uniform (Bertaud and Malpezzi 2003; Randolph and Tice 2013). Of relevance to this study is that detached dwellings dominate the residential landscape (Randolph and Freestone 2012), employment opportunities are dispersed (Pfister et al. 2000; Searle and Pritchard 2005; Parolin 2006) and private-vehicle use characterises the transport mode for all journeys, including the journey to work (Xu and Milthorpe 2010; Mees and Groenhart 2012).

Throughout the 1980s and early twenty-first century, economic, political, social and cultural factors have converged such that the hegemony of the detached dwelling and the suburban job has been challenged (Freestone 2012). During this time, urban containment through consolidation and the pursuit of a balance between the location of jobs relative to housing through a polycentric employment structure have been the desired metropolitan planning outcomes (Black et al. 2007; Gleeson et al. 2012). Often these outcomes have been justified by the need to balance public and private transport modes and curb car dependency. Such structures have been pursued through a raft of metropolitan plans, spanning from the 1988 plan “Sydney Into Its Third Century” (Department of Environment and Planning NSW 1988) to the most recent metropolitan strategy for Sydney “Metropolitan Strategy 2036” (Department of Planning and Infrastructure NSW 2010) (see also “Cities for the 21st Century” (Department of Planning NSW 1995), “Shaping Our Cities” (Department of Urban Affairs and Planning NSW 1998), and “City of Cities Metropolitan Strategy” (Department of Planning NSW 2005)).

A chequered commitment to both consolidation and transport infrastructure, however, has meant that low-density residential urban form, a dispersed geography of employment and subsequent car reliance continue to dominate Sydney’s urban geography (Black et al. 2007; Glazebrook 2009). Although pockets of higher-density residential infill development are increasingly scattered throughout middle ring ‘greyfield’ suburbs and the already compact inner city, low-density residential urban form remains a popular option, particularly in outer suburban areas (Dodson and Sipe 2008; Randolph and Freestone 2012). With regards to the location of employment lands, the inner core of the city has actually strengthened as an employment hub, yet there is evidence that other employment, particularly in high-end industries, is clustering in distinct chains of locations, if not strictly centres, throughout the metropolitan region (Transport Data Centre 2009). Research on Sydney’s employment geography, however, continues to suggest employment opportunities across the city remain relatively dispersed rather than clustered (Pfister et al. 2000; Randolph 2004; Forster 2006, see also Figure 5.2 below).

This low residential density and random dispersal of job opportunities essentially makes planning for the use of alternative transport for the journey to work in Sydney a very difficult task (Glazebrook 2009; McGuirk and Argent 2011). As discussed in Chapter Two, polycentricity does not necessarily lead to shorter commute distances or increased uptake of alternative transport for the journey to work. Failed and uncoordinated attempts at the co-location of jobs and housing (as has been the experience in Sydney) are even less likely to spawn transition away from car-dominated commutes (Jain and Courvisanos 2009). As a result, the private car remains the dominant form of transport.

Car travel in Sydney, changes over time

Primarily using data from the HTS, the following section focuses specifically on trends over time in car-based transport in Sydney.

In Sydney, as in many other major cities around the world, travel by car as driver or passenger dominates mode-share for all trip purposes (Newman and Kenworthy 2011). Despite this, data generally reflect the concept of saturation described in the introduction to this thesis to suggest that VKT per person is unlikely to continue exponential growth into the future (Millard-Ball and Schipper 2011; Goodwin 2012). As illustrated in Chapter One (see page 14), saturation in Sydney has been reached (Australian BITRE 2012).

Between 1999 and 2011 the population in the Sydney Metropolitan Area increased by 1.2 per cent (BTS 2012a). While total VKT increased by 0.9 per cent over this period, this increase is a result of increased population rather than increased average VKT per person. Indeed, average daily VKT per person has stabilised and even shows small signs of decrease over this period, falling from 18.2 to 17.7 kilometres. The mode-share of trips undertaken by private vehicle has decreased from 69.8 per cent to 68.1 per cent and use of the car for the commute has also decreased from 63.4 per cent to 62.8 per cent of total mode-share. Average trip distance by car for the commute has decreased

marginally from 13.9 to 13.8 kilometres. Despite these decreases in distance, average time spent in the car per trip has increased from 19 to 20 minutes.

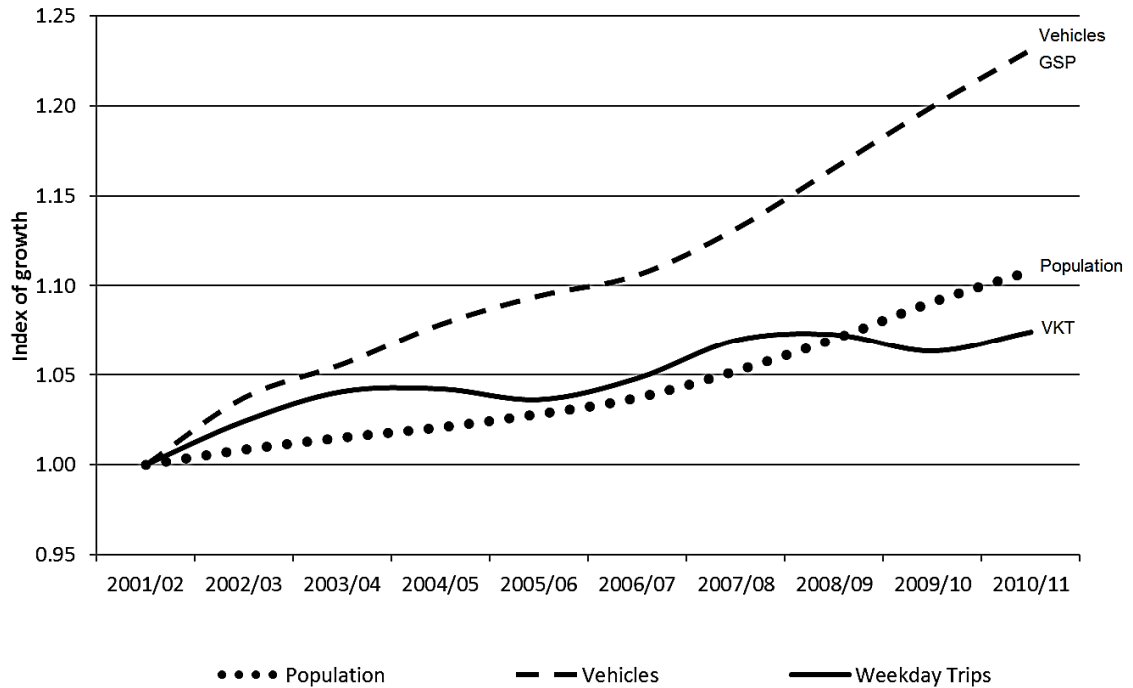


Figure 5.1: Index of growth in vehicles and VKT relative to population 2001-2011 in Sydney, Australia
NSW BTS 2012a, 17

This data is represented in Figure 5.1 above. Increases in VKT are not necessarily linear, representing fluctuations in, for example, personal income and employment. As discussed in the introduction to this thesis, income is consistently positively correlated to VKT in transport research (Australian BITRE 2012). The relatively recent decreases in VKT per person and the car’s mode-share for the commute discussed above could possibly be attributed to the impact of the global financial crises (Schipper 2011). Of note here, however, is the steady increase in the number of private vehicles – between 1999 and 2011 the number of private vehicles increased by 2.3 per cent, with vehicles per household increasing by 0.9 per cent.

Any optimism promised by the marginal decreases in VKT per person and mode-share is further dissipated when data is disaggregated into inner urban and outer suburban local government areas. Sydney has been introduced as a low-density city where detached dwellings dominate the residential landscape, employment opportunities are dispersed and private vehicle use characterises transport mode. Although economically structured as a (relatively confused) polycentric city (Beer 2012), the geography of Sydney's density does follow a very general pattern characteristic of monocentric urban form whereby the residential density gradient displays a negative slope from the centre to the periphery (Bertaud and Malpezzi 2003). Accompanying this gradient are a number of other distinct differences in transport behaviour displayed in inner urban when compared with suburban areas.

To demonstrate these differences, I have divided HTS data for local government areas⁶ in the Sydney Metropolitan Area into "inner", "outer". An inner local government area was designated a local government area with the majority of its population (as at the 2006 Australian Bureau of Statistics Census of Population and Housing (Australian Bureau of Statistics 2006)) located within a ten kilometre radius of the city's central railway station in the Sydney central business district. An outer local government area was a local government area with the majority of its population as at the 2006 Census located outside of a ten kilometre radius of the central railway station, but within the Sydney Metropolitan Area. This way of dividing local government areas is simplistic, however it follows a study undertaken by New and Rissel (2008) in their analysis of cycling data, as well as a study of the links between density and transport in Sydney undertaken by Brooker and Gee (2009). The division facilitates clear demonstration of the point that the plateau in car use across Sydney is by no means a geographically consistent phenomenon.

When this disaggregation is applied to data from the 2010/11 HTS average weekday VKT per person for inner Sydney local government areas is 11.3 kilometres compared with 20.3 kilometres for outer Sydney local government areas. The car is used for 56

⁶ The 2008 and 2011 editions of the HTS use local government area boundaries based on the 2006 edition of the Australian Standard Geographical Classification.

per cent of trips in inner urban local government areas while in outer suburban local government areas it is used for 74 per cent. The average commute distance for inner urban local government areas is 8.5 kilometres, compared to 16.2 kilometres for suburban commuters. Inner urban households have, on average, 1.3 vehicles, while suburban households have 1.7. These variables are listed in Table 5.1 below. All have remained relatively stable over time when compared with HTS data from 2007/08 with the exception that the gap between VKT per person has increased from 19.5 kilometres in 2007/08 to 20.3 kilometres in 2010/11 (BTS 2010 and BTS 2012a).

Table 5.1: Comparison of select transport variables for ‘inner’ and ‘outer’ local government areas in 2010-2011 in Sydney, Australia

	Inner local government areas	Outer local government areas
Weekday VKT per person	11.3	20.3
Car mode-share (trip)	56%	74%
Commute distance	8.5km	16.2km
Vehicles per household	1.3	1.7

(Data sourced from BTS 2012a)

This gap between ‘inner’ and ‘outer’ travel behaviour has been supported by other research, including New and Rissel’s (2008) analysis of cycling mode-share from journey to work data in the 2001 and 2006 Census. They analysed the trend over time for cycling for the journey to work to identify a 12 per cent increase in riding to work for residents of inner urban local government areas between 2001 and 2006. A reverse trend was indicated over the same period in suburban local government areas with a 6 per cent decrease in residents cycling to work. This data also confirms the findings of Brooker and Gee’s analysis of journey to work data from the 2006 Census (Brooker and Gee 2009). These authors were able to demonstrate a clear positive relationship between distance of place of residence from the Sydney central business district and propensity to commute by car. Dodson and Sipe’s (2008) analysis in the context of oil

vulnerability suggests similar findings, concluding that “spatial differences in car dependence are widening over time in Sydney as car use increases in the outer suburbs and declines in areas nearer the central business district” (Dodson and Sipe 2008, 384).

This geography of difference in the way cars are used in Sydney is likely to be the product of a complex set of historically constructed and consistently preserved and culturally interpreted socio-political structures. In brief, inner urban residents have better access to alternative transport infrastructure, supported in part by higher residential density but also linked to the historical development of the city as one based on an originally adequate fixed rail network. This in turn is related to the fact that Sydney matured as a city during a time of innovation in motorised transport which was able to be applied to the city’s pursuit of commercial rather than industrial activity. While much of Sydney’s public transport infrastructure has long been established, the recentralisation of residential and some employment uses to the central business district, pursued through local planning since the late 1980s and augmented through processes of globalisation (Black et al. 2007), has taken advantage of existing fixed rail lines and bus routes to demonstrate an aggregate decrease in the growth of car use for the journey to work. A number of industry specific precincts and other centres that are well serviced by public transport have also developed in relatively close proximity to the central business district. Inner urban residents are also less likely to travel long distances to work, making it more feasible to travel to work by active modes, including walking and cycling. Furthermore, central business district based employment opportunities are unlikely to come with parking provided which acts as another major disincentive to drive. Finally, this distinct geography is also potentially related to cultural differences, including those impacting the propensity to accept alternative transport modes, particularly cycling. These differences are likely linked to various socio-economic and demographic variables such as level of education, income, age and household structure.

While the historical development of the differences in the way cars are used across cities such as Sydney is extremely interesting, a vast literature describes this

development and as such a more detailed recount is not considered necessary here (see, for example, Fagan and Dowling 2005; Bill et al. 2006; Forster 2006; Parolin 2006; Black et al. 2007; Brooker and Moore 2008; Dodson and Sipe 2008). The aim of this study is to explore resistance to alternative transport as it is currently exhibited. I therefore leave the structures of its development at this point to discuss the relevance of Sydney's urban and transport context to the selection of Sydney's suburbs as a case study.

Why suburban Sydney?

Suburban Sydney has been selected as a case study primarily because its population appears deeply entrenched in automobility. Although there is no longer the trend of exponential growth in car use witnessed during the 1960s and 70s, the car continues to play a key role in the lives of most Sydney residents. Despite efforts to date, it will be difficult structurally to retrofit Sydney's dispersed urban fabric to be more amenable to alternative transport use (Glazebrook 2009). It is unrealistic to suggest that uses, such as residential and commercial, can be brought geographically closer together such that active transport becomes more feasible. A mass upgrade of Sydney's relatively fixed public transport infrastructure is unlikely to the degree required for provision of reliable public transport services to the outer reaches of the city (McGuirk and Argent 2011). With this less than perfect structural, including built, environment, a shift away from the private car in suburban Sydney will be difficult and as such will necessitate a degree of cultural 'will'. Explorations of the way private car use is practised and perceived in these places is therefore helpful to inform appraisal of the strength of this 'will'.

Suburban Sydney does not represent a 'near market' for transition to increased uptake of alternative transport. Use of the 'near market' concept – or those likely to be open and easily able to change – is a strategic approach employed by various domains of health promotion (Prochaska and Velicer 1997). It has also been used in research on barriers to the uptake of active transport (Gatersleben and Appleton 2007; Winters et

al. 2010; Caulfield 2011). The idea is that transition should focus on the 'low hanging fruit' – or easy wins - in an effort to create a critical mass of alternative transport users who in turn encourage transition from those less open to change.

Concurrent to emergence of a distinct 'inner-outer' geography of difference in alternative transport use in Sydney has been increased academic and political interest in the uptake of alternative transport modes in inner urban areas (Jain and Courvisanos 2009). Residents of inner urban areas that have experienced processes of gentrification and revitalisation are relatively inundated with alternative transport options (Danyluk and Ley 2007). Inner urban Sydney thus represents the 'near market' for transport behaviour change. Transition is encouraged by new active transport infrastructure, opportunities to participate in car sharing schemes, a culture of acceptance and the higher densities and mixed-uses required to breathe life into a less auto-mobile transport system. Research on the uptake of alternative transport, however, seems to overlook what I propose to be the 'far' market for the uptake of alternative transport – those far from infrastructure, far from cultural support, far from where they work relative to where they live and, potentially, far from transitioning to alternative transport for the journey to work. I have chosen to focus on this 'far' market, firstly to direct attention away from potentialities for transition as seen from the perspective of those for whom transition at this stage seems almost inevitable. Instead, I wish to explore barriers to alternative transport from the perspective of the majority who appear deeply entrenched in automobility.

Suburban Sydney is also of interest because it is an area that has been the ongoing subject of political and societal ultimatums over alternative transport (Mee 2002). The population of Sydney is projected to increase by 56 per cent in the coming decades (Department of Planning NSW 2010; McGuirk and Argent 2011). To accommodate this growth, the most recent state government transport plan reiterates previous plans for provision of a suburban rail link for two of greater Sydney's major growth centres. New bus services and enhanced bus priority lanes on constrained transport corridors are also proposed to curb the inevitable increase in congestion (Department of Transport NSW 2012). It is therefore timely to question what might be the barriers to the use of

this infrastructure when, and if, it finally arrives. I propose that it will not be a case of simply providing alternative transport infrastructure and that both those demanding and those supplying this infrastructure may have underestimated the gravity of the shift required for transition to its uptake.

Having described the transport context of suburban Sydney and justified its selection for this study, I now turn to discuss selection of the journey to work as a case study trip type.

Sampling the Journey – why the journey to work?

The journey to work accounts for just one aspect of urban travel. It has been selected as an appropriate trip for analysis of barriers to alternative transport primarily because it represents the key component of peak period travel demand and as a result is often relied upon by transport decision makers to inform policy (Redmond and Mokhtarian 2001; Mees et al. 2008; Xu and Milthorpe 2010).

Mode choice for the journey to work in Sydney is overwhelmingly characterised by the single occupant private car. In 2011, public transport accounted for 20 per cent of journey to work trips, while trips by private car accounted for approximately 58.4 per cent of mode-share (Australian Bureau of Statistics 2011). These journeys are increasing in duration and length with increases generally following the inner/outer suburban divide described above (Xu and Milthorpe 2010). Overcoming barriers to the uptake of alternative transport for these seemingly popular and increasingly lengthy trips logically has significant potential to address the various problems associated with automobility outlined at the beginning of this thesis.

The journey to work is also of interest because there are tangible links between journey to work mode and car ownership (Plaut 2005; Dargay and Hanly 2007). Households comprised of at least one person who drives to work are more likely to own more than one car (Cervero and Kockelman 1997; Krizek 2003; Nolan 2010; Caulfield 2011). In Australia in 2006, the use of public transport for the commute for

those living in households with two or more cars was less than half that of those living in households with just one registered car (Australian Bureau of Statistics 2006). Furthermore, a car that is used for the journey to work is more likely to be used for other purposes outside of this trip type (van Acker and Witlox 2009). Essentially the research demonstrates that households will inevitably structure activities around consumption of the latent utility of a parked car. Instead of 'making do' with one car, the car that during the week is used for the commute finds plenty of use on the weekends, giving its owners little requirement or opportunity to experience and potentially master alternative transport modes (Bagley and Mokhtarian 2002; Schwanen and Dijst 2002; Krizek 2003). If a household's second car is not required for the daily commute, there is a greater likelihood that it will be relinquished sometime in the future.

The journey to work is also considered an interesting case study because it is a regular, habitual trip. In many ways, this regularity makes it an easy target for change and this feature is often articulated in research as a justification for a commute focus (see for example Wen et al. 2010). A habitual behaviour, however, invokes more complexity than trips that are not routinely performed because routines can have intrinsic value to the individual (Goffman 1959; Giddens 1991). Habit implies attachment to routine and the security and comfort associated with this attachment is potentially just as much a barrier to transition away from automobility as securities associated with more instrumental barriers such as flexibility (Kerr et al. 2010; Chen and Chao 2011). Transitioning away from the comfort associated with a habitual journey such as the commute can therefore present additional challenges in that it implies upheaval to what is potentially an extremely comforting routine (Fujii and Garling 2003). Transition away from routine can, however, also have monumental benefits (Middleton 2011; Schwanen et al. 2012). Leaving behind a habitual behaviour disturbs something tacit and normally unquestioned, encouraging the commuter to acknowledge and potentially challenge the taken-for-granted use of the car for other journeys. Transition for the journey to work involves not only adopting a new way of being mobile but developing the skills and awareness required to leave behind something

that has likely become a taken-for-granted performance that is part of life. This awareness may then be applied to other trip types, where the new skills developed for the commute can be applied to further question the hegemony of the car. The added challenge (and potential benefit) associated with the uptake of alternative transport for a routine journey such as the journey to work makes it a very interesting case study.

Finally, the journey to work has been selected as a case study because of the identities that are wrapped up in its practice. Chapters Eight and Nine will explore in-depth the way work is associated with giving life a degree of coherency. For many people, work brings meaning to life (Linde 1993). It supports not only identities embedded in working (such as 'reliable employee' or 'team manager') but it also feeds identities associated with earning a regular income (such as 'parent' or 'home owner') (Bauman 2001; Basmajian 2010). The strength of attachment between what it means to live in modern society and what it is to be gainfully employed provide the journey to work with significance perhaps not ascribed to other uses for the automobile. This degree of attachment inevitably comes with its own set of challenges. The routine of the journey to work, however, provides a platform from which to analyse the extent to which automobility and what it is to live in the modern world are entirely embedded.

Attention now turns to the final criterion for participant selection: the journey. Participant selection was ultimately dependent on the participant having the option to travel to work by alternative transport in roughly the same amount of time as it currently takes them to drive. The logic behind this prerequisite for selection, and the complex method used to locate participants fitting this criterion, is now detailed.

Sampling the People – why these participants? Trip Substitution Analysis

Presupposing rational/instrumental barriers

The car's unrivalled speed, ability to cover distance and, by implication, time saving capacity is often identified as a barrier to alternative transport use (see for example Sharples 2009; Ewing and Cervero 2010; Ellison and Greaves 2011). In utilitarian and time-space perspectives, automobility prevails when the car is the fastest way to travel from A to B (Newman and Kenworthy 1999; Steg et al. 2001; Commins and Nolan 2011).

My original key area of enquiry was to explore the factors that prevent people from using alternative transport. Assuming a very rational perspective, I speculated that distance and time would be the main barriers. For many people, alternative transport would simply take too long when compared to the time it takes to cover the same distance by car.

Journey to work data for Sydney suggests that most people live too far from where they work to be able to feasibly access their workplace by a single active transport mode (Xu and Milthorpe 2010). In Sydney, this is related to the distance between place of residence, place of work and the central business district, with data indicating that residents and employees of Sydney's suburbs live too far from where they work for commuting by bike or by walking to be a feasible option. 'Too far' in this case is considered to be a distance of more than five kilometres. This very general estimate is based on research indicating that five kilometres represents the maximum distance most people will cycle for the journey to work. The figure is obviously extremely variable given contextual considerations such as topography, climate, provision of infrastructure for cycling and cultural acceptance of cycling (Keijer and Rietveld 2000; Rietveld 2000; Martens 2004; Krizek et al. 2009b; Pucher et al. 2010). This variability is discussed further below.

Complementing data on the way distance forms a barrier to active transport is an array of anecdotal evidence suggesting time as a barrier to public transport use. Sydney's print media is regularly peppered with horror stories of lengthy and complex public transport journeys⁷. For many people, using public transport to get to work is simply not a feasible option relative to the time it takes to cover the same distance by car. Any analysis of barriers to the uptake of alternative transport would therefore quickly encounter the obvious: people choose to drive simply because it is the quickest way to cover the distance between where they live and where they work.

What if, however, people could travel to work using alternative modes in the same amount of time as it takes them to drive? What then would be the barriers to alternative transport for people working in Sydney's outer suburban areas?

Chapters Two and Three explored the way mobility research has started to surpass reliance on rational and utilitarian motives alone in formulating explanations for transport behaviour. Time and distance as rational motives are very obvious and therefore potentially distracting barriers to alternative transport for people attempting to reflect upon and explain why they travel the way they do (Steg et al. 2001; Steg 2005). The results of qualitative research seeking to explore alternative transport can therefore benefit from anticipating self-evident utilitarian influences. Such anticipation will facilitate smoother access to more tacit, symbolic and affective explanations. In recognition of this, I used a complex process of participant selection to remove time as a rational barrier to alternative transport. I did this by selecting participants who could travel to work using alternative transport modes in the same amount of time as it currently takes them to drive.

⁷ For example media articles see Gale (2010), Saulwick (2011 and 2012) and Tattersall (2012). There are also a number of active web-based forums and Facebook groups that act as sounding boards for commuters travelling along similar routes. For examples see "Bus Commuting from The Hills District" at <http://www.skyaus.com/forums/thread-33608-1-1.html>, the Mount Druitt Commuters Group on Facebook and the "The 433 is the worst bus route in Sydney" group on Facebook.

Organisation selection

Finding participants who fit this very particular selection criterion required a detailed and relatively manual analysis of a cohort of journeys to work. Three commercial organisations were approached to recruit subjects for this analysis, based on the following criteria:

1. The headquarters of the organisation are located within a walkable 800 metres of a train station or major bus interchange. Trip substitution of a car journey for an alternative transport trip would not be feasible if the destination were not located within walking distance of public transport.
2. The headquarters of the organisation are located more than ten kilometres from the Sydney central business district. This aligns with this study's focus on journeys to work of employees living and working in suburban Sydney as discussed at the beginning to this chapter. At this point it was impossible to tell whether those working in suburban areas would also be living in suburban areas however analysis of journey to work data from the 2006 Census suggests this is a reasonable assumption (Xu and Milthorpe 2010).
3. The headquarters of the organisation employs more than 100 people working full-time (that is, more than 35 hours per week) between 7.00am and 7.00pm weekdays. Employees needed to be full-time to ensure that the trip substitution analysis was performed on a regular journey. The timeframe was specified to ensure that employees worked during standard working hours and to avoid the complexity of analysis required for shift work. At least 100 employees working at each organisation were required based on an estimate of a 50 per cent response rate where it was assumed that approximately ten per cent of these respondents' journeys would meet the criteria for participation in interviews. Although I had planned to determine the study's sample size using the concept of data saturation, I followed the recommendations of Morse (1994) and Creswell (2007) to estimate that as a grounded theory study I would

need to undertake approximately 15 interviews. In an effort to reduce the impact of the interview process on participants, and also to prolong my engagement in the data collection process, I planned to interview each participant twice (see page 133 for further justification of the interview staging).

The three organisations selected were based in Macquarie Park, Parramatta and Norwest. Figure 5.2 demonstrates each organisation's location relative to the Sydney greater metropolitan region (appearing on this map as white space) and the Sydney central business district (located in the centre east of the city). Figure 5.2 also demonstrates Sydney's 'confused polycentricity' discussed earlier in this chapter (see pages 97-100).

While the locations of each organisation display degrees of heterogeneity, they do all share some similar infrastructural characteristics. Parramatta is a larger and more established centre, however all three are designated as specialist employment centres by the State Government's main metropolitan planning document for Sydney (Department of Planning NSW 2010). Macquarie Park and Parramatta are serviced by both bus and rail public transport infrastructure. Norwest is serviced by the North West 'T-Way' (rapid bus transit) line. Of key importance, however, is that all organisations are located more than 10 kilometres from the Sydney central business district in an area serviced by alternative transport. Also of key importance is that all have at least 100 employees working full-time between the hours of 7.00am and 7.00pm weekdays. Table 5.2 provides other details on each organisation. It is important to note that these organisations were selected purely to provide a source of participants for in-depth interview, and not to make statistical inferences that can be generalised in a quantitative sense.

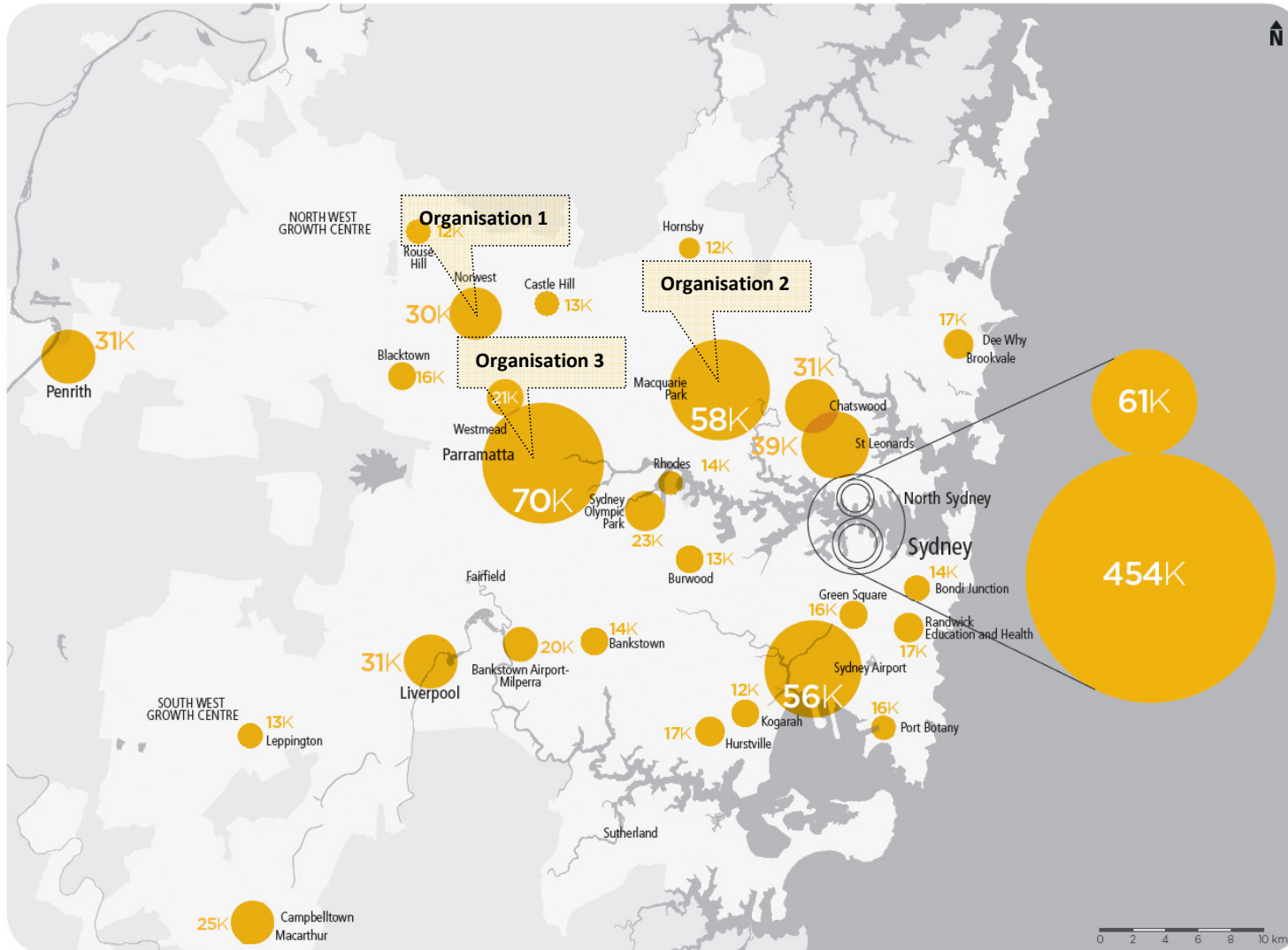


Figure 5.2: Map of Sydney showing major employment centres projected to 2031 and approximate location of selected organisations

(Adapted from Sydney's Rail Future, Department of Transport NSW 2012, not to scale)

Table 5.2: Relevant organisation details

Organisation	Location	Distance from Sydney central business district (by road)	Industry
One	Norwest	37 kilometres	Retail grocery
Two	Macquarie Park	15 kilometres	Information technology
Three	Parramatta	24 kilometres	Residential development

Web-based questionnaire

In May 2011, employees of the three selected organisations were invited to fill out a web-based questionnaire⁸. Organisations one and two agreed to invite all employees working at their headquarters, while organisation three chose to only include one of their departments. The method of disseminating the invitation differed for each organisation, with organisations two and three electing to e-mail employees directly and organisation one electing to publish the invitation in its weekly staff newsletter.

The invitation to participate contained a basic description of the study which explained that its general aim was to better understand the way people travel to work in areas outside of the Sydney central business district. The description of the study did not specifically mention active or public transport or prejudice any particular means of transport to work. This was considered important to prevent respondents preconceiving ideas on the nature of the study.

⁸ The intent, wording and distribution of the questionnaire was approved by the University of New South Wales as compliant with the requirements for ethical research set by the Australian National Health and Medical Research Council in the National Statement on Ethical Conduct in Human Research (project reference number 115041, issued 18 April, 2011).

Respondents were offered the chance to win one of three AU\$100 Wish gift vouchers. Wish gift vouchers can be spent at a variety of retail outlets, including supermarkets, hardware stores and department stores. Again, the incentive offered was purposefully chosen to appeal to the general population to prevent respondent preconceptions of the nature of the study.

The questionnaire was written to be accessed online using Key Survey software. The survey consisted of three parts and could be completed in less than ten minutes. It was piloted on a cohort of 20 colleagues and friends, with minor amendments subsequently incorporated.

A version of the questionnaire as well as visual representations of aggregate responses to each question can be found in Appendix One. In short, the questionnaire was designed to illicit the following information about the respondent's journey to work:

1. Trip mode
2. Consistency of trip mode
3. Trip duration
4. Trip time of departure
5. Trip chaining behaviour
6. Trip origin

This information was considered to be the minimum required to undertake a trip substitution analysis.

Similar to the invitation to participate and the incentive offered, the nature of questioning and language employed in the questionnaire was purposefully casual and nonspecific. For example the terms 'journey to work' and 'commute' were avoided and instead replaced with 'your trip to work'. Instead of asking participants to fill out detailed trip data for each day of the week, respondents were simply asked to nominate the way they get to work 'on most days'. The rationale was to maintain a balance between gaining enough detail to enable a relatively accurate trip substitution analysis whilst retaining a casual tone to elicit respondents' immediate perceived response to the questions. The questionnaire aimed to discourage any type of

analytical reflection on, for example, the time it 'should' take them to get to work, or the time they 'should' leave to get to work. This focus on the respondents' perceptions of their journey, rather than any notion of their 'actual' journey aligns with the study's aim to take into account the nuances of what is 'un-practised' as much as what is practised. The journey to work and not the journey from work was selected for analysis to ensure the questionnaire remained brief.

The questionnaire was available on a website hosted by the University of New South Wales for a period of two weeks. Resultant data were then exported for analysis in Microsoft Excel. A total of 856 questionnaires were completed, representing a response rate of 26 per cent. An analysis of response rate by organisation is provided in Table 5.3.

Table 5.3: Questionnaire response rate

Organisation	Number of employees invited to participate	Number of responses	Response rate
One	3021	736	24%
Two	120	50	42%
Three	187	70	37%
Total	3328	856	26%

More females (55 per cent $n = 472$) responded to the survey than males (45 per cent $n = 384$). The majority of respondents (54 per cent) were aged between 34 and 55, with the second largest age cohort (38 per cent) aged between 18 and 34. The remaining 8 per cent were aged between 55 and 64 years. None of the respondents were aged 65 years or over. As mentioned above, visual representations of aggregate responses to each question can be found in Appendix One.

Sample selection and data cleaning

Variations in the size of each organisation had resulted in very different sample sizes. The number of questionnaires answered by organisation one was more than seven times the number completed by organisations two and three. I had previously estimated that ten per cent of participant journeys would meet the criteria to be selected for interview and that I would need to interview at least five participants from each organisation. I therefore only needed to perform the trip substitution analysis on 50 respondent trips from each organisation (150 trips in total). Considering each trip substitution analysis took up to three hours to complete, it was deemed reasonable to dilute the dominance of organisation one's sample by selecting a representative cohort of 80 respondents. The selection process was random, with a number from one to ten allocated to each respondent and all those allocated a number five then chosen for analysis. The representativeness of this selected cohort was then checked against the variables of trip time, mode, gender and age group for the original sample from organisation one. It was found to be appropriately representative for analysis. This sample of 80 responses was then combined with the 120 responses from organisations two and three, resulting in a total sample of 200 trips for analysis.

A final step prior to commencing analysis was to remove:

1. Incomplete responses.
2. Responses indicating that the potential participant worked two or less days per week at the destination.
3. Responses indicating that the potential participant regularly stopped on route to perform other activities.
4. Responses indicating that the potential participant already travelled to work by alternative transport modes.
5. Responses indicating that the potential participant did not wish to be contacted to partake in further research.

The scale of feasibility

The process of trip substitution analysis was then applied to the remaining 119 journeys. The aim of the trip substitution analysis was to locate each respondent's trip on a scale of feasibility for substitution (see Table 5.4). This was a measure of whether the respondent could substitute his or her existing car journey with an alternative mode. As outlined above, for the purposes of this stage of the research, feasibility has a rational-instrumental interpretation based on the burden of time sacrificed in order to use an alternative mode. The substitute trip was developed using the method outlined below. The estimated time taken for the alternative mode was then compared with the time taken for the existing car trip as indicated by the respondent in the questionnaire.

Table 5.4: Trip substitution analysis scale of feasibility

Feasibility score	Description
1	Substitution would take either less time than current mode or just 4 minutes more
2	Substitution would take 5-15 minutes more than current mode
3	Substitution would take 16-30 minutes more than current mode
4	Substitution would take 31-45 minutes more than current mode
5	Substitution would take >45 minutes more than current mode

If the respondent's substituted trip added less than five minutes' time burden, the respondent was allocated a feasibility score of one. If the respondent's substituted trip added between five and 15 minutes' time burden, the respondent was allocated a feasibility score of two. If the respondent's substituted trip added between 16 and 30 minutes' time burden, the respondent was allocated a feasibility score of three. If the respondent's substituted trip added between 31 and 45 minutes' time burden, the respondent was allocated a feasibility score of four. If the respondent's substituted trip added more than 45 minutes' time burden to his or her existing trip time, the respondent was allocated a feasibility score of five.

I acknowledge that the time defined for each participant's driving journey is subjective. The participant was not asked to break down the trip, for example, by driving time, time it takes to find a car park, time it takes to get to the office and so on. This was intentional as it was hoped to capture the participant's automatic reaction. I was very interested in the time they might narrate to themselves and others as an answer to the question 'how long does it take you to get to work?'. It was hoped this would be an indication of the participant's perception of how long it takes him or her to get to work, so that when the trip substitution was described I could speak in the same terms as the participant. There would be no point saying to a participant 'it would take you 63 minutes to catch the train to work and that is the same time it currently takes you to drive when you factor in car parking' if that participant has a very firm idea in his or her head that the journey takes between 45 and 55 minutes each day.

Developing the substitute trip

The method for developing the substitute trip was necessarily manual. It required exploration of modal combinations of trips from multiple destinations using several service providers (from state-run bus and train services to smaller, private bus services). Automated mapping of trip options using GIS software was not considered viable. Firstly, datasets for all service providers and all modes (for example, local cycling and walking maps) were not available in an appropriate format. Secondly, it

was thought that any automation of the mapping process might miss potential trip combinations only obvious through manual exploration.

First, the street network distance from the respondent's estimated origin (home) to destination (work) was calculated using Google Maps. Of the trip options displayed by Google Maps, the trip with the least driving distance as measured by kilometres was chosen over the trip with the least time. This enabled estimation of the most direct route and also avoided inconsistencies common to time estimations when using Google Maps.

Respondents living less than five kilometres from their destination were automatically categorised as being able to access their destination by cycling as a single active mode. Research on the average acceptable distance people will cycle for utilitarian purposes is inconclusive. Krizek et al. (2009a), for example, indicate a strong market for bicycling trips less than two and a half kilometres. Keijer and Rietveld (2000), Rietveld (2000) and Martens (2004; 2007) suggest that the bicycle is most often used for distances up to three and a half kilometres. More recent studies have shown that people are willing to cycle up to ten kilometres to access high frequency public transport services (as reviewed by Pucher et al. 2010). Five kilometres has been chosen for this study simply because it represents an intermediary figure between those articulated in existing research.

Substitute trips for respondents living more than five kilometres from their destination were then developed as a staged and multimodal trip, starting with a walking or cycling component, progressing to a public transport component and concluding with a walking component (for example, cycle – train – walk or walk – bus – walk).

The origin and destination were entered into the trip planner function of a government public transport information website (<http://www.131500.com.au>). The trip timing was set to match the respondent's answer to question "What time, on most days, do you start your trip to work?", with the day of travel set as Tuesday (representing a typical working day).

The trip planner function plans a public transport trip based on the user's input of trip origin and destination, as well as the time and date at which they wish to travel. At the time of analysis (August –September 2011), this function already allowed for a walking component of the trip to access and egress public transport. This is limited to less than one kilometre. A combination of public transport maps, Google Maps and local cycleway maps was used to manually expand this access component to a maximum of five kilometres for each trip suggested by the trip planner. For example, if the trip planner suggested that a respondent catch a bus from the trip origin to a train station and then a train to his or her destination, various datasets (such as cycle route maps and bus timetables) were used to determine whether the initial bus trip could be substituted with a cycling trip. Several modal combinations were explored with data on trip times, distances and trip descriptions all recorded in Excel. Exploration continued until all reasonable trip options were exhausted. This was usually two to three options. In each assessment, the aim was to determine the fastest route with the least service changes. The final trip selected as the substitute trip was the trip that matched these criteria.

In each case, the timing of the substituted trip was calculated by adding the estimated time for each component. Based on existing research, it was calculated that it would take the average person 13.5 minutes to walk one kilometre (Knoblauch et al. 1996; Burke and Brown 2007) and 4.5 minutes to cycle one kilometre (Transportation Research Board 2005). The public transport time was taken from the timetables listed on the 131500 website and a 'contingency time' of five minutes was added to each trip to account for the time it might take to, for example, lock up a bike and buy tickets. The total time calculated for the substituted trip was then subtracted from the perceived time of the current trip indicated by the respondent in response to the question 'From the time you leave home to the time you arrive at work, how long, on most days, does your trip to work take?'. The difference determined the trip's point on the scale of feasibility (Table 5.4 above).

For example, Table 5.5 demonstrates the feasibility of replacing respondent X’s 45 minute car trip with a multi modal combination of a 2.3 kilometre cycle, a 35 minute train trip and a 200 metre walk, with a contingency time of 5 minutes.

Table 5.5: Trip substitution analysis feasibility example

a	B	C	d	e	F	g	h	i
Cycling distance (km)	Cycle time (mins) =a*4.5 [^]	Public transport time (mins)	Walking distance (km)	Walking time (mins) =d*13.5 ^{^^}	Contingency Time (mins)	Total time (mins) =b+c+e+f	Perceived driving time (mins)	Feasibility (mins) =g-h
2.3	10.5	35.0	0.2	2.7	5.0	53.2	55.0	-1.8

[^]13km per hour is translated to 4.5 minutes per kilometre by the calculation 60/13 rounded to the nearest .5 minute

^{^^}4.5 kilometres per hour is translated to 13.5 minutes per kilometre by the calculation 60/4.5 rounded to the nearest .5 minute

The resulting feasibility time is -1.8, meaning this respondent’s trip would be rated as a ‘one’ on the feasibility scale.

Once a substitute trip, average time penalty and rating on the feasibility scale was attributed to each respondent, the average time penalty experienced across all three organisations was calculated to be 21 minutes. That is, on average, an alternative transport trip will take a respondent 21 minutes more each way than the time he or she perceives it takes to drive. As can be expected, these averages hide considerable variability both between and within organisations and cannot be considered representative.

Across all organisations, 22 per cent of respondents could substitute their current car journey to work with an alternative mode that would take less than five minutes more than the time they perceive it takes them to do their existing car journey. That is, 22 per cent of respondents were allocated a feasibility rating of one.

Twenty per cent of respondents would experience between five and 15 minutes' time penalty while 29 per cent of respondents would experience a 16 to 30 minute time penalty for an alternative transport commute. For the remaining 28 per cent of respondents, an active trip would add more than 31 minutes to the time they perceive it currently takes them to do their daily commute. This is demonstrated in Table 5.6.

Table 5.6: The distribution of feasibility ratings (time penalty)

Feasibility rating	Time	#	%
1	<5 mins	26	22
2	5-15 mins	24	20
3	16-30 mins	35	29
4	31-45 mins	18	16
5	>45 mins	16	13

Respondents calculated as having a time penalty of less than five minutes and a feasibility rating of one were considered suitable candidates for in-depth interview. These 26 participants fit the key selection criterion – that is, they could travel to work using alternative transport modes *within 5 minutes of the time* they perceive it currently takes them to drive.

Conclusion

This chapter has detailed the way I used purposive sampling to recruit participants for in-depth interview. As a qualitative study aspiring to rigour, the level of detail provided is intended to ensure an audit trail and assist confirmability of my findings (Lincoln and Guba 1985). The chapter started by outlining three key criteria for participant selection. It was explained that participants needed to live in a low-density city, travel to work by car and potentially be able to feasibly substitute that car journey with an alternative transport mode. These criteria were then justified and the method of trip substitution analysis explained whereby participants were sourced and selected for the following stage of the study. This method identified 26 potential participants for progression to in-depth interview. The following chapter goes on to describe the way interviews were carried out as well as how the interview data was analysed.

Chapter Six: From Behind the Wheel - people talking about practices

Introduction

The previous two chapters have articulated my approach to automobility. This is the third and final chapter relating to my research methodology and methods. As such it details how I collected data through in-depth interviews and proceeded with analysis using a suite of data coding techniques. As outlined in Chapter Five, these methods are qualitative and typical of a grounded theory study. In summary, this approach included purposive and theoretical sampling, the commencement of data analysis during data collection, the constant comparison of data with emergent theoretical categories and a focus on the development of theory via theoretical saturation.

Participant Recruitment

The trip substitution analysis outlined in Chapter Five revealed that 26 respondents to an initial questionnaire could substitute their existing driving trip with an alternative transport trip without a perceived time penalty. From this group, three participants were e-mailed at a time with an invitation to participate in the second phase of the study. Participants were advised that this phase would entail participation in two 60 minute interviews to be carried out at a time and place suitable for them and that they would receive one AU\$25 gift voucher as a gesture of thanks for their participation. This process of participant recruitment continued until theoretical saturation was reached. This point was defined as the juncture at which no new information arises (Morse 2007). The way this point was reached, along with the process of data analysis, is described in detail below.

In-depth Interview Process

In total 15 people participated in 30 interviews lasting between 55 and 70 minutes⁹. I conducted all interviews during the period from October to December in 2011.

Given the composition of the sample, the focus of the study is on barriers to active transport for one particular group in Australian society. This focus has allowed full development of the proposal that car use can be considered as deeply embedded in social and cultural constructions of what it is to live a normal life. As discussed in the previous chapter, I used purposive sampling. As a result, I do not wish to make claims that the meanings of car use and indeed interpretations of a 'normal life' held by the people I spoke to are necessarily representative of the population. I have no reason to believe, however, that participants' experiences differ significantly from other commuters working outside of the Sydney central business district or in any other urban area characterised by low-density residential uses, a dispersed geography of employment and a car-dominated mode-share for the journey to work. Prescribing to

⁹ The process of participant interview was approved by the University of New South Wales as compliant with the requirements as set by the Australian National Health and Medical Research Council in the National Statement on Ethical Conduct in Human Research (project reference number 115122, issued 12 October, 2011).

good qualitative research protocol, I have been as rigorous and explicit in my method of data collection and analysis as possible. It is hoped that such attention to detail will enable replication of the study.

Before the Interview: The Process of Ground Truthing

As each participant agreed to take part in the qualitative phase of the study, I undertook to 'ground truth' the trip that had been mapped as his or her alternative trip. This entailed actually going into the field and 'doing' the alternative trip. Further, it required that I do the trip at a similar time of the day as the participant would if he or she were to substitute it for the existing drive to work. In one case, where the participant lived in a relatively isolated location, the first leg of the journey was assumed as accurate. This avoided any chance of incidental interaction (thus avoiding both embarrassment on formally meeting the participant and the need to reveal the purpose of the study). This process allowed me to test the efficacy of the trip substitution method and confirm that the alternative trip would indeed take a similar amount of time as the car-based journey. It also allowed me to speak in some detail about the alternative trip as it was introduced to each participant. For example, I was able to describe the topography of the streets, the condition of the roads and footpaths, the location and design of the bike parking, the exposed or otherwise design of the station platform, and the dominant demographic of my fellow travellers:

Jennifer: So, when we looked at the data we got from that original online survey you did, we went through it and did what's called a trip substitution analysis. We wanted to see how people who normally drive to work might be able to get to work in another way, like catching the train, or a bus, or riding a bike, or maybe a combination of those things.

*Harry*¹⁰: Oh yeah, how did that work out?

Jennifer: Well, for your trip from [Harry's approximate residential address] to [Harry's workplace], we worked out that you could ride to Central Station and then catch the train to Parramatta and walk from there to your office here and it'd take you the same amount of time as it takes you now to drive.

¹⁰ All participant names have been changed.

Harry: Really?

Jennifer: Yeah, it was actually a little quicker when you consider your walk from where you park.

Harry: So I'd ride to the city?

Jennifer: Yeah, have you ever done that?

Harry: No, I'm not sure which way I'd go.

Jennifer: Well, there's pretty much an on road bike lane on the quieter roads near [participant's street] most of the way, but then, you know when you come down to [main] Road, you cross there at those lights and it's a good separated bike path for the rest of the way. You've probably seen it, there's usually quite a few people riding along there in the morning and people walking to the city as well.

I was also able to experience and understand the feelings and sensations of the journey from the point of view of someone who had not undertaken that journey before. Sensations such as the physicality of crowding on the train, getting wet in the rain, being bored waiting for a connection and frustrated when that connection did not come. Feelings of panic when the bus took an unanticipated route, annoyed when I struggled to find a safe place to park my bike, scared and vulnerable as I navigated my way through a back road that I had expected would be quiet but at the time was inundated by the school rush hour. I experienced feeling tired as I lugged a backpack full of clothes up the station stairs and exasperated when I got to my destination only to realise I had forgotten to pack a change of shoes. Of particular note was a feeling of isolation as I navigated my way through alien spaces, such as a train station that was not my local train station. Some of the alternative trips proposed involved participants cycling to stations that would most likely not be their local station – usually to save time by catching a more direct connection. Most of the trips involved walking or cycling on streets that the participant would not likely have walked or cycled before – such as the streets around the building where they work. These streets would be seen only from the participant's car as it drives underneath the building to an on-site

parking space. Hence the feeling of isolation that I experienced may not be uncommon for the novice alternative transport commuter.

I openly admit that I did not walk, ride or board the train in the shoes of the participant when I undertook to ground truth an alternative trip. Whilst I physically completed each trip, undertaking the journey myself does not allow me to second guess the sensations that would be experienced by the participant if he or she were to embark on this journey. The most elementary explanatory example is that I have relatively more experience using alternative transport than the majority of participants. Further, given I could not assume the normal route taken by the participant, I did not have the reference point of the use of the car for each exact trip as the deep-rooted default mode with which to compare my frustrations. People come to the challenge of alternative transport from different starting points. Feeling hot, cold, irritated, exasperated, tired, scared and isolated, did, however, give me both a rational insight into the structure of the trip and a very personal, embodied and emotional insight into the way the trip might be experienced by the people with whom I spoke. I kept a reflective journal during the ground truthing sessions which was subsequently checked against emergent themes during the coding process described below. Memo 6.1 is an excerpt from this journal.

Memo 6.1: Newtown to Bella Vista

20 October, 2011

Trip: XXX Street, Newtown – Bella Vista

Ride to Redfern Station and catch the train to Westmead then the T65 or T64 to Bella Vista.

Today was one of those days where it seemed to be the perfect temperature for riding and it wasn't too hot on the train. I started out pretty early – 6.30 - so the traffic around Newtown wasn't too bad. I was worried about leaving the bike at Redfern, but there were quite a few students and people starting to go into the city so it felt safe enough. I took my helmet with me though which added to the stuff I was carrying. Today this included a change of clothes, a book, water bottle, my journal, phone, wallet etc. I've started to assume people can leave a towel and toiletries at work so haven't been loading myself up with those for the last couple of trips. I wonder whether Rebecca has a bike and how she'd feel about leaving it at Redfern?

Memo 6.1: Newtown to Bella Vista (continued)

Anyway, the train was not too bad, pretty comfortable, I had a seat and spent most of it listening to news radio from my phone. The bus was not as much fun. I had trouble finding the right stop at Parramatta so missed the connection I'd planned to get. I didn't get a seat, but the trip was over pretty quickly. No one looked very happy to be there, and I noticed a relatively high proportion of people of Indian descent, relative to the offices of [organisation] that is. It reminded me of a friend who'd once called the bus the 'loser cruiser' – people almost looked ashamed. This isn't a look or a sense I had felt before when I'd used the bus for my travels around the inner city – particularly during peak-hour when everyone is on the bus from suits to students to shoppers. On today's bus it was different. I felt as though we were a mobile collective of indiscriminate 'others' floating alongside the normal people in their shiny four wheel drives and cute little hatchbacks.

Conducting the Interviews

Interviews were in-depth and semi-structured. They were conducted as 'focused' interviews, meaning that while certain types of information were desired from each participant, the phrasing and order of questions was redefined to accommodate the flow of the interview (Denzin 1989; Minichiello et al. 2008). Notes used to guide each interview can be found in Appendices Two (the first interview) and Three (the second interview). In reality I rarely referred to these notes, choosing instead to conduct the interview as a conversation, exploring themes as they emerged yet ensuring I covered each question at some time throughout the interview.

All interviews were conducted at the participant's workplace, during work hours. This was not a prerequisite for participation. Each participant was given the option to choose when and where the interview should be conducted. The fact that the interviews occurred in the workplace may have influenced the data gathered. However as discussed in the following chapter, considering that the focus of the study is on the journey to work, and that the salience of each participant's identity of 'worker' is likely to be relatively high, this is not considered problematic.

I intentionally drove a car to each interview and ensured prior to arriving that I would be able to park onsite. Driving to each interview was considered important for a number of reasons. First, it allowed me to re-experience car-based mobility. I am accustomed to using alternative transport on a regular basis and needed an experiential refresher on what it is like to drive a car in Sydney's suburbs during peak-hour. The timing of interviews ensured that I had experiences of arriving and leaving the participant's workplace during peak-hour – that is, at generally the same time of day as the participant would be commuting. Secondly, arriving at the participant's workplace in a car, sporting the presentation of 'car driver' concealed any notion that the study might be about alternative transport. For example, driving meant that I made no effort to wear comfortable shoes. I wore smart casual business attire that did not account for a trip on a hot and crowded train, let alone a trip on a bike. This generally included a shirt and jacket, despite the 30 degree heat of spring. I carried a handbag that was entirely adequate for the purposes of my trip but not big enough to conceal the walking shoes that would be necessary to traverse the 800 metres from train station to office. My personal experience of and preference for the car-based trip to access the participant's workplace was explored in a reflective memo, an excerpt of which is in Memo 6.2 below.

Memo 6.2: Driving to North Ryde

27 October, 2011

I had to negotiate with Nash last night to be able to take the car to North Ryde to an interview today. He was going to take it to work because he wanted to stay late but then an opportunity came up for me to do an interview so we changed the plan and he rode his bike instead. I thought about taking the train, but it was hot and I wanted to meet [participant] feeling and looking fresh. I feel really strongly about this – I wouldn't normally intervene in Nash's plans to work late just for the sake of using the car. Usually I would just find another way by taking the train or riding. But it's really important to me to drive to these interviews. It's not only about concealing the nature of the study from participants by not turning up with a bike helmet etc. It's more about making a good impression. But it's also presenting as being on the same page as my participants. I guess it's that I want them to think I am normal.

On reflection, it is telling that I automatically associated driving to each interview with somehow being a more professional and, on a certain level, appropriate and normal way to make a first impression. These reflections have been incorporated into discussions on the way presentation and desires to be perceived as 'normal' become barriers to the uptake of alternative transport (see pages 195-196 in Chapter Seven and 229-230 in Chapter Eight).

The first interview

The first interview was particularly unstructured with an explicit aim to avoid revealing too much about the study, particularly its focus on alternative transport. Research demonstrates that people are unlikely to acknowledge deeper and emotionally based motives for car use beyond a superficial evaluation of utilitarian/rational reasoning if they are questioned directly about why they drive a car (Steg et al. 2001; Steg 2005; Gardner and Abraham 2007). It is therefore recommended that exploration of deeper motives for car use will be more accessible to the researcher when the aim of the research is not explicitly apparent. This approach is also considered imperative in the study's appeal to practice where the aim is to access tacit knowledge about everyday life. In their pursuit to reject the "tyranny of representation" (Hitchings 2012, 61), practice theorists appear to be somewhat hesitant about the use of interviews to research routine practices. The unremarkable nature of routine practice here is often considered inaccessible through verbal exchange and instead requires supplementation with ethnographic or other methods such as video or photographic diaries that capture the 'unspeakable' aspects of daily life so imperative to a practice-based approach. Other practice theorists (most notably Hitchings 2012) advocate that "people can talk about their practices" (Hitchings 2012, 61) and recommend that people can develop a reflexive awareness of their day-to-day mundane behaviours. To help participants develop a heightened sense of the details of why and how they perform certain daily routines, Hitchings recommends that participants need to be convinced firstly of the value of the project and secondly that the mundane is at the heart of the researcher's interest. This, he says, needs to come not from constant prompting but by being upfront about the detail desired and by showing the participant how this kind of reflexive awareness can be accessed.

I admit that my pursuit of a professional appearance was in part motivated by a desire to convince the participant that my research was serious – that it was of value. In line with this desire, I introduced the research as a doctoral study undertaken as part of an established research program in a long standing research centre at the University of New South Wales. As described above, participants in the study were all educated professionals and it was hoped that this presentation of the study would engage the participant's respect and trust.

I first explained that the research was on transport in Sydney – a topic of considerable public interest and debate. Participants were then asked to describe the way they travel to work, including details on the specific route or routes they take. They were asked to talk about the traffic en route, as well as the way they occupy their time in the car. They were encouraged to speak without restriction and in detail. While this information forms an integral component of the study, granting participants the opportunity to voice freely their concerns about city peak-hour driving was an effective way to establish a rapport. By starting the interview with an obvious interest in details such as traffic, specific route choice, choice of radio station and the daily rhythms of other in-car activities (such as applying make-up, making phone calls, checking face book and eating breakfast) I was able to confirm to the participant that this level of detail was what I wanted. I encouraged participants to reflect in-depth on something they did unthinkingly on a day-to-day basis. Some participants found this amusing at first, and in retrospect seeking such detail required a degree of courage and conviction in my method. This researcher experience no doubt reflects the experiences of many other researchers attempting to access details on the mundane happenings of daily life through the method of in-depth interview (Hitchings 2012).

The interview progressed to ask participants to describe what they do at work, their home life and the structure of their typical day. I asked for details on routines associated with preparing for work in the morning and winding down at night. I also asked participants about their aspirations in life. I encouraged participants to speak without restriction about the things that were important to them, exploring ideas they had about where they'd like to be in the future, how they work towards these goals as well as their priorities, values and special interests. This approach to qualitative explorations of automobility is relatively novel. Qualitative research using in-depth interviews to study transport behaviour usually has a more explicit focus on mobility.

Studies often open by asking participants for their views on alternative transport modes (for example Gardner and Abraham 2007) or asking more direct questions about their motives for car use (for example Hiscock et al. 2002). My focus on practice, interconnectedness and meaning meant that it was imperative to frame the journey to work within a context of the other components that comprise not only the participants' day-to-day life experiences but also their aspirations and ideals. By opening with an interest in the practice of driving, progressing to frame this practice with details on other routines and further with insights into each participant's goals and values, I developed a layered appreciation of the way the use of the car for the journey to work is embedded in each participant's life story.

The second interview

The second interview was conducted between six days and two weeks after the first. It was purposefully more structured. This gap between first and second interviews was intended to minimise the impact of the interview process on participants and allow them time to reflect on the study and my questions. By meeting with participants again and retaining contact through e-mails and phone calls, I was also purposefully prolonging my engagement in the data collection process. This was intended to further foster a trusting relationship between myself and participants (Padgett 2008). In addition, the gap between the second and first interview allowed time to examine issues arising from the first interview for further exploration in the second and commence the process of coding such that it occurred concurrent to data collection. The time in the second interview was therefore used to cover 'missed ground', explore emergent themes in greater depth and talk to the participant about transport more explicitly.

At the beginning of the second interview, participants were asked about the type of car they drove, the age at which they'd obtained their driver's licence and the basic travel patterns of their household. The alternative trip developed from the trip substitution analysis described in the previous chapter was then described. In undertaking this description, I was at first concerned about staging "critical situations" (Giddens 1984, 41) by outlining an alternative practice and thereby implicitly suggesting that the participant's existing practice was in some way bad or wrong

(Hitchings 2012). However in reality it seems that the rapport and understanding developed in the first interview meant that any potential antagonism either did not arise or was quickly replaced with comments and questions about the proposed trip. The participant's reactions to this alternative trip were subsequently explored. Potential benefits and barriers relevant to the trip were discussed, both entirely as perceived by the participant.

In order to seek a degree of clarification without compromising the purpose of the research, participants were invited to review transcripts from both interviews (Cho and Trent 2006; Minichiello et al. 2008). This invitation was extended by e-mail within a week of the second interview.

Theoretical Sampling and Saturation

Constant comparison of codes to categories and so forth enabled by coding during the data collection phase deeply influenced my interview technique. The ordering of questions and the depth of exploration of different topics in accordance with this awareness was also constantly modified. I was extremely aware of the rate at which themes within categories were developing repetitively and therefore had a clear understanding of the point at which theoretical saturation of my categories had been reached (Charmaz 2006; Dey 2007). Once this point was reached, the remaining participants in the final cohort of three were interviewed and no effort was made to contact a subsequent cohort for further interviews. By this stage, I had interviewed 15 participants, conducting 30 interviews in total.

A grounded theory study is generally characterised by the premise that data collection and analysis are undertaken simultaneously (Richardson and Kramer 2006; Bruce 2007). Sampling decisions are also made concurrent to the process of data collection to enable exploration of concepts as they develop (Charmaz 2003; Charmaz and Henwood 2008). My initial approach to sampling, through application of a trip substitution analysis, limited the ability to incorporate extensive modifications to my study sample during data collection. It is possible, however, that if and when initial sampling decisions 'fit' the data, the requirement to vary the sample through continual revision is limited (Strauss and Corbin 1990). Having said this, my constant reflections on data did actively guide minor modifications to subsequent sampling decisions. For

example, based on the findings of existing research (for example Daley and Rissel 2011), I was originally very interested in the idea that physical presentation can be a barrier to alternative transport, particularly the need to be well presented for external contacts, such as clients. I wanted to explore the way this might impact on the participant's view of the feasibility of using alternative transport. Presentation was therefore one of my initial categories and I had thought it would be important to include in my sample participants whose day-to-day work entailed external client meetings requiring a certain standard of presentation. By coincidence, one of the first three participants I interviewed was regularly involved in external client meetings while the remaining two worked primarily within the office where the interview occurred. I had previously observed that the dress standard for this particular office was relaxed. My initial reflections of the way participants spoke about presentation indicated that those whose work did not involve external client interaction were just as concerned about presentation as the participant who was regularly involved in off-site meetings. Being seen by peers and more senior staff to be lugging around bikes, helmets and backpacks, sporting 'helmet hair' and sweat, was just as disconcerting as the idea of being seen by clients in a similar state. As a result, I did not pursue theoretical sampling of participants whose job entailed regular external client meetings in an effort to saturate this category. I realised it could be explored using data gathered from participants not regularly involved in external meetings.

Observations and Memos

In addition to the journal kept during the ground truthing process, I also kept a journal of reflective memos which was updated immediately after each interview or set of interviews and again following the transcription process. This early exploration of tentative categories was essentially one of pouring my initial impressions and reflections into very rough categories based on the series of semi structured questions which had been used to guide the interview. To obtain triangulation of the data (Denzin 1989), the journal was also used to record observations of the workplace – for example its interior and exterior built form, services and facilities provided for employees and the dominant dress code. I also recorded observations at the conclusion of each car trip made to the workplace. These observations were undertaken as close as possible to the time of each interview. A sample of a memo

recorded regarding dress codes is provided in Memo 6.3 below. The contents of these memos were incorporated into the data analysis process as described below.

Memo 6.3: Dressing for Success

17 November, 2011

I spoke to Ben today. He has a senior position, with a team of four or so. He really stressed the idea of reliability in his job, being physically available to his staff and being sociable. He was one of the first people I'd seen wearing a suit at [company]. The dress code around here seems to be pretty relaxed, suits are rare. I sat in the café downstairs for an hour or so this morning and noticed quite a few people wearing corporate tee shirts and shirts – almost like a uniform. It either indicates they're proud of the company or they're too busy/lazy to decide what to wear each day! Either way, it gives the place a good vibe. Presentation doesn't seem to be all that formal, however people obviously still care about what they look like.

Interview Data Analysis

Outline of Data Analysis Process

With permission from participants, interviews were recorded with a digital voice recorder. I transcribed each interview, with the first interview transcribed prior to the second. Transcribing the interviews myself was important for three reasons. Firstly, it enabled me to reflect on my interview technique. Secondly, as a relatively manual and time-consuming task, it provided invaluable downtime. Thirdly, it allowed me to 'immerse' myself in the data (Minichiello et al. 2008) – I used this time to consider emergent themes and other issues with the way the interviews were progressing.

Once I had transcribed each recording, I undertook more systematic coding of all data from both journals and interviews using the CAQDAS (computer aided qualitative data analysis software) program QSR NVivo 9. Methods for coding the transcripts and my reflective memos followed a grounded theory methodology and involved constant comparative analysis of data against emergent themes (Charmaz 2006). Data analysis

began during the data collection phase, in an effort to maintain the dialectic between theory and data consistent with a grounded theory approach.

This section goes on to describe this complex process in detail. In summary, data analysis commenced with identification of eight Topic Codes which were then narrowed down to five Initial Codes. Initial Codes were used to group categories of concepts into 41 Primary Codes. Primary Codes were then allocated into one of two Groups and compared and contrasted through a process of Axial Coding. Eleven final Concepts emerged which were then clarified through a process of practice mapping. Finally, a Core Concept was identified through a process of Selective Coding.

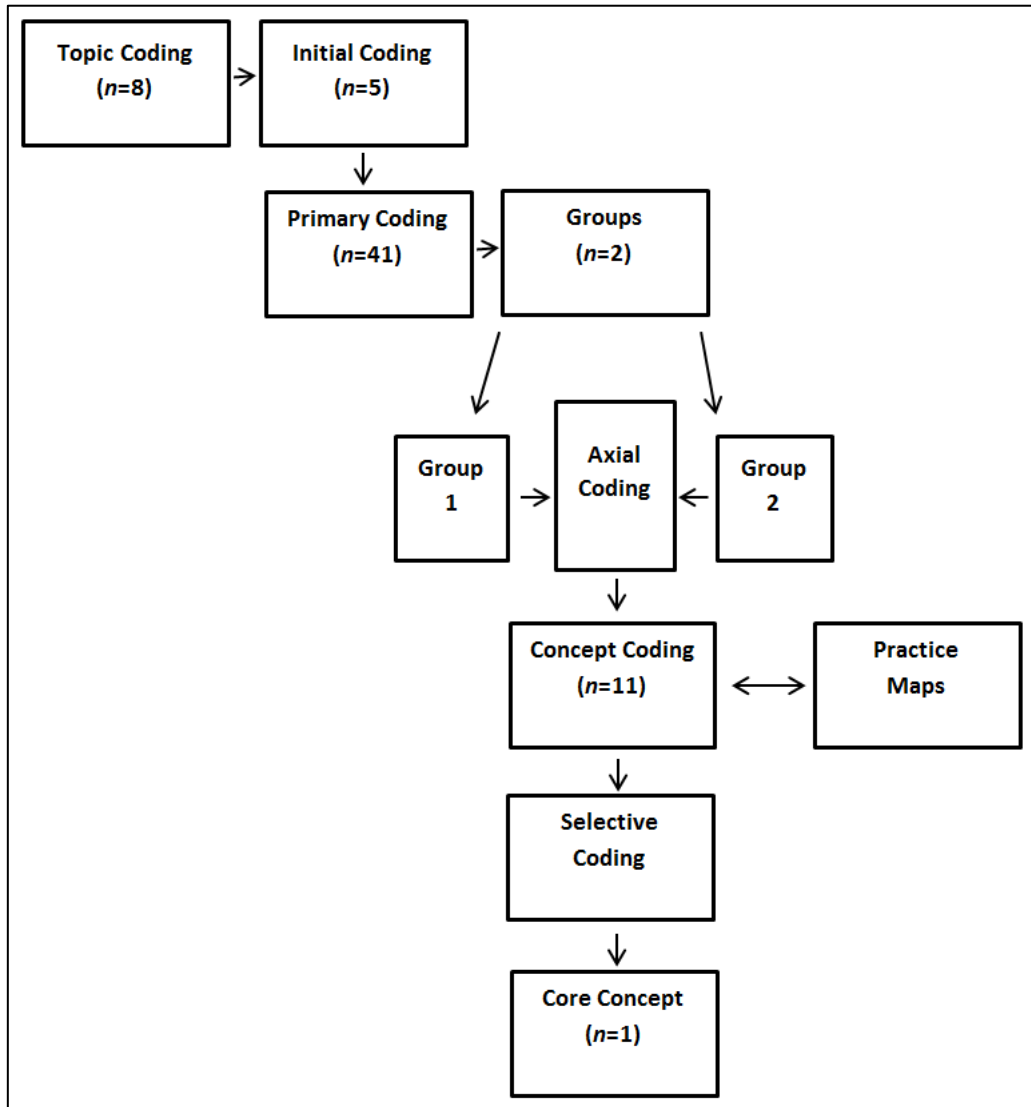
This process is represented in Figure 6.1 on the following page.

Topic Coding, Initial Coding, Primary Coding

As indicated above, data analysis commenced with the simple process of Topic Coding (or descriptive coding after Tesch 1990) where sections of data relating to particular topics were grouped together for further analysis (Morse 2007). Topic Codes were as follows:

- Route, Traffic, Driving
- Working
- Home Life
- Other Life
- Importance statements
- Nurturing statements
- Alternative Trip
- Alternative Transport

Figure 6.1: Data analysis process (n = number of codes)



Topic Coding, Initial Coding, Primary Coding (continued)

Initial Coding (Saldaña 2009) was then used to develop categories of concepts. These Initial Codes were related to Topic Codes although not necessarily in a hierarchical way. This is because Topic Codes were roughly sketched from interview transcripts and memos and related directly to the way interviews were structured. Initial Codes, however, were not necessarily bound by the structure of the interviews. I found that imposing a hierarchy of Topic and Initial Codes on my data limited emergent themes and thus I abandoned attempts to do so.

A hierarchical format was used, however, to develop Primary Codes. Initial Codes were used as headings under which Primary Codes of more explanatory patterns could be grouped. These are listed below in Table 6.1.

Table 6.1: All Initial and related Primary Codes

Initial Code	Primary Codes
Car appreciation	Car Love / Downtime / Social and Urban Explorations / Speed and Movement / Using time
Cracks in automobility	Acknowledged downsides / Cost / Fear and safety / Habit / Overestimations of time and reliability / Unfreedoms (free but unfree) / Parking
Automobility related craving	Connectivity and interaction / Convenience / Comfort / Flexibility / Freedom / Movement and busy / Presentation / Saving time / Time out / True control / Privacy / Reliability
Stresses of modern life	Challenged, paradox of / Connectivity, paradox of / Consumption, money / Need for control / Need for recognition / Space Pressure / Stress, Need to Move / Time pressure / Transience / Trapped
Importance Statements	Family / Work / Consumption and 'things' / Friends / Happiness / Passion / Making a contribution

Table 6.2 below provides an illustration of a piece of data coded as the Initial Code and the Primary Codes Freedom and True Control.

Table 6.2: An example of data coded using Initial and Primary Coding methods

Data	Initial Code	Primary Code
Larry: Yeah, there's half a dozen ways I can take [to get to work] in the same amount of time. I might just change for something different, have a look, you know, "haven't been down that way for a while, let's see what's happened", mix it up. I like to keep my eye on what's happening.	Automobility related craving	Freedom / True Control

A clear distinction emerged between Primary Codes that were related directly to car use and Primary Codes not directly related to the car. To facilitate further coding, I separated these codes into two Groups labelled "Automobility" and "Modern Life". Table 6.3 below illustrates this separation.

Table 6.3: All Initial and related Primary Codes divided into Groups for Axial Coding

Initial Code	Primary Codes	Group
Car appreciation	Car Love / Downtime / Social and Urban Explorations / Speed and Movement / Using time	Automobility
Cracks in automobility	Acknowledged downsides / Cost / Fear and safety / Habit / Overestimations of time and reliability / Unfreedoms (free but unfree) / Parking	
Automobility related craving	Connectivity and interaction / Convenience / Comfort / Flexibility / Freedom / Movement and busy / Presentation / Saving time / Time out / True control / Privacy / Reliability	

Initial Code	Primary Codes	Group
Stresses of modern life	Challenged, paradox of / Connectivity, paradox of / Consumption, money / Need for control / Need for recognition / Space Pressure / Stress, Need to Move / Time pressure / Transience / Trapped	Modern Life
Importance Statements	Family / Work / Consumption and 'things' / Friends / Happiness / Passion / Making a contribution	

At this point I returned to the data to write a series of analytical memos describing each of the Primary Codes in the context of the two Groups. These memos also explored initial links between the Automobility Group and the Modernity Group. Memo 6.4 is an example of the memo written for the Primary Code Flexibility. Forty one memos were written in total, one for each Primary Code.

<p><i>Memo 6.4: Expanding on the Primary Code of Flexibility</i></p> <p><i>6 January, 2011</i></p> <p>Code: Flexibility</p> <p>Category: Cravings</p> <p>Group: Automobility</p>
<p><i>Discussion:</i></p> <p>This covers the idea of people wanting to operate on their own timetable and needing to operate on their own timetable, or having to operate on a work timetable too. It also covers the desire to be seen as flexible, and the view that this flexibility can only be attained through car use. Anthony sums it up:</p> <p style="padding-left: 40px;">“It's part of my work and it happens quite a bit. "Look, you know, don't worry about coming in, I'll come out and see you on the way home". And you get a lot of gratitude and kudos for that from the people.”</p>

Memo 6.4: Expanding on the Primary Code of Flexibility (continued)

Flexibility is often linked to time – to being able to come and go as you please (or when you “need” to), to being able to turn up on time, to being able to follow a number of different timetables/agendas (for example, Larry and Megan needing two cars because “on the weekend where someone has to go here and someone has to go there”). The idea of being a “clock watcher” is often criticised (Ben, Chris, Megan, Rebecca) – it’s not cool to be worried about the time (Ben) or to let people down by having to be “the person who has to leave” (Megan). Interestingly, Rebecca mentioned that it doesn’t matter what else you do at work, as long as you put in the hours. That is how strong that notion of time, flexibility of time, being able to stay back is.

“And that was a big thing for both of us is that you don't want to be known as the person who turns around and says "oh, I have to go at 5, or I have to go at 5.30" that sort of thing.”

Is flexibility only conceived of in terms of time? No, to be flexible is to be dependable, it can be that you ‘say what you do and do what you say’, which might not necessarily be linked to time. For example, Ben saying that the guys who live in the city don’t go to tennis as consistently as he does.

Any relationships?

How is this linked to some of the modernity codes? It’s related to many of them – recognition, money/consumption, time, belonging, general stress and pressure to perform, need for control. It is linked to globalisation too – needing to be flexible to accommodate other time zones.

Key Phrase:

“the car allows me to bend myself around others”

Axial Coding

From each of these Primary Code memos I extracted a key phrase which I felt encapsulated the message of the memo. For example, for Flexibility, the Key Phrase became ‘*The car allows me to bend myself around others*’. I also allocated each Primary Code an alphabetical and numerical identifier based on each code’s Group and Primary Code. For example, Flexibility was identified as ‘4B’.

Using Axial Coding (Charmaz 2006; Corbin and Strauss 2008), I then began the process of “weaving the fractured story back together” (Glaser 1978, 72). Axial Coding is the process of strategically reassembling data that have been pulled apart during the Initial and Primary Coding processes. At its heart is the processes of seeking out links between codes that have been previously explored (Saldaña 2009, 159). Primary Codes from the two Groups were contrasted and compared. For example, Time Pressure was a Primary Code within the initial Group of Modernity. This was then compared to another Primary Code of Flexibility in the initial Group of Automobility. The final Concept from this comparison became clear through the merging of the two Key Phrases allocated to these Topic Codes: *‘Time is a valuable commodity and I control how I “spend” it. The car allows me to bend myself around others’*. This process produced a complex web of concepts; an excerpt from the coding process can be found in Table 6.4.

Table 6.4: A sample of the Axial Coding process

ID	Primary Code (Modernity Group)	Code Comparison	ID	Primary Code (Automobility Group)	ID	Resultant Concept
5A	Stress (I feel and deal with stress and pressure as part of daily life)		3B	Convenience (the car is the most hassle free way for me to travel)	5A3B	I feel and deal with stress and pressure as part of daily life. The car is the most hassle free way for me to travel.
					5A6B	I feel and deal with stress and pressure as part of daily life. The car makes me feel like I am getting somewhere.
6A	Time pressure (time is a valuable commodity and I control how I “spend” it)		4B	Flexibility (the car allows me to bend myself around others)	6A3B	Time is a valuable commodity and I control how I “spend” it. The car is the most hassle free way for me to travel.
					6A4B	Time is a valuable commodity and I control how I “spend” it. The car allows me to bend myself around others.
10A	Trapped (I feel trapped by certain things in my life and I don't like it)		5B	Freedom (the car allows me to be free to control where I go and when I go)	10A5B	I feel trapped by certain things in my life and I don't like it. The car allows me to be free to control where I go and when I go.
					10A6B	I feel trapped by certain things in my life and I don't like it. The car makes me feel like I am getting somewhere.
13A	Challenged, paradox of (I want to be challenged, but not too much)		6B	Movement (the car makes me feel like I am getting somewhere)	13A3B	I want to be challenged, but not too much. The car is the most hassle free way for me to travel
					13A6B	I want to be challenged, but not too much. The car makes me feel like I am getting somewhere.

Eleven Concepts emerged from this process of Axial Coding and these were used to explore why the people I spoke to drive cars.

Each of these 11 Concepts was allocated a shortened title as follows:

- The Car, Flexibility and Reliability
- The Car, Freedom and Control
- The Car, Speed and Efficiency
- Movement and Action
- Car Love
- Monetary Incentive
- On Comfort and Discomfort
- Presentation
- “It’s just what I’ve always done” – on Habit
- A Place to Put the Car – on Parking
- Intentions to Change

Data analysis began during the data collection phase, in an effort to maintain the dialectic between theory and data and to inform theoretical sampling consistent with a grounded theory approach (Charmaz 2003). Attention now turns to the way data was analysed once the interview process had concluded.

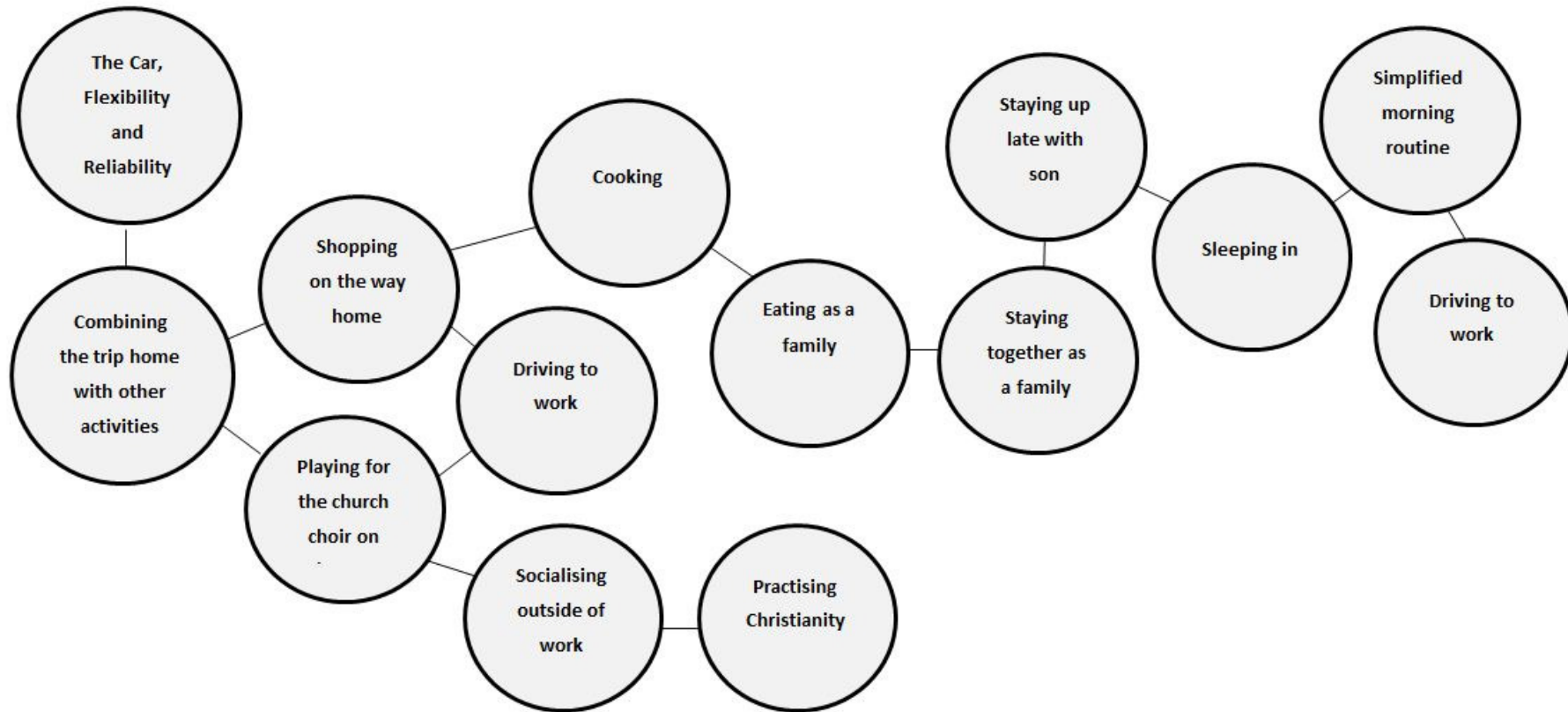
Clarifying Concepts Through Practice Mapping

As detailed in Chapter Four, my approach to the study was informed by a desire to focus on the dailiness of everyday practices and the way practices are connected to sustain resistance to alternative transport. I wanted to examine the myriad, interlocking practices supportive of the practice of driving to work. This required that I look ‘horizontally’ at the place of the car in seemingly unrelated systems and practices.

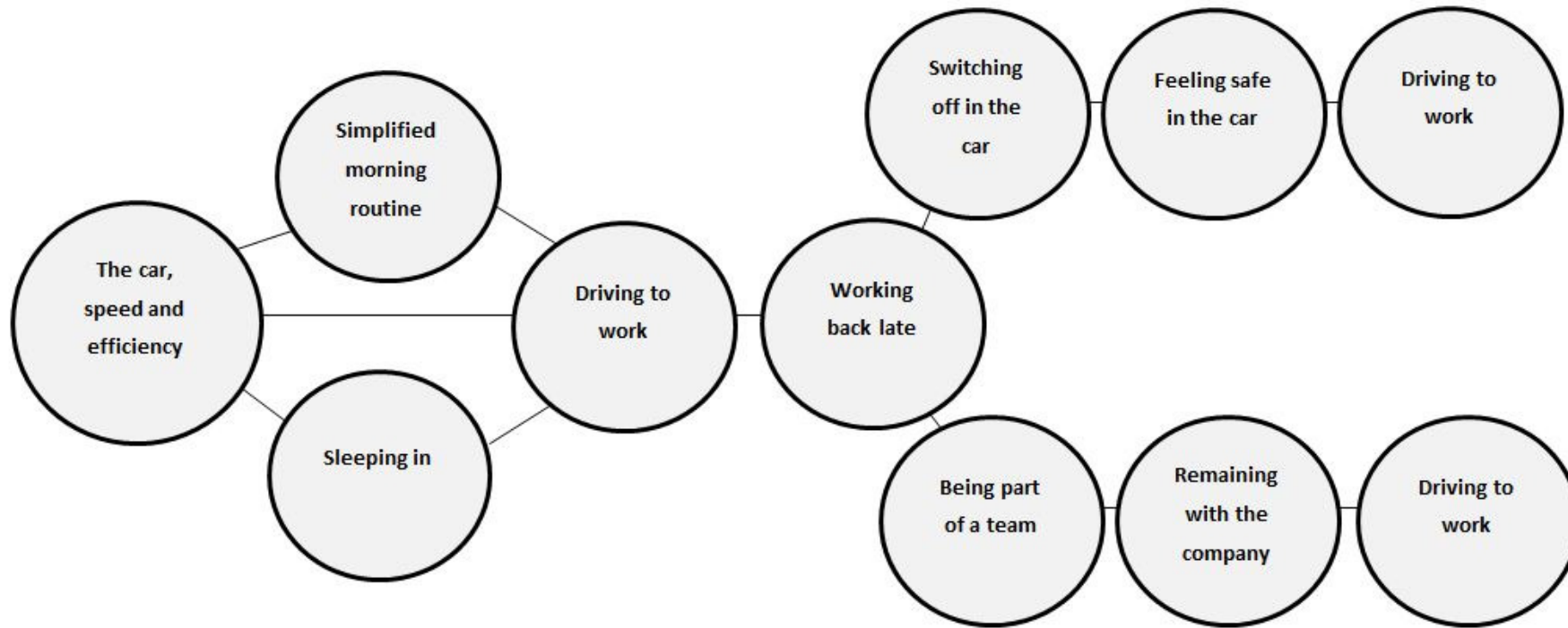
On conclusion of the interview and data analysis stage, I wanted to visualise the way practices associated with automobility and the automobile featured in the 11 Concepts

that I had developed through the process of axial coding. I subsequently developed a technique to 'map' practices and used this technique to confirm the presence of the car in the 11 Concepts.

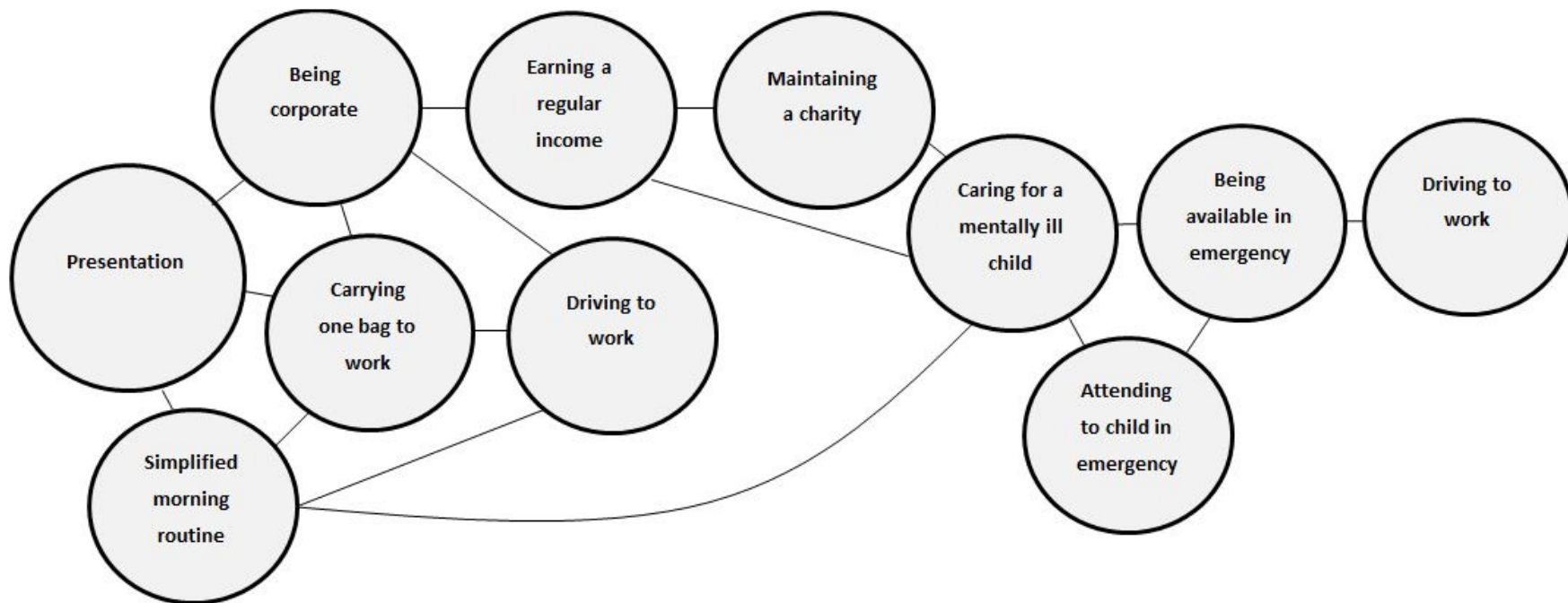
Starting with the Concepts developed during the Axial Coding process, I worked back through the data to identify practices contributing to each Concept. I then linked these practices with other practices. This process was like recording the stories of practice with a focus on the role of the car in these stories. The process inevitably led me to either an in car or car facilitated practice, making visible the way the car was, to varying degrees, integral to the concepts I had developed through Axial Coding. This was a time-consuming exercise and as a result I chose a sample participant for each concept. The exercise was one of clarification rather than extrapolation – I was not starting from a blank page and as such it was not considered problematic that I had not mapped each concept for each participant. The technique could be applied in its entirety to other practice-based studies that aim to visualise the way practices are interconnected. Three sample maps are presented below.



Practice Map 1: Anthony - Flexibility and Reliability



Practice Map 2: Rebecca - Speed and Efficiency



Practice Map 3: Diane - Presentation

Introducing a Core Concept

This complex process of data analysis had resulted in 11 Concepts confirmed through practice mapping that to varying degrees substantiated much of the existing research on transport practices. These Concepts and their relationship with extant literature are explored in detail in Chapter Seven. While it was reassuring to validate the findings of previous research, there remained an absence of a central theme from which to hang these different concepts. In Chapter Five (see pages 93-95), I proposed that existing approaches to transport practices had made only incremental attempts to explore the extent to which car use is intertwined with ways of 'being' in the world. At the conclusion of the Axial Coding and Practice Mapping processes, I sensed that my Concepts failed to capture many of the deeper meanings of car use woven through the data. As my understanding of the data developed, I started to fit Concepts to a Core 'explanatory' Category as a way to look beyond extant theory for a deeper way to conceptualise how automobility endures as a practice.

Constructivist grounded theory generally rejects the existence of a Core Category, instead seeking to maintain distance from restriction and absolutism (Denzin 1997; Charmaz 2006; Charmaz and Henwood 2008). I follow Giske and Artinian (2008) and Patton (2001) to propose that the identification of a central story around which to hang my observations does not negate the constructivist ideal that grounded theories are open to ongoing refinement. I remained open to the possibility that any emergent theory could remain organic and under development yet be simultaneously linked to a Core Concept (Patton 2001).

I could see a relatively clear story emerging from the data that for the people I spoke to automobility plays a critical role in the pursuit of the things that matter in life. Resistance to alternative transport is therefore a way to protect and in some cases maintain this pursuit. From previous readings of Giddens (1990), Hiscock et al. (2002) and Little (2001) I recognised that at the core of this story was the idea that automobility is linked to a concept known as ontological security. It was only at this point that I further explored and subsequently assumed ontological security as a guiding framework, again using the idea that existing theories *within* a grounded theory framework can inform a more nuanced understanding of a subject (Charmaz 2006; Liamputtong 2009). Resistance as Ontological Security became my core concept.

I then began the process of Selective Coding whereby the Concepts developed through the process of axial coding were related to this core concept.

Selective Coding Against the Core Concept

The concept of ontological security will be explored in detail in Chapter Eight. For the purposes of relating how I arrived at ontological security as a Core Concept, however, it is enough to say that ontological security depends on there being coherency – the sense that life has connection and purpose (Giddens 1990; Little 2001). Coherency, and by virtue ontological security, is supported by experiences of predictability (Moore 2005), autonomy (Hiscock et al. 2001) and acceptance (Dupuis and Thorns 1998). For the people I spoke to, this was expressed through articulations of the things that are important to them. In developing ontological security as a core concept, I therefore started by using Selective Coding to look at the importance statements coded during the Initial and Primary Coding phases. Selective Coding (also known as Theoretical Coding (Saldaña 2009)) is the process of linking all established Concepts and other subcategories around a Core Concept (Glaser and Strauss 1967, 31; Corbin and Strauss 2008, 104).

These importance statements were:

- Family
- Work
- Consumption
- Friends
- Happiness
- Contribution

I then worked to link the 11 Concept Codes to these statements, asking how, for example, flexibility might be related to caring for family.

To revise, these 11 Concept Codes were:

- The Car, Flexibility and Reliability

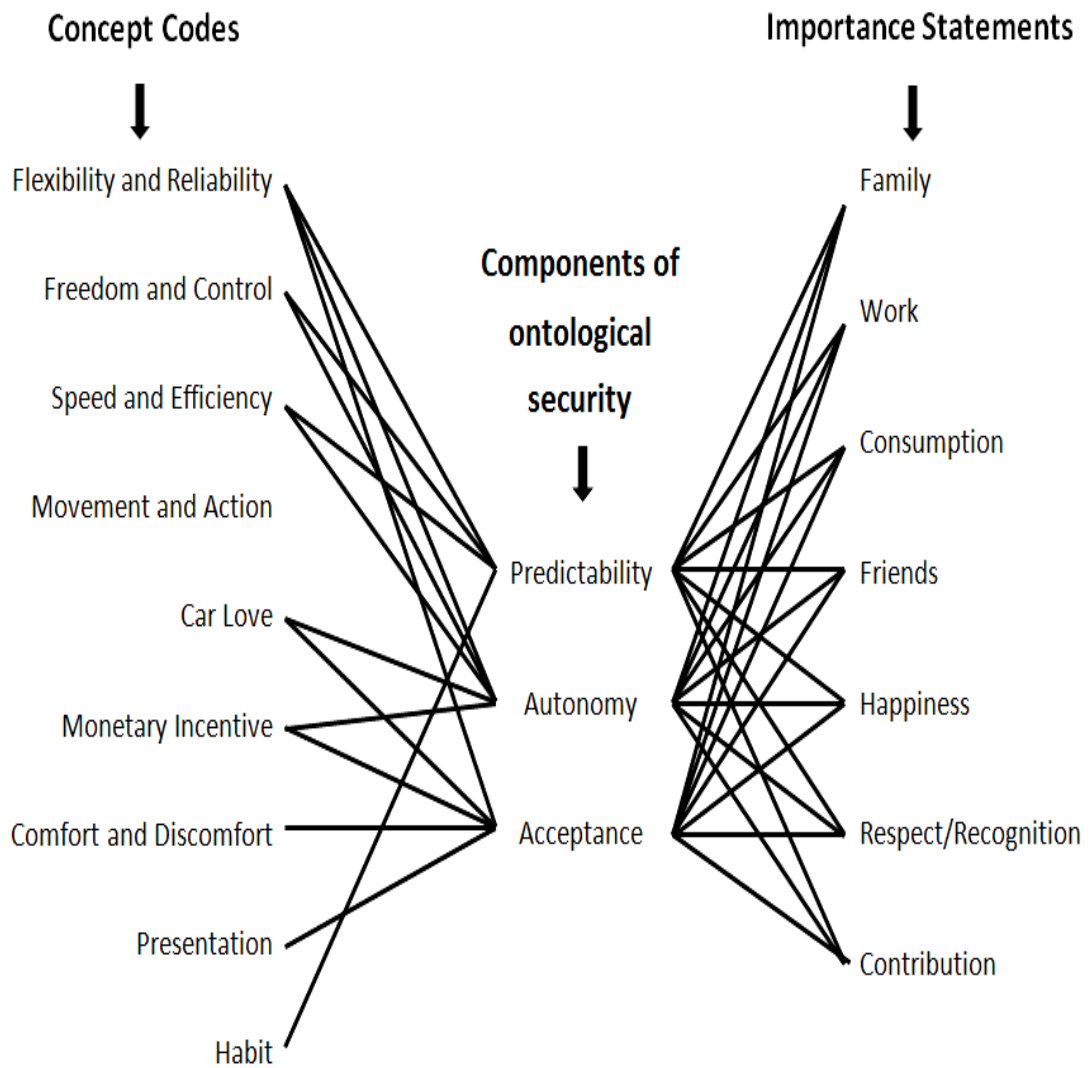
- The Car, Freedom and Control
- The Car, Speed and Efficiency
- Movement and Action
- Car Love
- Monetary Incentive
- On Comfort and Discomfort
- Presentation
- “It’s just what I’ve always done” – on Habit
- A Place to Put the Car – on Parking
- Intentions to Change

I had already used the processes of Axial Coding and Practice Mapping to explore and confirm that the car is related to each of the 11 Concept Codes. I could therefore be confident that by highlighting importance statements with a Concept Code in the context of the components of ontological security, I could also link automobility with ontological security.

Each link between the original Concept Codes and the importance statements fell into at least one of the three components of ontological security. Table 6.5 below demonstrates the way selective coding against the core concept of ontological security developed the three components of predictability, autonomy and acceptance from the original concept codes.

This entire process was aided by the use of QSR NVivo 9 software which was integral to the coding, analysing, annotating and integrating the interview transcripts with my reflective memos.

Table 6.5: Selective Coding against the Core Concept of ontological security



Conclusion

This chapter has detailed how I collected data through in-depth interviews and observations and proceeded with analysis of the resultant transcripts and memos using a suite of data coding techniques.

I conducted two semi-structured interviews with 15 participants. Interviews lasted between 55 and 70 minutes and were conducted at each participant's workplace during normal working hours. Participants were purposefully selected primarily on the basis that their existing car journey to work could be undertaken by alternative transport modes in a similar amount of time to that which it currently takes them to drive. In order to confirm this and to prolong my involvement in the data collection process, I undertook each participant's alternative journey to work prior to commencement of the interview process. Interviews did not solely focus on the participant's transport practices. In addition to details on daily routines and travel, I also encouraged participants to speak without restriction about the things that were important to them, exploring ideas they had about where they'd like to be in the future, how they work towards these goals as well as their priorities, values and special interests. This approach to qualitative explorations of automobility is relatively novel. Throughout this entire process of participant selection, trip substitution and participant interview I kept a journal of reflective memos which were subsequently incorporated into the data analysis process.

Methods for coding the transcripts and my reflective memos followed a grounded theory methodology and involved constant comparative analysis of data against emergent themes (Charmaz 2006). Data analysis began during the data collection phase, in an effort to maintain the dialectic between theory and data consistent with a grounded theory approach.

In summary, data analysis commenced with identification of eight Topic Codes. These Topic Codes were then reduced to five Initial Codes. Initial Codes were used to group categories of concepts into 41 Primary Codes. Primary Codes were then allocated into one of two Groups and compared and contrasted through a process of Axial Coding. Eleven final Concepts emerged which were then clarified through a process of practice

mapping. Finally, the Core Concept of ontological security was identified through a process of Selective Coding.

The following two chapters explore the 11 Concepts and the Core Concept of ontological security in more detail. Chapter Seven opens with an introduction to the participants in this study and progresses to explore the way they experience the benefits associated with automobility.

Part Three: Outcomes

Chapter Seven: Qualitative Analysis

- “You hear it in the office...”

Introduction

The literature reviewed in Chapters Two and Three provided substantial analysis of the way transport decisions are made and enacted. These chapters focussed on more traditional theories of transport behaviour, including time geography, utility theory and psycho-social theoretical approaches to individual behaviour change. The way these theories conceptualise motives for automobility as rational-instrumental (such as the car’s unrivalled speed and comfort) and affective (for example the empowerment inherent to the flexibility of the car) was explained as was the trend towards inter-theoretical studies in recognition that rational-instrumental and affective motivations for automobility are rarely exclusive. Theories exploring the way automobility is a response to wider systems and structures were also outlined. These theories include the new mobilities paradigm but extend to include those placing automobility in the context of the pervading political economy.

Chapter Four outlined my intention to draw from many of these theories to explore transport practices using a structurationist approach, referencing a fluidity in the place of structure and agent in shaping mobility. This intention is founded primarily on there being an orchestrating role for the individual agent in shaping the interconnected and ordinary practices that sustain automobility.

Chapters Five and Six described the methodology and methods used to collect and analyse data. Chapter Six identified 11 conceptual themes developed through axial coding with their relevance confirmed through practice mapping. Chapter Six also explained the method used to tie these themes to the Core Concept of ontological security.

The present chapter, Chapter Seven, is dedicated to further analysis of the 11 conceptual themes emerging from my data. It is important to note that these themes were not pre-determined and were developed through the data collection and analysis process described in Chapter Six. The Core Concept of ontological security will be explored in Chapter Eight. Many of the 11 themes loosely reference those described in Chapter Two, indicating that this research confirms some of the existing findings in the literature on automobility and why the car continues to dominate transport behaviour. Consistencies and inconsistencies with current research are referenced throughout the following analysis.

To reiterate from Chapter Six, these themes are as follows:

- The Car, Flexibility and Reliability
- The Car, Freedom and Control
- The Car, Speed and Efficiency
- Movement and Action
- Car Love
- Monetary Incentive
- On Comfort and Discomfort
- Presentation
- “It’s just what I’ve always done” – on Habit
- A Place to Put the Car – on Parking
- Intentions to Change

Prior to exploring their transport and other practices in detail, however, it is important to introduce the study participants. This chapter now turns to this task.

Introduction to Participants

I start by outlining some individual and general background to the participants. I describe various demographic and socio-economic characteristics, including household structure and location relative to their workplace as well as household mobility practices. I then describe characteristics of the substituted trip developed for each participant using the methods outlined in Chapter Five.

Participant Background

Main details of participants are contained in Table 7.1 and are described in narrative below.

Table 7.1: Individual participant details

Participant*	Approximate Age	Gender	Approximate Individual Income (per annum)	Approximate Household Income (per annum)	Highest Level of Educational Attainment
Anthony	55-64 years	Male	>100,000-125,000	>100,000-125,000	Bachelor degree
Ben	18-34 years	Male	>80,000-100,000	>80,000-100,000	Bachelor degree
Chrissy	18-34 years	Female	>80,000-100,000	>100,000-125,000	Bachelor degree
Chris	35-54 years	Male	>80,000-100,000	>80,000-100,000	Bachelor degree
Daniel	18-34 years	Male	>100,000-125,000	>125,000-150,000	Bachelor degree
Diane	35-54 years	Female	>60,000-80,000	>60,000-80,000	Bachelor degree
Frederick	55-64 years	Male	>100,000-125,000	>100,000-125,000	Masters degree
Harry	55-64 years	Male	>80,000-100,000	>125,000-150,000	Bachelor degree
Jackie	35-54 years	Female	>40,000-60,000	>80,000-100,000	Bachelor degree
Larry	35-54 years	Male	>100,000-125,000	>125,000-150,000	Bachelor degree
Leroy	35-54 years	Male	>100,000-125,000	>100,000-125,000	Bachelor degree
Melissa	18-34 years	Female	>40,000-60,000	>60,000-80,000	Technical diploma
Megan	18-34 years	Female	>60,000-80,000	>100,000-125,000	Bachelor degree
Rebecca	18-34 years	Female	>40,000-60,000	>100,000-125,000	Bachelor degree
Steve	35-54 years	Male	>100,000-125,000	>100,000-125,000	Technical diploma

*Participant names have been changed.

Demographic and socio-economic characteristics

Nine of the 15 participants were male. Six participants were aged between 18 and 34, six participants were aged between 35 and 54 with the remaining three participants aged between 55 and 64 years. All but two of the participants had a university degree of bachelor or higher. The remaining two participants were technically trained as an administrator and computer technician respectively. The average individual gross income was AU\$88,334 per annum. Only five participants earned less than AU\$80,000 per annum. This is well above the median personal income for people aged 15 years and over in Greater Sydney which is AU\$32,188 per annum (Australian Bureau of Statistics 2011). The average household gross income was AU\$106,000 per annum. Again, this is above the median household income for greater Sydney which is AU\$75,244. The average time each participant had worked for their current company was seven years. This average masks some variability however only one of the people I spoke to had been with her current employer for less than four years. All participants worked full-time. Twelve participants were born in Australia and spoke English as their first language, the remaining three immigrated to Australia between 12 and 36 years ago and were from non-English speaking backgrounds.

Household structure and location

All but two participants were in a long-term heterosexual relationship and lived with a partner. One unattached participant lived with his brother and a housemate, the other had been recently widowed.

Nine of the participants had children living at home ranging in age from six weeks to 32 years. One participant had children who were no longer living at home, the remaining five participants did not have children. The majority of participants with school aged children were not the primary caregiver (that is, a partner or spouse remained at home either full- or part-time to care for children).

The average time participants had lived at their current address was seven years. While again this average masks a substantial degree of variation, of note is that 12 of the 15 participants had either remained in the area where they grew up, had lived in the same area for more than 15 years or had returned to their area of upbringing. Area here is defined subjectively by the participant in response to the question usually phrased as “have you always lived in that area?” As the interview progressed it became obvious that the participant usually meant the same suburb, if not the same local government area or general locality (for example the “inner west”). This indicates that the people I spoke to are relatively stable in the location in which they live.

All participants expressed contentment with their place of residence and were able to easily articulate a number of reasons to justify why they lived where they lived. For the majority it was a matter of close proximity to family and familiarity which was often justified explicitly: “Yeah, grew up there [suburb of current residence], moved around a bit, then when we decided to buy we moved back there” (Ben). Or as: “it’s just where I’ve always lived” (Megan). All participants said they generally felt safe in their immediate neighbourhood. Only two indicated that they had chosen to live where they lived because it was close to work. One participant had actively sought to maintain a substantial distance (a one hour drive) between her home and her workplace. While some participants mentioned that affordability had influenced their actual choice of dwelling, only one participant attributed her choice of location primarily to affordability. Eleven participants owned their homes outright or were in the process of paying off a mortgage, the remaining four were renting. Eleven participants lived in a detached dwelling, three in a townhouse and one in an apartment.

Mobility behaviour

The average journey to work distance and time was 20.68 kilometres and 55 minutes respectively. Some details of existing mobility behaviour as well as the composition of each participant’s substitute trip are contained in Table 7.2.

Table 7.2: Journey to work characteristics and substitute trip composition

Participant	Current Commute Time (minutes - approximate)	Current Commute Distance (kilometres - approximate)	Composition of Substituted Trip
Anthony	25	8	Walk, Bus, Walk
Ben	95	47.5	Cycle, Train, Walk
Chrissy	55	14.6	Cycle, Train, Walk
Chris	55	19.4	Cycle, Bus, Walk
Daniel	15	3.8	Cycle
Diane	65	18.4	Cycle, Bus, Walk
Frederick	65	21.8	Walk, Train, Walk
Harry	45	15.6	Cycle, Train, Walk
Jackie	55	20.3	Cycle, Bus, Walk
Larry	85	31.3	Walk, Train, Bus, Walk
Leroy	75	30.2	Cycle, Train, Walk
Melissa	25	2.1	Walk
Megan	65	36.7	Cycle, Train, Walk
Rebecca	85	36	Cycle, Train, Bus, Walk
Steve	15	4.5	Cycle

As per the method employed for purposive sampling, all participants consistently travelled to work as a single occupant of a private vehicle. Only one participant regularly dropped children to childcare on the way to work. One participant mentioned alternating driving to work with cycling to work once a week. This pattern was in the context of training for an upcoming mass-participation cycling event and while the participant hoped to continue to ride to work occasionally after the event he explained that it was not a regular habit.

All but one participant obtained their driver's licence within six months of reaching the legal age to drive. The remaining participant obtained her licence two years after she was eligible. All participants either owned outright or were in the process of paying off

their own car. All lived in households where the number of licenced drivers matched the number of cars at home. For example Harry's household, consisting of himself, his wife and two children aged 22 and 26, has four cars. Rebecca's household consisting of herself and her boyfriend has two cars. Leroy's household, consisting of himself, his wife and their two young children has two cars. All participants subjectively described their household as being relatively car-reliant.

Ten participants lived in households where the car was used for most trips most of the time – again, "most" here is defined subjectively by the participant, however it was generally confirmed through the interview that a utilitarian trip by an alternative mode was a rare event. The remaining five participants indicated that at least one member of their household regularly used alternative transport – in most cases this referred to a child taking the bus or train to school or university. All participants indicated that the car was their main form of transport on the weekends.

There was no pattern to the type or size of cars owned by each participant. Some participants took obvious pride in their cars while others struggled to even name their car's make and model. All participants had relatively strong ideas on why they had bought that particular car – whether that was because they liked the feel of a small or large vehicle, wanted something safe and reliable, felt that their car was a 'splurge' because it was something sporty, trusted the manufacturer from previous experience or had become attached to a car that had served them well through the years.

Twelve participants had, at least once, needed to travel to their current place of employment by an alternative mode. This was usually a rare occurrence (once or twice a year) in the context of a car that needed servicing or plans to 'go for drinks' after work. Only one of the participants interviewed had ever regularly travelled to his current place of employment by an alternative mode of transport. This participant permanently replaced regular cycling to work with driving when the bike lane he used was temporarily closed for road-widening works. Many participants had, at some stage in their working career, regularly travelled to previous places of employment by

alternative transport. Usually this was when participants had worked in the Sydney central business district.

Ten of the 15 participants owned a bike. Five of these participants indicated that they ride for recreation at least once a month. Many of those owning a bike had participated in cycling events including charity rides and more competitive racing at some stage during the past year.

The substitute trip

The alternative trips prescribed through the process of trip substitution analysis were extremely variable with some details contained in Table 7.2 (see page 161). Three of the participants lived close enough to access the workplace by a single alternative mode. This was usually by cycling although one participant lived close enough to walk to work in the same time it currently takes to drive. Seven participants were able to access their workplace by two mode changes. That is, they would walk or cycle to a public transport mode and then walk from that mode of public transport to their workplace. For example, Diane's substituted trip required her to cycle three kilometres to a bus stop and catch the T65 or T66 to Parramatta where she would then walk 150 metres to work. The remaining five participants were required to undertake three or more mode or service changes. That is they would walk or cycle to a public transport mode, change to another public transport service or mode then walk from that mode of public transport to their workplace. For example, Frederick's substituted trip required that he walk 180 metres to a train station, catch the train to Central Station, change trains at Central to catch a train to Macquarie Park Station then walk 400 metres from Macquarie Park Station to work.

A more detailed description of the method for trip substitution is outlined in Chapter Five (see pages 108-122). In all cases the participant could travel to the workplace in a similar amount of time using alternative transport as it currently takes him or her to drive.

Results

Each participant currently engages in the practice of driving to work. The following section expands on the concepts derived through the process of data analysis outlined in the previous chapter. It explores the way driving to work is practised and endures to compete with the practice of using alternative modes of transport.

The Car, Flexibility and Reliability

Participants express a strong need to be flexible, available and reliable, both at work and home. Automobility is positioned as extremely instrumental in fulfilling this need.

The requirement to be on call and available at times outside of traditional working hours for off-shore meetings is not unusual. Many participants are regularly required to accommodate the demands of different time zones and businesses that operate '24/7':

Steve: The whole proviso is that we are here to support the stores. If the stores are not selling we don't have a job, all those systems, we need to make sure they're going 24/7 [pause] and that is a bit draining at times, you want to get home and not have to think about it and then the phone rings at nine or ten at night and you don't want to have to answer it. But [pause] it comes with the territory unfortunately.

For others, being respected at work requires flexibility and reliability. "Staying back late" at work is a common theme:

Megan: Sometimes you have to stay back and get the job done. You might have materials deadlines, for papers, for radio, that kind of thing. You can't just pack up and walk out. The pressure, you can feel it. Like no-one would ever say anything but you know, you hear it in the office, people who pack up at 4.00,

people who pack up at 4.30, we had a staff member in our team that used to leave every day between 4 and 4.30 every day and you'd hear comments.

Rebecca: ...my managers expect that you're flexible with your hours, they expect [pause], you know if you work back you can leave a bit earlier the next day. But yeah, we all work hard, because we all put in the hours and if one of us isn't putting in the work it wouldn't be a nice feeling, you'd lose respect.

For many participants, flexibility is not so much an outright job requirement as it is a tacit expectation. Megan and Rebecca speak about flexibility in the workplace, admitting that while it is not an explicit part of the job, it is still important for them personally to demonstrate flexibility in order to retain respect and avoid being the subject of negative office gossip. This implied expectation ties flexibility more strongly to the retention of respect simply because it is optional:

Anthony: See I can get a call during the day and it's like "no problem I'll come and see you this afternoon", you know, or "whatever time you like". And I like that. I like that flexibility. It's part of my work and it happens quite a bit. "Look, you know, don't worry about coming in, I'll come out and see you on the way home". And you get a lot of gratitude and kudos for that from the people.

For Anthony, the ability to impress clients by bending his time around their demands gives him "kudos". Again, the ability to see his clients on demand is not a direct requirement of his role, however an unexpected gesture of responsiveness and flexibility is appreciated. Anthony is not alone in that many participants express the idea that they have a lot to gain by being flexible. Ways to increase flexibility and availability are therefore valuable. In this context, the relatively rigid timetables and the notorious unpredictability of alternative transport modes are impediments to its uptake. The autonomy afforded by the car, however, supports the demands of flexibility, reliability and availability.

Jennifer: Why do you drive?

Larry: Because [pause] well, I'd have to be at Parramatta at a particular time to get the shuttle bus and leave at a particular time to get it back and I find that

restrictive if something's going on and I need to keep working. It's either beg, borrow or steal a cab charge to get back to Parramatta or say, "no sorry, can't keep working, I have to go home". It gives me the flexibility and flexibility is important. It's a bit rude too, to stand up half way through a meeting and say "no, I have to catch a train", I don't want to do that to people. They would be flexible for me if I needed it.

Jennifer: You were saying something before about sitting in a meeting and having to, um, to go [pause].

Megan: Absolutely. And that was a big thing for [Megan's husband] and me, is that you don't want to be known as the person who turns around and says "oh, I have to go at five" or "I have to go at 5.30" [to catch a train] that sort of thing. And like next year, with me stepping up to the manager's role as well, you don't want to be sitting there saying "sorry team, I have to go now". You just know that it's not acceptable.

Rebecca: And then in the evenings if I had to stay back. It gives you more freedom when you have a car because I can leave at any time, when the job is done [pause] if there was something going down that was quite vital and you had to stay back, it would not be well received if I said "sorry, my bus is here and I can't stay" - it wouldn't be very good career wise.

Larry, Megan and Rebecca all use a narrative as they imagine themselves in the situation of not having the flexibility to come and go in accordance with demands of work. They place this inflexibility in the context of it somehow eroding their credibility – Larry goes so far as to call it rude, while Rebecca says it would impact her career. Megan brings up the idea of not wanting to be “known as the person” who is unable to be flexible at work. This implies a distinction between the other (train user) and the person who is now “stepping up to the manager’s role”.

The car is seen as not only instrumental in facilitating reliability to be flexible and “stay back late” but also in ensuring what is perceived to be a relatively dependable arrival time. Steve is a regular recreational cyclist. His day invariably starts with a

management meeting at 8am. He usually chairs this meeting. Prior to the meeting he needs to review any problems experienced the night before, a process which requires 40 minutes to an hour to complete. As a cyclist, he knows the roads and feels comfortable on a bike. One of his major concerns riding the 4.5 kilometres between home and work is the idea that he could be late.

Jennifer: It sounds like the first three hours of your day are pretty full on.

Steve: They are, very busy.

Jennifer: And is it almost like, if you ride [a bike] in here, it's just another thing [pause]

Steve: Yeah, it's just another thing and I don't want to be running late and not having an idea of what's happened. Because I expect people to come into the meeting and be able to report on what they've done, I don't think it's acceptable if I go into the meeting and I'm not prepared.

Steve assumes that riding a bike to work is less reliable than driving. If he were to be late he would be undermining the expectations he transposes to his team to be able “to report on what they’ve done”.

Ben imagines the way his social life might be without the flexibility and reliability of the car:

Jennifer: Do you think having your car to get from A to B, can you imagine doing all the things you do after work, you know, tennis and soccer, things like that, if you didn't drive in here?

Ben: No. I mean, I guess, there are some of the guys at soccer that do [pause], but they probably don't come out as consistently as me or anything like that.

Ben's identity as a sociable person comes across strongly. He commits to a busy schedule of social activities around work, including a weekly after work soccer match. When asked whether he could maintain this schedule without driving to work, he compares that possibility with “some of the guys at soccer that do” who are not as consistent (reliable) as he is in showing up.

For Leroy, driving has given him the flexibility to take a job outside of the Sydney central business district which means he can live where he wants while continuing to earn a wage that allowed him and his wife to have a second child and maintain “a certain lifestyle”:

Leroy: I mean, the perfect job for me would have been to stay closer to town at the end of the day, but obviously [pause] I would have had to take a pay cut, I wasn't prepared to do that.

Jennifer: So in a way it [working outside of the city] allowed [Leroy's wife] to stay at home at this time, whereas if you had have been less flexible, like about where you work, and taken a pay cut to work in the city she might not have been able to do that?

Leroy: Yeah, yeah you're right. I mean, to be honest we would have had to think harder about the second child. We are set up for a certain lifestyle and you build your lifestyle around your income.

In many ways, participants' expressed appreciation of the flexibility and reliability associated with the car resonates with the avoidance of dis-utilities such as lost time or income. These sentiments reflect utilitarian research, for example, on the value of time or value of reliability (for example Brownstone and Small 2005). The people I interviewed demonstrate this in a very real sense by describing the way the car enables them to attain standards of flexibility and reliability expected by their employment.

The appreciation of the flexibility of the car was also expressed in the way automobility imparts various freedoms such as the choice to live in one part of the city and work in another. This is an appreciation of the car's speed and inherent ability to overcome constraints of time and distance. Employing Hägerstrand's time geography perspective (1970 and 1973) it demonstrates the way automobility has the capacity to widen an individual's space time prism and thus augment associated opportunities.

For many, however, the car's flexibility was as much about avoiding a 'loss of face' associated with not being seen as flexible by their work colleagues or friends. This

resonates with psycho-social research (such as that by Murtagh et al. 2012) indicating that the car is also associated with prestige, social norms and identities such as being a team player.

These individual pursuits to minimise disutilities, overcome constraints and maintain various identities are also linked to an array of social and technical structures and systems. These include the cultural acceptance of long and flexible work hours, and a built environment that separates work and home by distances that only the car can accommodate. This demonstrates the way the car can be viewed as a self-reinforcing socio-technical system (Sheller and Urry 2006; Paterson 2007).

The car's association with flexibility and reliability demonstrates the way automobility is both negotiated by the agent and structured by systemisation. For the people I interviewed, the car minimises disutility associated with complex negotiations of time and space ("I can leave at any time, when the job is done"). Further, it maintains various identities ("They would be flexible for me if I needed it"). It is also very much a part of culturally accepted ways of working and structurally required ways of being mobile. It is this complex convergence of individual negotiations and structural provision that maintains automobility.

Delving deeper into this relatively simplistic duality of structure and agency, the milieu of "skills, images and materials" (Shove and Pantzar 2005, 58) that combine to form the elements of the practice of driving to work become apparent. Steve's rushed morning, combining skills of stress management, presentation and organisation, images of respectability and preparedness, and materials such as the car to get to the office, and the freshly-ironed shirt that he wears to present his summary, are all intermingled elements of practice that, in their inextricability, demonstrate the imposition that a bike ride to work would pose. The actual material object of the car plays only one role in this practice and a shift to alternative transport would require a more complex transition than that conceptualised by simply 'leaving the car at home'. It would require new skills of, for example, packing clothes and preparedness, as well as the skills required to physically ride the bike. New images would be established,

perhaps of Steve presenting to colleagues as a more relaxed manager who can afford the time and energy to ride into work, who dares think of anything but performing his role in the most efficient and expeditious way. It would inevitably require different materials, such as the bike itself, as well as the towel, toiletries, coat hangers and dirty clothes associated with getting ready for work in the office change rooms.

The way participants associate flexibility and reliability with automobility has been used here to traverse the spectrum of ways that mobility practices have been theorised to date. Utilitarian and affective individual motivations embedded within the system of the new mobilities paradigm preceded a more comprehensive conceptualisation of automobility sustained by elements of practice. The following section goes on to review other ways automobility sustains resistance to alternative transport modes.

Freedom and Control

Although regularly punctuated with experiences of traffic and delays, the way participants spoke of their use of the car for the journey to work was more often characterised by a dialogue of freedom. “Taking my back roads”, for example, was a common practice. Participants often expressed pride in their ability to master the traffic as well as a sense of ownership over the various combinations of streets that play host to their journey to work.

By negotiating the trip, choosing which route to take each morning, embarking on suburban explorations at will and avoiding traffic, participants are exercising freedom and taking control. This resonates with psycho-social research indicating that empowerment and mastery are central to motives for automobility (Steg 2005; Mann and Abraham 2006; Gardner and Abraham 2007) and has also been the subject of cultural research on the “tactics” of contemporary everyday life (Katz 2000, 36).

Chris: I guess part of it is being in control to an extent because I know if I’m driving, I know what’s going to happen. Like I said before, if I see the M2 is

slow, I will take an alternative route, I know I'll still be able to get there within a specific time.

Harry: Sitting in the traffic is frustrating but once I go past the bridge I'm happy, I can do my back roads.

Anthony: I like all parts of the journey, the fact that you're moving around and it's taking you to places you wouldn't normally get to and things, and I'll often take a detour. Like even on my short trip home I'll think to myself "I've never been down that street, I think I'll have a look" and that's what the car can do, if you're on the bus you have no choice. That's the thing I like about it, "let's just see what's going on down there" sort of thing. I'm a bit of an explorer. And I get to do that in the car.

Echoing Urry's (2008) proposal that car use is inextricably linked to its "24-hour availability" (119), many participants perceived control over time as a motivation for car use:

Diane: [on public transport] I hate the timetabling, I like to go when I'm going and not "oh my god I have to sit here and wait another 12 minutes".

Jennifer: So, you said the cost is something that prevents you from thinking about public transport?

Frederick: That's why. Apart from the independence, to say, well, what time do I have to leave to go to catch the train in the morning.

Melissa: I don't want to catch a bus to work...There was, when we moved from [previous location] to here, there was a bus service set up and they [Melissa's employer] had a service we could use and they had specific buses that went from here to Blacktown, Parramatta, Pennant Hills, [pause] yeah, they organised bus travel. And there were a few services I could have used. But, yeah, I was already having to go somewhere new and I didn't want to be restricted to their times as well. So I still drove.

Melissa's comment is particularly interesting in the context of her wanting independence from "their times". This is expressing a desire for freedom and autonomy, not only from the timetable but also from the demands of her employer.

Speed and Efficiency (time)

Time is often regarded as a major barrier to the uptake of alternative transport in that walking, cycling and public transport use is usually positioned as taking more time than driving (see for example Newman (2003); on walking; Winters et al. (2010) on cycling and Corpuz (2007) on public transport). If the car dominates travel choice it is because it allows people fast access the destinations they want to access. It allows people to save time.

Time is portrayed across a range of discipline areas as something that the individual needs to save. It has a latent social power (Harvey 1990, 226). Modern life is regularly portrayed as time obsessed (Bauman 2001) where snippets of time are scheduled to extreme degrees (Bauman 2000; Honore 2004; Tranter 2010).

Transport is about the navigation of space and time. The new mobilities paradigm implicates the car in the canonisation of time, describing automobility's unfulfilled promise of extreme space-time compression (Urry 2008, see also Harvey and Braun 1996). Utilitarian perspectives also treat transport time as a disutility that needs to be minimised. In addition, time budgets, and their micromanagement are at the heart of a time geography approach to transport behaviour.

Participants in this study did not appear to be any less time-stressed than the observations of theorists from Harvey (1990) to Bauman (2001) suggest. Many were required to work long hours and had commitments to family and other time-consuming interests outside of work, including study and secondary employment. They described practices of micro-managing time. These included using time on the weekends to cook the approaching week's dinners (Diane), "squeezing in" an evening run between dinner and bed (Steve), laying out clothes for the gym the night before

(Megan), eating breakfast on the run (Rebecca) and choosing to wear a work uniform on the days when there was no time to iron a shirt (Dan).

Time is conceptualised in a variety of ways by the participants - time waiting, time lost, time saved, time given, time taken, time spent. First and foremost, however, time is treated as a currency of high value and something that should not be wasted. Ben, for example, describes the way he cherishes spare time to spend with his six week old baby boy:

Ben: I guess, every little minute that you get now, even if it's just sitting down talking, sitting down watching TV together, sitting down with the boy, just holding him sort of thing, it's just precious. Time is precious.

This study's approach to participant selection attempted to remove time as a barrier to alternative transport by ensuring that each participant could travel to work by alternative modes in the same amount of time as it currently takes him or her to drive. In introducing the alternative trip to each participant I stressed the way the proposed trip would take the same amount of time as the current car-based trip. I often went to great lengths to describe the different components of the trip, explaining how long each component would take, the structure of the timetables and the way connections between modes would work. As described in Chapter Six, ground truthing the trips myself enabled me to do this.

Refuting utilitarian models of transport behaviour, which stress time as a key determinant of transport mode choice, participants tended to cite the car as a device to *administer* time rather than save it. Time as a barrier to alternative transport use was often viewed in quite an irrational and vague way:

Anthony: For some reason the bus doesn't grab me and I think it's just the time. It's not that it'd be longer because I know it wouldn't. It's the restriction – I want to be able to leave without looking at a timetable [pause] and then there's that idea that I want my space [pause], it's lots of things.

Diane: It's not that it'd take longer [by train], I know it'd be quicker most of the time. I think that a lot of the time where it comes from is that fact that when you're stuck in a train you feel as though you're not going to be where you need to be, even though that doesn't apply because I would always leave, you know, well and truly on time so I always make sure I have plenty of time. But I think that's what it generates from is the fact that you can't move. You know, you're stuck. I hate being stuck, where there's nowhere to go.

Using alternative transport was considered an inferior way to spend time when compared with time driving:

Dan: Yeah, to get anywhere I personally want to go [by public transport] it becomes a combination of three plus types. But not in a convenient way, like you have to wait for the train. And that waiting is frustrating, time sitting around. Even if it's the same time to drive, it's annoying.

Rebecca: Yeah, like, I know it's going to be the same time, but it's not how I want to spend my time, on a train or whatever.

Regardless of my efforts to 'remove' time's impact, it continued to feature strongly in the way the participants spoke about their choice to drive. It was not that the car is necessarily perceived as faster than alternative transport, it was that the participants perceive time taken on trains, buses, or walking and cycling, as more of an investment, more frustrating, less comfortable and more disempowering than the time they spend in their car. This persisted to the extent that some participants even indicated they did not mind if driving to work actually took more time than the use of alternative transport. Frederick compares his 65 minute alternative trip with the time it currently takes him to drive:

Frederick: I remember, a long time ago, I used to catch the train to work. It was really busy, people always trying to find their way, and people trying to squeeze in, sometimes the door shuts too early. ..So then I think about taking my car, even if it's about 1 hour, 1 hour 15 minutes, I don't care. I think, ah, it's fine I

have the air conditioning, I listen to a bit of music, best of the 80s, the news from ABC.

It was more important to participants to spend their time being comfortable, experiencing a sense of empowerment from the autonomy provided by the private car than 'wasting' their time by, for example, waiting for bus connections or dealing with crowded public transport.

This finding has vast implications for transport policy based on making alternative transport time-competitive with automobility. The pursuit of such policy reveals a serious misunderstanding of the complexity inherent to transport behaviour. I suggest that people will not only avoid using alternative transport because it is not time competitive, they may actually sacrifice time to be auto-mobile. The implications of this finding are further discussed at the conclusion of this chapter and throughout Chapters Eight and Nine.

Action

Diane's statement above that she "hates being stuck" is indicative of the yearning many participants had to be continually on the move – to have action.

Many of the people I spoke with described the way they take alternative routes to work which may take just as long if not longer but which are preferable because at least "it's flowing traffic as opposed to "stop"":

Diane: Yeah, look, there's still traffic but it's flowing traffic, as opposed to "stop" - I hate stopped traffic. So it might take me a little bit longer to get around there but you feel as though you're doing better because you're not stopped.

Larry: I get to a particular point [in my journey to work] and say "if I go this way I'll avoid the traffic". There is a back way I can go, it's a longer route but you're moving rather than crawling and stuck in traffic.

Often this appreciation for movement was in the context of experiences of the opposite when using alternative transport:

Chris: As a general rule the M2 will at least crawl along, so you've got this sense of progress, you're not stuck in traffic, like on a bus.

Jennifer: So if you're driving [pause]?

Diane: I'm fine, because I'd have that control to speed up, slow down, take a different route, if I think that's going to get me there quicker or even if it just keeps me moving. So I suppose, maybe [pause] um, than when you're stuck [on the bus], you've got no option, nothing else to focus on, except the idiot in front of you or the lights, or you know [pause]

This desire for physical movement and a sense of action has been recognised in the literature in the context of automobility (see Sheller 2004). It is as though the rush of modern life has momentum, making stillness uncomfortable when it finally comes. In a way, this relates to the discussion of freedom and control above in that car use fulfils a yearning to move autonomously. However this identified need for action is slightly nuanced in that it is simply a need to move, or to avoid stillness, rather than necessarily move autonomously. It is a desire for a sensory experience fulfilled by the car. This need to move forward is also possibly indicative of a wider desire and yearning for agency, an almost competitive need to get ahead. Again, Diane expresses this clearly as “feeling as though you're doing better because you're not stopped” and Chris mentions having “this sense of progress”. This was not always the case, however. For others it was simply felt good to be on the move:

Larry: I just enjoy controlling a car and driving, like for relaxation I might go for a drive somewhere on the weekend.

Anthony expresses similar sensations, comparing his late wife's appreciation of dwelling in place with his enjoyment of “moving around”:

Anthony: I like all parts of the journey, the fact that you're moving around and it's taking you to places you wouldn't normally get to and things [pause] and I'll often take a detour, even on the way home from work.

Car Love

For many it is not only the sense of motion that makes car use attractive. Some participants displayed interest in the material object of the car:

Anthony: [describing his new car] It's actually a smart car, but it's called a four four, so it's a four door smart car so it's bigger than the little squashy ones that you'll often associate with a smart car, but it's cool, great design, fun, very zippy, it has a turbo, 1.6 engine, very efficient, really well designed and yeah, just good fun to drive.

Ben described getting his car back from the panel beaters after an accident in more emotive terms:

Ben: Yeah, it's definitely absence makes the heart grow fonder and, yeah, got it back last Friday and it's so good to be back in that car [laughs].

Jennifer: So what do you like about this particular car?

Ben: Comfort, I like the dash, V8, acceleration, umm, the styling, the look of it. I like everything about it!

Steve links his appreciation of speed and movement directly to the mechanics of the car:

Jennifer: You were saying last time you would come into work in a better mood when you could drive fast, can you expand on that at all?

Steve: I think it's just the sensation of speed, driving fast, and yeah, the whole speed thing really, it releases the adrenaline. I get a buzz out of it, it kick starts the adrenaline. Part of it is that you are probably doing something you shouldn't be doing, and that you're a little bit on the edge, it gives you that

buzz.

Jennifer: Do you like the mechanics of the car?

Steve: Yeah, for sure. If it was a boring car that couldn't go fast it wouldn't be so exciting. I guess that it's a fast car, and one that handles well, it's a driver's car, and that makes it more fun.

Others take a lot of pride in maintaining their car in good condition:

Frederick: My car is a Magna, '01. It's well maintained, I keep my car good, it's still got the good kilometres per litre, very reliable. I have had it for years, we've travelled a long way together.

Most people could articulate clear reasons why they drive their particular car, indicating an appreciation of the car as a relatively important investment. Participants had a good level of general knowledge about cars in that they could name the benefits of different car types and knew about fuel consumption:

Jackie: I'm a big fan of little cars because I can't drive properly and I can't park! But they're also cheaper and better for the environment.

Melissa: [On her car] It just goes, [pause] just goes. We look after it, we service it, it keeps going and going and going. So when we found one that was the same model and everything and it had low kilometres, that's why we bought it. We have two cars that are both the same.

While material gain was important to many of my study participants, they did not generally indicate that the car itself was an 'object' of status. This is contrary to research on the psycho-social benefits of car use based on material prestige (Steg et al. 2001; Hiscock et al. 2002). It is also divergent from the proposal of the new mobilities paradigm that the car is often placed as the ultimate status symbol in contemporary society (Urry 2008, 116). While some participants took obvious pride in and gained enjoyment from the object of the car, this was not expressed in the context of it being important to them to be seen to own an expensive car.

Despite participants demonstrating a high level of car reliance, the car was generally perceived as an object of utility rather than desire. The car's value was more strongly related to its ability to facilitate flexibility, reliability and freedom (see for example pages 164-172). This confirms emergent research suggesting that cultural attachments to the object of the car might be waning (Cohen 2012). Objects such as 'smart' phones and 'tablets' are often implicated as replacing the role of the car in fulfilling desires for self-expression in contemporary culture (Bilton 2011, Davis 2011).

It is possible however that while the materiality of the car may have been decoupled from its long standing relationship with prestige and status, it has not yet been removed from its similarly enduring relationship with utility. This does not discount the unquestionable symbolism of the car in modern life, it simply suggests that it is perhaps no longer the object of the car that is symbolic as much as it is the autonomous mobility it enables.

This finding presents problems for those relying on a cultural rejection of the object of the car to spawn transition away from automobility. While young people today may display a lack of enthusiasm for driving (instead relying on smart phones and tablets for sociability), "members of this cohort will probably acquire a personal vehicle as they get older" (Cohen 2012, 383-384). A cultural affiliation with automobility may well continue in the face of a (relative) cultural rejection of the object of the car.

Cost

Although participants were relatively comfortable with the suggestion that the way they negotiate life is reliant on the car, only three could convincingly calculate the cost of driving to work. Others generally only factored in the cost of fuel and tolls and it was common for participants to make vague reference to "wear and tear":

Chris: Um, well, let's see. Based on about 11 litres to 100k, which is a bit general with the fuel economy side of things and then the toll, it's like \$10 a day for the toll, and I tried to work it out a fortnight and I can't remember what

it was. So, it's 40km a day, times five, that's \$210 a week, with tolls, plus some wear and tear [pause] I can't remember.

Chrissy: I guess I spend about \$40 on fuel a week, so it's pretty cheap, plus I don't pay anything for tolls. Oh yeah, and wear and tear, whatever that is.

This attitude has been confirmed by other research which suggests that people generally only equate the cost of fuel with the cost of running a car (for example Wardman et al. 2001 and Gatersleben and Appleton 2007).

Cost, however, was regularly cited as an impediment to using alternative transport to get to work. Alternative transport was generally considered more expensive than driving because participants could only conceptualise using alternative transport in the context that they would maintain their existing car for use outside of the journey to work:

Frederick: I remember that it's [catching the train] expensive, in terms of how much it would cost. Because on fuel I spend around \$35 a week which is not bad because I am a good driver.

Jackie: With the public transport, for me I have looked at it but it's too costly, because I have a small car, it's cheaper to drive than it would cost me to get public transport, possibly if I add the M2 tolls it might add up, but I'm not sure.

On page 162, I indicated that all participants live in households where the number of cars equal the number of licenced drivers. The idea of forfeiting one of these vehicles for alternative transport to work was not openly considered by the participants during the interviews. The car used by the participant to get to work is obviously important for other practices undertaken outside of work and was often described as integral to the general running of the household. I asked each participant to briefly describe the way the car was used outside of work and in the context of other vehicles in the household. Most participants could justify having a second (or third and in one case fourth) car in terms not only related to the journey to work:

Megan: We started out with just one car when we moved out to try and do that. But as you get more and more pressure and more and more projects put on you at work it just wasn't working for us. Also, weekends were quite hard, if I played sport and my husband played sport and we weren't going in the same direction we sort of [pause] plus lots of our friends don't live in [Megan's suburb], they'll live in Windsor or something like that so there's really no-one here going past our way. So it wasn't working for us, so unfortunately, as much as we didn't want to do it because of the cost and all that sort of thing we had to get a second car.

Again this indicates the way the car is perceived as an obligatory accessory to modern life and one that is deeply engrained in the way participants define what is normal. Leroy's comment sums this up:

Leroy: Yeah, the only thing might be that we'll always be a two car family, so if you leave the car at home it's just sitting there.

This relates to the discussion on cost as an incentive to change in Chapter Two (pages 38-42). Research to date confirms that up to a certain threshold, the practice of driving a car is relatively insensitive to changes in price, meaning that a relatively substantial increase in the cost of driving is required before behaviour change will ensue (Cools et al. 2011). If it is perceived that the household's second car will be maintained even in the context that it is not used for the journey to work, the cost incentive for the participant to take alternative transport is limited – as Chrissy said “even cost wise, it's not even cheaper”. Behaviour change programs based on cost as a motivator need to conceptualise the cost saving explicitly in the context of the household forfeiting a car rather than simply reducing the use of that car.

Comfort

The idea that alternative transport modes are perceived as uncomfortable surfaced persistently throughout the interviews. Comfort here is defined broadly and is used to

describe *physical comfort* (for example protected from the weather), *convenience of travel* (for example, not having to wait for connecting bus services), *a private space* (for example shielded from having to physically touch other people) and *a sense of spatial and temporal control over the journey* (for example being able to remain in a comfort zone by taking certain routes at certain times). These components of comfort emerged through data analysis and are expressed in Figure 7.1 below. A model comfortable journey is one where we are warm, can go directly from home to work, do not have to be physically near other people and are able to change the route we use when we feel like it.

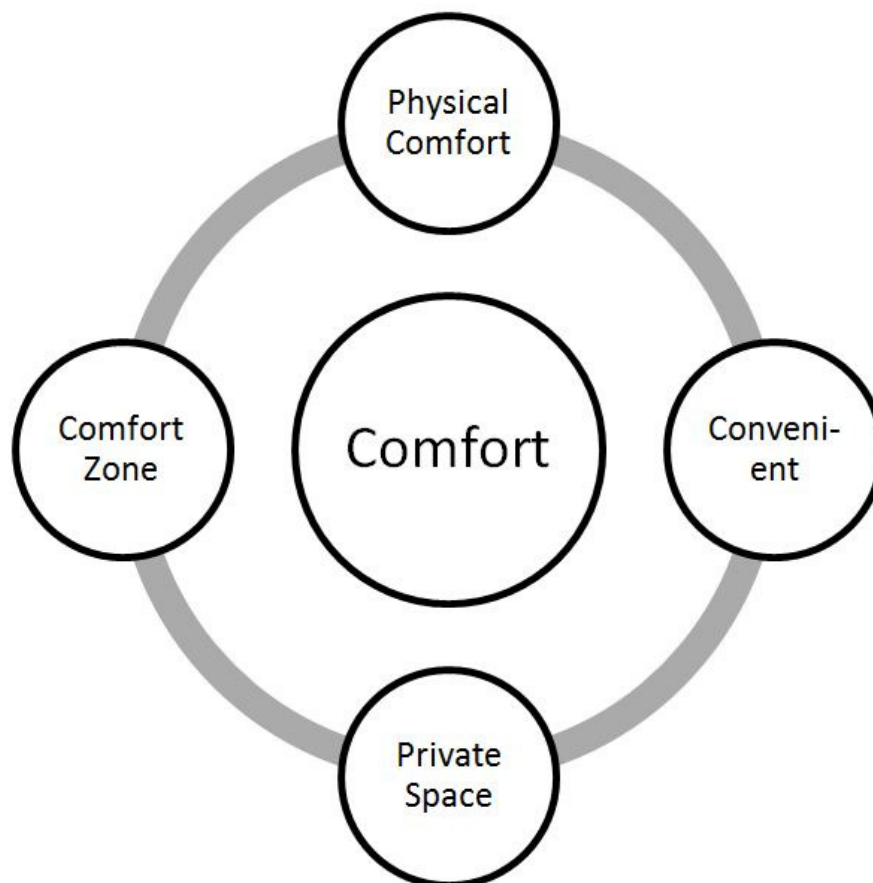


Figure 7.1: A model of comfort

The way participants spoke about car use as motivated by comfort contributed substantially to the emphasis on sensibility and meaning as elements of practice

outlined in my theoretical position articulated in Chapter Four (see page 90). Using the framework provided by the model above, this section goes on to detail many different components of comfort and discomfort as they relate to car use compared with the use of alternative transport.

On the discomfort of alternative transport

It's 'just one more thing':

The experience of transport related discomfort was often discussed as a preventable addition to a series of unavoidable hassles inevitably experienced in the course of modern life:

Frederick: ..in terms of viability, it [alternative transport] would get me to work. But in terms of comfort, I really prefer the car. I am being selfish because I am in my car and on my own..... In life, we have so many stressful situations. And it is not stressful for me to drive.

Diane: You'd have to work it [catching the bus] out, and that's more time, more brain power needed to try and work out how to do it. And that's brain power I don't have left over with everything else that's going on.

Discomfort as "too many people":

To travel in discomfort is to endure a sense of close proximity to strangers, to be with people you wouldn't normally choose to be with, to be out in the weather, to have to climb over people and be "squashed together" (Ben). Many participants describe the crowding, the smells, the sounds and sensations of other people and other environments associated with alternative transport which are often then compared

unfavourably to the privacy and controlled space of the car. Both Chrissy and Frederick describe the way they subjectively value personal space:

Chrissy: I don't like to be close to people. I like my personal space. Winter is not so bad although it can get stuffy on the trains, but in summer it's very unpleasant, particularly if people don't use deodorant.

Frederick: I think that personal space is important. It's like a cat, they own their space and they look after it. Of course, when you are sitting close to someone else you are doing your own business. But when the transport is really crowded you get uncomfortable. Also, there's another thing, [pause] the people that have loud music! Even when they have the headphones you can hear the music because it's so loud. So, that type of thing, I just find it uncomfortable.

Larry and Jackie also reflect on the discomfort associated with crowding, making direct comparisons of the way they feel in the car to previous times in their lives when they've used alternative transport:

Larry: When I was going into the city there were a lot of times when I caught public transport. But then there were a lot of times when the trains were crowded, the weather was crappy, there were just days when you think "nah, I don't want to do this". Sitting in the car, I rarely get that feeling.

Jackie: Pre-children days, when I was single, I was the public transport queen but then I just remember that it wasn't comfortable. I remember having to stand up and there were always hot and sweaty people. But when you're in the car you have the aircon, you can listen to the radio, it's just a lot more comfortable.

Discomfort as inconvenience:

Many of the people I spoke to want convenience of travel itself (as opposed to the idea of convenience as being flexible or able to come and go as you please as discussed

above). Driving was often labelled the best way simply because it was perceived to be the “easiest way” (Chrissy). If driving is the easiest way, alternative transport is very much positioned by participants as something that is difficult. Ben for example works through the details of an alternative transport trip that I described to him. The trip consisted of riding a bike to a train station and catching the train to work:

Ben: Actually, I've started riding [for recreation]. I'm doing the City to Gong [charity bike ride] this weekend, so I started to train. Yeah, I like the idea of it, but, [pause], I could just picture the logistics of carrying the bike on the train, taking it up the stairs to the platform, carrying it back up, that'd be a difficult part to it I think.

Ben perceives the idea of physically having to carry the bike upstairs as a “difficult part” of the trip. Not the ride itself but the inconvenience of having to carry and manage the material object of the bike.

This need to use ‘things’ in an alien way, or the need to simply have to deal with objects, is a common deterrent to the use of active transport, primarily cycling (Daley et al. 2007). The helmets, clothes, bikes, bike locks, towels and toiletries are all deemed inconveniences that need to be dealt with before the trip can be considered concluded. They are all “just another thing”:

Jennifer: So, what do you think stops you riding in more?

Dan: Probably also having to wear a helmet to be honest, that's a big barrier to riding more. The helmet is just another thing, one more thing when I get to work to worry about.

While Dan, a regular cyclist, sees the helmet as a bothersome barrier to riding to work, non-cyclist Diane was extremely concerned about having to change clothes:

Diane: Oh because by the time I got here I'd have to have another shower, so no. I can't see myself wearing a skirt and you know [pause] to me it would create more, there'd be more to do you'd have to pack your work clothes, oh forget it!

Steve is also a keen cyclist and had a more detailed appreciation of the material implications of a ride to work:

Jennifer: What stops you doing it [riding to work] more?

Steve: Just my schedule, things I have to do. And it's painful to have to come into the change rooms, have a shower, bring in my gear, all that. Yeah, that adds more time than if I have a shower get changed and things at home. But it also takes more effort to get organised, packing my bag, making sure I have a change of clothes, getting my shoes and that sort of stuff, prepare, make sure I carry my towel [pause] that's the painful part.... so it's just easier to drive from home. It's only four or five kilometres.

The inconvenience of having to change modes or transfer between the same mode was also a common theme. If participants could catch “just one train” between home and work, they would be more inclined to do so than to combine modes or change between trains or buses.

Larry: If I could get a train from [Larry's home suburb] and get off at [Larry's workplace], then I would probably do it. Like the city, if it's home to the city, bang, I'm there, I would do it.

Discomfort as danger:

For many participants, alternative transport was perceived as uncomfortable because it is unsafe. This was most often expressed in the context of cycling.

Participant's safety concerns around cycling generally echo those found in the research examining links between perceptions of safety and alternative transport (for example Pucher 2001; Pucher et al. 2010; Winters et al. 2010; Wahlgren and Schantz 2012). Participants unanimously expressed a preference for off road or at least segregated bike lanes. Anthony, Melissa and Megan all recounted stories of times they'd sighted near misses and accidents as strong deterrents.

Anthony: I've seen some close calls, you know, in my driving where there's been abuse by driver and cyclist and I am thinking it's not worth that hassle. And I know of people who have been knocked over and so on and had injuries from riding on main roads. I'm just aware of that safety issue...I don't mind riding on the roads around where I live, but to get anywhere I need to go on main roads and I don't want to ride on those roads.

Melissa: [on her main reason for not owning a bike] Safety. I see too many cyclists [pause] yeah, every other week you see a cyclist nearly get hit. When someone doesn't see them, or someone doesn't look, or they're doing something stupid by weaving in and out.

Megan: [on her main reason for not riding for transport] Safety. My husband would love to cycle, but you just can't do it. Not without lighting or kerb and gutter, there's no cycleway, it's really dangerous. I guess it comes from seeing someone being hit on that road. I saw a cyclist hit, about 12 months ago. My heart just sort of went "that could have been [Megan's husband]".

Rebecca conceptualised safety as an issue for cycling in the context of safety from crime:

Rebecca: I do like the sound [pause] I do like the sound of it [riding for transport]. I have a bicycle that I would want to ride more. I would be uncertain about leaving my bicycle at some places, like Redfern Station. I would have to get a second bike that I wouldn't worry about being stolen. Yeah, I don't know how I'd feel about that.

Rebecca's sense that travelling by bike would expose her to crime has been confirmed by other research, such as the qualitative study by Daley et al. (2007) which found safety from crime to be a key deterrent to cycling for transport, particularly for women.

Chris talks about using a new cycle route, put in place when a more direct segregated bike lane was replaced with a third car lane:

Chris: And then there was the issue of [pause] there was some places that were back streets and suburban streets and that's fine. I tried it once, and there was some places where you push out onto a main road and they put you on the footpath and call it a dedicated cycle lane but it's not very wide. So I thought there was a safety issue there and yeah, never again. You know, kids on there, someone walking their dog, you know they can take up pretty much all of the footpath. And if you're moving along at something like 15 or 20 ks an hour, you don't have the opportunity to stop, it's just dangerous.

In general, there was fairly strong support for cycling as a recreational pursuit. As discussed, most people owned a bike. Others planned to buy one in the future. This support again echoes other research indicating that Australians are interested in and enjoy cycling (Bauman et al. 2008; Bauman et al. 2012). However it also indicates that an interest in recreational cycling does not necessarily translate directly to the use of the bike as a mode of transport. The people I spoke to demonstrated this in a number of ways.

Rebecca's comments regarding her bike being stolen are particularly interesting. Rebecca's boyfriend bought her a Papillion ladies' town bike for Christmas. She describes her bike as "not really a serious bike, it's a girls bike, more a pretty bike, a retro bike". She estimates it would have cost around \$1,000. Older-style town bikes, such as Papillion bikes, are becoming increasingly popular, particularly among young women. Rebecca's concern with riding her bike for transport, however, is that it might get stolen. This is important in that the increased association of bikes with popular culture, particularly in younger generations, again may not easily translate to increased riding for transport, including the use of the bike for the journey to work. One potential reason for this is that the people spending a lot of money on attractive, fashionable bikes may not feel comfortable leaving them at their destination.

Dan's attitude to cycling for recreation is also revealing in the context of translating recreational cycling into use of the bike for transport. Dan is a bike fanatic. He owns

four different bikes and regularly rides for recreation. He is obviously comfortable riding a bike, however his description of a recreational ride is as follows:

Dan: A lot of the time I'll put the bike in the back of the car and drive down to the start of the M7 and ride along the M7 cycleway because along Windsor Road there's no shoulder and along Norwest Boulevard there's not safe places to ride, so it's easiest to drive to the cycleway and then ride along that.

Frederick, Jackie and Melissa, three of the five participants who do not currently own bikes, also indicated that they had recently considered buying a bike to ride for recreation. As Melissa explains, this would involve driving with the bike in the back of the car to a specific place for riding:

Melissa: We have thought about it. But then we were thinking well we'd have to find somewhere to ride safely and drive there, you know, Parramatta Park, somewhere. So it would be recreational rather than a transport thing.

The issue of safety is not only a deterrent to cycling. Some participants indicated they would not feel comfortable walking around the streets that formed parts of their substituted trip, particularly after work and in the dark:

Jackie: If I was coming in later, I wouldn't want to walk home from that bus stop. It's just the safety. In the day time it's ok, but then at night I would get a bit nervous.

Anthony: In terms of walking or cycling, I probably wouldn't do either of those, unless I lived really close. It's the risk at the moment, the danger, at night.

Public transport was also perceived as unsafe by many participants. Rebecca, for example, puts this in the context of working late:

Rebecca: Last night I was here [at work] til 7.30. I'm ok with that, but I wouldn't be ok with that if I had to [pause] well if I'd missed my train or, yeah, I really don't feel good taking public transport late at night by myself.

Both Jackie and Diane cite previous experiences of incidents on public transport:

Jackie: Because I'm from the country, I would catch the train a lot to Nowra when I was a student. And that was always, yeah, interesting. Because it was so long, and you'd get lots of drunks and crazy people and yeah, it wasn't that safe.

Diane: I did catch the train for ten years when I worked in the city. And I came away scarred for life because of all the idiots. I had quite a few experiences with people, icky experiences, you know, doing some not good things. And when you're on the train you can't get off. It's quite scary.

On the comfort of the car

Study participants gave quite detailed descriptions of the way they felt more comfortable in their cars. This can be seen by the way people set themselves up in the car, the way they use the car as their own comfortable private space, the way they take control and negotiate their route to work each day and, as discussed above, the way they willingly accommodate a flexible work timetable (see pages 164-168).

Ben and Chris have done this quite explicitly by indulging in the purchase of a new car when they realised they'd be taking a longer car trip to work. For Chris, it was a more practical choice, buying a car that has automatic transmission and is therefore physically easier to drive. About six months before our conversation, Ben had moved to a suburb 90 minutes from his workplace:

Jennifer: You said you bought that car, knowing that you were going to use it for this trip?

Ben: I knew I'd be driving for a long time every day. It's the first time I've bought a new car, definitely the most expensive car I've bought, almost \$50,000, so yeah. It was definitely a bit of a splurge but it was because I knew I'd be doing this drive.

The people I spoke with use their cars for many different activities, many of which require the space, privacy and physical separation provided by the car. Cars are “listening rooms”, a place to talk to the kids, listen to audio books, music and university lectures, a place to call parents and catch up with friends, a place to connect to the world, as well as a place to chill out, relax and de-stress after work:

Jennifer: The friend you drop home sometimes [pause]

Chrissy: We do that so we can meet up - it's the only time we can catch each other, on the way home, it makes it a better drive, because I get to chat to my friend.

Both Diane and Melissa use the journey home in the car as a regular time to phone elderly parents:

Diane: ... nine times out of ten I'll talk to my mother [pause] probably more of an emotional baggage time to talk to mum and all the things that have happened during the day. Yep, so generally speaking most afternoons I will call her. It's sort of, like, quality time with my mum on the phone because she lives in Concord and I don't see her much. I do that most days, I have the hands free in the car and I talk all the way home. That's probably why I don't notice the traffic.

Melissa: ... on the way home I call my Dad - my Dad is in Adelaide on his own, I speak to him every day, and usually that will be calling him on the way home in the afternoon.

Rebecca also uses her time in the car on the way home to catch up with friends and family. For her this means using online social media as well as the hands free phone:

Rebecca: On the way home I do a lot of phone calls. I might call my mum or call friends. I have been known to, if I'm really into a book, have a sneaky read at the lights, then its texts, check Facebook, pay bills using the iPad, and yeah, call friends, call my mother. I know one lady who does a lot of work while she's

driving, catches up on presentations, but I try to avoid doing too much work while driving.

Many participants used the opportunity provided by both the cocoon of the car and the (supposed!) need to concentrate on the road to listen to things. For Chris, the journey to work was a way to catch up on university lectures:

Chris: So the time I spend driving [pause]. Well, yeah, it's annoying but I'm doing a uni degree at the moment so I tend to listen to lectures. I know, I don't get to take great notes or anything but I can listen over the lectures so an hour sort of sits well with that time. I also get to do things like on the phone, I take calls, business as well as catch up with friends.

For Larry, it was time to listen to things he would otherwise not have the opportunity to experience:

Larry: Getting time to sit down and read things is a struggle. So, I listen to various lectures by various academics, I'll upload them and listen to them. The car is my space, it's my listening room, I listen to music in the car that if I played at home I'd be told to turn it off.

Diane uses the time on her way to work to catch up with the news:

Diane: Well, I use that time in the car on the way in to catch up and hear what's going on in the world before the day starts. I actually quite like it.

Anthony also uses this time to catch up with "what's going on" by listening to the radio. He has an interesting view on why he would struggle to incorporate this routine into an alternative transport trip:

Anthony: You know [pause], it's really probably the only time I listen to the radio is in the car so I catch up on what's going on. On the way to work I listen to 2UE or 2GB or one of the ABCs. I use that time to absorb what's going on in the world. It does give you, I've thought about it occasionally, you sort of have that connection. I think that's why talk back is so popular is that you have this

sort of, it's almost like a social connection of hearing what other people do and making you feel a bit better about your existence in the world because you sort of go, "oh yeah, I agree with that guy", and he's somebody like me, just phoning in, so I think there's a bit of that involved. But my kids hate it [laughs].

Jennifer: How would you feel about listening to the radio on the bus?

Anthony: I hate headphones. Plus the thing with talkback, there's something about listening to it being surrounded by all these other people – you don't want [pause] well, it's like you don't want someone else in your ear as well as next to you and in front and behind you. In the car, it's like it's just me and the people on the radio [pause] and I like that.

When asked directly whether the phone calls and other activities undertaken in the car could be performed on public transport the answer was generally negative. Both Diane and Melissa indicated that the conversations they have with their parents are private and Rebecca wondered whether she would be able to hear properly in a packed train. Larry cited the idea that the acoustics in the car were far superior to those on headphones and therefore better for listening to music. Both Rebecca and Chris mentioned that they often felt travel sick when reading on public transport. Anthony's insight that he would not want to listen to talk back radio on the bus is also extremely telling of the way the car is perceived as a very personal and private space.

Doing things in the car is not just about occupying 'dead' time. The car is also used as a place and time to zone out, to escape and reflect. For many participants, sitting in the car is actually quite enjoyable:

Ben: I've got like the blue tooth, so sometimes I'll catch up on phone calls, umm, but yeah, a lot of the time, it's just listening to music, so it's good to get an hour or two of sitting back, and [pause] yeah.

Anthony: ...you know, I enjoy it. I don't mind sitting in the car. Actually, I like sitting in the car and yeah, that's my primary motivation.

Other participants relished the opportunity to find some space and time that is their own, a gap between the work self and the home self:

Jackie: It's a chance to have a chat with the kids on the way [to child care]. It's also, when I drop them off, it's the only time in the day, driving from childcare to work, that I'll have time to myself. It's good me time.

Dan: When I was working at Pennant Hills and living at Glenwood it was a 40 minute trip home and I actually felt after the drive home you've got out of work mode by the time you got home. Even though it's not a particularly relaxing drive it gets you out of that mindset of being at work.

Steve: Yeah, it's a time to switch off. And relax a bit. Especially if there's been a lot of incidents that day, yeah, definitely. It's important. It's a break.

These sentiments are by no means unique to this research. The gap created by the commute and the cocoon of privacy provided by the car is well studied (for example see Redmond and Mokhtarian 2001; Bull 2007; Jain and Lyons 2008; Laurier et al. 2008; Basmajian 2010) as is the ability to use the travel time in the car for various activities, including the “ ‘anti-activity’ of relaxing” (Urry 2006, 360).

Contrary to previous research on journey-based affect (McManus et al. 2005; Paez and Whalen 2010, Lajeunesse and Rodríguez 2012), participants rarely conceptualised an alternative trip as having benefits such as being able to use the time on a train or bus or finding a walking or cycling trip more peaceful. One exception is Leroy who describes his daily 15 minute walk from where he parks his car to his office:

Leroy: The walk is relaxing, after the drive, I don't mind it. And I mean, I'm not getting too much exercise as well outside of work so yeah, half an hour walk a day, it's not bad. I try to pick the route where there's less traffic, coming in through a residential area where there's not so many cars. So that's the route that I take and yeah, I mean, you see people there, people walking dogs, others walking, and you say hello, so it's nice. I see the same people, same time, a nod of acknowledgement. It's only small things. It's just a nice walk, I enjoy it. Rainy days it's not quite as enjoyable but I'm always prepared with the umbrella so it's ok.

Leroy's description resonates with the findings of Lajeunesse and Rodríguez (2012) who found that walkers and cyclists were more likely to find their commute satisfying and peaceful. While Leroy obviously enjoyed his walk from his car to the office, his response to the proposed alternative trip involving a walk to the station to catch a train was very negative. Although the distance and time walking was similar, his stated barriers to the alternative trip were having to pack and change clothes, endure the rain and hot sweaty days and that there are "some strange people on buses and trains sometimes". It's as though a walk preceded by a car trip is something alternative yet pleasant and therefore easily justifiable. To place the walk in the context of a trip entirely devoid of the personal space of the car removes this enjoyment. Fifteen minutes of being out and about walking can be endured when the trip is enveloped by the sanctuary of the car. If this refuge is removed, however, the walk becomes something more threatening and far less pleasant. This sentiment relates to the idea of the discomfort associated with alternative transport as being "just one more thing". Larry's reaction demonstrates the cumulative discomfort associated with a multi-modal alternative transport trip.

The Car and 'Feeling Normal'

There was evidence that some of the people I spoke to would feel uncomfortable using alternative transport because it was not a normal thing to do. This evidence supports a large body of psycho-social research exploring the way the car is inextricably tied to notions of social and subjective norm (for example de Groot and Steg 2007).

The way the need to adhere to the timetables which are associated with public transport use constrain identities of 'team player' has already been discussed above (see pages 166-167). It was implied that 'the other' takes public transport while "the manager" drives a car:

Megan: Absolutely. And that was a big thing for [Megan's husband] and me, is that you don't want to be known as the person who turns around and says "oh, I have to go at 5" or "I have to go at 5.30" [to catch a train] that sort of thing.

And like next year, with me stepping up to the manager's role as well, you don't want to be sitting there saying "sorry team, I have to go now". You just know that it's not acceptable.

Many of the people I spoke to mentioned explicitly that they did not feel like alternative transport was salient to their identity:

Jennifer: So if you read a study saying people who use alternative transport on a regular basis are healthier than those who drive, would that make you consider it?

Melissa: I'd believe it, and go, "hmmm yeah, but that isn't what I do".

Rebecca: I would like the idea of it [catching the train to work] but practicalities, and yeah, it's just not me.

Leroy makes this more explicit:

Leroy: You know, the bus service is good, there's a good train service too from Central to Parra. It's fairly convenient. But yeah, when I think about it, there are some strange people on trains and buses!

Harry also associates the use of alternative transport with abnormality:

Harry: When I was at uni, I had this professor you know, who used to cycle, and I always thought he was a bit nutty, you know, "why ride a bicycle?!"

Both Larry and Harry expressed a sentiment of pity for people using alternative transport:

Larry: I feel sorry for people, as I drive past, people waiting in the hot sun or the pouring rain, waiting for buses.

Harry: Sometimes when I come to work and I look at bus stops and there's 20 people there waiting and I think I could stop and pick up some of them, because they're coming into work too, waiting on Concord Road, people coming here to work, you know, just having to wait and I am just driving by.

Presentation

Participants often expressed the idea that the use of alternative transport would impact negatively on their physical presentation. Diane's emotive reaction is indicative:

Diane: The hair! There is no way I would wear a bike helmet and you know have your hair like that, [pause] no that wouldn't happen for me and, oh, the makeup! [laughs]. But seriously, how I go to work is not conducive to riding a bike. Like, what I wear, makeup, hair, everything. We are a corporate here so I am expected to turn up to work professionally presented and that wouldn't happen if I had to ride a bike.

Megan had similar sentiments, however she places her desire to look “professional” directly in the context of wanting to fit in with her team:

Megan: We have a certain standard of dress in marketing and it can sometimes be a bit competitive I guess. You want to look professional at work and that takes time and effort – I couldn't do it down in the change rooms [pause] not that I'm really into make-up and things but it just wouldn't work.

Others were worried about arriving at work or client visits looking sweaty:

Chris: Yeah, when they shut down the bike lane the alternative path that they put in was all hills, tight turns on cycle paths. The ride was harder, and I didn't want to come to work looking like a mess, so I started driving instead.

Dan: If we had a casual day or whatever, like I'm in my uniform today, but otherwise I wear business attire. If we were just wearing jeans and a t-shirt I would just ride to work. But we can't do that here, it's just not acceptable. Plus, I'd have to re-do my hair when I got to work [laughs] yeah, I know, it's a reality.

It is interesting that Dan, the avid cyclist, associates the idea of riding to work with “casual day”. It is as though he can't associate riding to work with a serious, everyday

normal activity. Instead, it is something fun to do, as a one off, but not a regular way for him to get about.

For others it is a matter of simply not wanting to be seen by work colleagues, or wanting to see work colleagues, in non-work attire. Melissa and Steve were not only concerned about looking unpresentable but also about somehow blurring the boundaries between the way they present at work and the way they present outside of work:

Jennifer: Can you imagine what it might be like for you to walk to work?

Melissa: Friends of mine used to and they live out this way. They'd walk here and have a shower here. But, um, no, I haven't [pause] I haven't because I'm not a member of the gym here. And so, the showers that they use, that I would have to use, I wouldn't [pause] they're too communal. I like to arrive ready for work, I couldn't get ready at work. It's funny, I have clothes for home and clothes for work and I don't like to mix them up - even when we have mufti day or whatever, I feel uncomfortable.

Jennifer: If more people in the office rode into work? Would that make you consider doing it more too?

Steve: No, not really. It would mean the change rooms were more crowded. And there's nothing worse than seeing your 70 year old boss walking around the change rooms in his undies, it's just not what you need [laughs]. But seriously, I would find it uncomfortable for me to see him at work, or him to see me, you know, in anything but our work attire.

This is potentially indicative of a desire to keep work and home life as separate as possible which can be linked to a need for autonomy. This need is further discussed in the following chapter.

Habit

A large body of research demonstrates the way that car use is strongly attached to habit (Domarchi et al. 2008; Eriksson et al. 2008b; Thøgersen and Moller 2008; Kerr et al. 2010; Chen and Chao 2011). Studies of transport behaviour based on psycho-social theories such as the TIB often emphasise the role of automatic associations shaped by routine application of behaviour in predicting travel choice (for example Bamberg and Schmidt 2003).

From a sociological perspective, this describes the way automobility submerges itself into the “background” (Wittgenstein for example as discussed in Searle 1983), Bourdieu’s *habitus* (Bourdieu 1990b) or Sheller’s “cultural landscape” (Sheller 2012, 185). It is the non-representational “familiarity with the world that enables us to make sense of things” (Dreyfus and Hall 1992, 2). And the precognitive or non-cognitive nature of the things we do before knowing we are doing them (Thrift 1996). The role of habit as endowing life with predictability, and the way this sustains automobility, will be discussed in detail in the following chapter. The focus in this section is more on the way automobility has been conceptualised as sustained simply because it is automatic and unthinking.

As demonstrated by Larry and Steve’s parking behaviours, for many participants, the car and driving had become a way to practise routines and a site of habit:

Larry: I generally park in the same spot these days so if I get here late and park somewhere else I often get lost, get out and go where's my car. But generally the same spot.

Jennifer: Do you normally park in the same spot?

Steve: Yeah actually, if I can.

Jennifer: Exactly the same spot?

Steve: Yeah, exactly.

Jennifer: So, you said, “if I can”. Is it designated as your spot?

Steve: Well, no. Not officially – it’s first come first served here so we don’t have our own parking spots. But it is mine, because I always park there and people

know that and I guess they always park in their spots too, so it all just works out.

Diane also describes a routine performed in the car:

Diane: Yeah, I put my lipstick on while I'm waiting at the Churchill lights every morning, it's a ritual.

The majority of the people I spoke with were overtly aware that automobility had become a habit:

Diane: [driving to work is] not that much of a problem. I think it's just the ritual of it, it's just what I do. You know, you get in the car, you go to work.

Frederick: For me driving to work is just something I do. I don't think about it and it doesn't bother me at all.

Others explained the way the habit had become ingrained over time so that it felt natural:

Rebecca: But I am pretty used to it [driving to work]. Because I've been doing it for a long time, it [the commute] doesn't seem to be like a long time, doesn't feel like a long time, it's natural.

Jennifer: Do you always go the same way?

Leroy: Routine yeah. I mean, I've got used to driving this far now.

Some participants were aware that their resistance to alternative transport was based on it being unfamiliar and not something they habitually did:

Rebecca: But then catching the bus, I guess it's something I haven't done much so maybe that's why I'm not comfortable with it.

Others spoke about habit in the context of the way it would impact their ability to shift to alternative transport:

Melissa: I think I am just so used to having a car now, that public transport would be hard [pause] I mean I would give it a go, because I might save some money on petrol and stuff. But to do it all the time, it would be hard to change.

Jennifer: The idea of personal space [pause]

Diane: I like it, yeah. I think probably it comes from the fact that now I've had it. And I think that once you've had something you don't want to give it up. When you start driving to work you don't want to go back.

Leroy, a property developer, explicitly recognises the power of habit in a professional as well as personal context. He describes the impact of the lag time between the land release and provision of public transport to his latest development:

Leroy: It's a major development but it's not big enough to influence regional infrastructure. Trying to bring in that infrastructure is so expensive, you just can't do it. So when you're trying to get people in the mind set of using public transport when they move in they have time to get used to driving and once you're into that pattern, the habit is established. They won't go back.

The Role of Parking and Infrastructure

Once the series of interviews had been completed, I spent some time onsite exploring each participant's workplace. I paid particular attention to parking arrangements. Eleven participants had free access to onsite car parking, with five of these participants enjoying valet parking. The remaining four participants either paid for parking close to their workplace or parked some distance from the workplace and walked the remaining part of the trip.

Most participants felt that car parking was an entitlement. A common sentiment was that if parking were not provided, the employer would be seen as uncaring or unsupportive. Four participants mentioned that they would even consider changing jobs if parking were not supplied. Chrissy's comment was not unusual:

Chrissy: Yeah, parking's free. If I had to pay for parking I would seriously consider moving jobs because we have to work out here, out in the middle of nowhere, and I think you just expect parking.

The issue of parking demonstrates the way car use is deeply embedded in notions of what the people I interviewed consider to be normal ways of working. Restrictions to parking are often used in policies to deter car use, in spite of research suggesting that unless viable alternatives to driving are provided people are more likely to change their parking location rather than travel mode (Transportation Research Board 2005; Marsden 2006). The strategy has had varying degrees of success when implemented in the workplace. Brockman and Fox (2011) for example analysed the impact of the introduction of a restricted and paid parking scheme on travel mode to work. Over the nine years of the study, driving to work decreased from 50 per cent to 33 per cent. While a 17 per cent decrease in car use is an accomplishment, it is possible that over nine years employee turnover may explain some of this decrease. In this sense, the restriction of parking may not have changed existing habits but prevented new ones from forming. Based on the theory of identity under threat put forward by Murtagh et al. (2011) and reviewed in Chapter Two (see pages 45-47), it is possible these initiatives could alienate existing employees and potentially induce deeper attachments to car use. This theory may go some way to explain the seemingly irrational behaviour of paying substantial amounts for parking once it has been removed. Diane for example pays AU\$12 a day for parking near her office:

Diane: No, we don't have parking here and that is very very bad. I have never worked anywhere where they don't supply parking. It doesn't stop me driving in here, but it does make my trip to work more expensive!

Intentions to Change?

The final theme to be discussed in this chapter is that of motivations to change. At the conclusion of each participant's second interview, I asked participants directly about what they think might encourage them to use alternative transport. We discussed

different scenarios, including awareness of the health benefits associated with active transport, the environmental damage associated with driving, the cost of the car and the perceptions of others both at home and at work. These scenarios provided a platform for further discussion of motivations and intentions to change.

None of the participants were motivated to change by the idea that using alternative transport might allow them to be more physically active. A typical response was that they would prefer to exercise in some other way. Dan for example says that he “would rather drive home from work and then go for a ride, a proper ride”. Steve, another avid cyclist, had similar sentiments:

Jennifer: If it was 20 kilometres [to ride to work] would you think about doing it?

Steve: Yeah, it would be a better ride, it would be a training ride. As opposed to 6 or 7 ks where you get on the bike, pedal a little bit and then that's it.

Steve went on to explain that his time riding for recreation on the weekends is “time for myself, and the time to switch off as well”. He was concerned that combining cycling with the trip to work would detract from the idea of cycling being a break for him. Again, this relates to a longing for a gap between home and work and the desire to keep home and work identities separate. Automobility plays an important role in facilitating this gap.

Returning to the question of whether increased physical activity might motivate alternative transport uptake, other participants indicated they'd prefer to go to the gym (Melissa), play social sport (Ben), go hiking (Larry), go for a walk with the dog (Diane and Frederick) or do physical activity with a partner, friend or colleague (Chrissy and Megan) before they would consider integrating physical activity into the journey to work.

Only two participants indicated that they would be motivated to contemplate the uptake of alternative transport if “everybody else was doing it”. Both participants mentioned that they would feel guilty if they continued to drive while others used alternative transport. Other participants clarified that this scenario meant that their

trip remained the same in terms of distance, time, cost and access to parking. Many participants commented that this would actually be a good situation for them because it would mean car parking would be more available and traffic around the workplace would be reduced - "Stick everybody else on there!" (Diane).

At the conclusion of the second interview, I posed a final set of questions often used in psycho-social research and loosely based on the TPB (Ajzen 1991, see page 62). According to this theory, a change in intention precedes a change in behaviour. Intention to change is determined by attitude (whether it's a good or bad thing), subjective norm (what other people think), ease of use (whether it would be easy to do) and stated intention.

The structured format usually followed by psycho-social studies to measure switching intention was abandoned here to enable discursive reflections more suited to an in-depth interview. In summary, however, participants were asked to either agree or disagree with the following statements:

- a. "Taking alternative transport is a good thing to do";
- b. "People who are important to me would say that I should take alternative transport"
- c. "Using alternative transport would be easy for me"; and
- d. "I intend to stop driving my car to work and take alternative transport".

Most participants acknowledged that "taking alternative transport is a good thing to do", however this was usually clarified with a statement such as "but it wouldn't be good for me to do it" (Melissa) or "it's just not there for me" (Megan) or "I agree, it's a good thing to do, not for me, but it is good" (Diane). All 15 participants answered negatively to scenarios b, c and d. This response indicates little evidence of stated intention to change transport behaviour, despite awareness of an alternative.

Conclusion

This chapter has explored barriers to alternative transport as expressed and experienced by 15 people who drive to work, despite having access to time-competitive alternatives. They live in a low-density city and work outside of that city's core employment district.

The chapter started by providing an in-depth introduction to the study participants. A picture was depicted of a group of people who are relatively privileged. There were some demographic differences between participants, however all earn above the average wage when compared to the general population in their city and seem to lead stable work lives. They have all grown up with automobility and continue to be relatively reliant on the car to navigate life.

A number of themes were used to describe articulated and observed barriers to alternative transport. These themes were developed using the methods outlined in the previous chapter. Notions of the car's ability to provide flexibility, reliability, freedom, control, comfort and routine featured strongly. The role that cost might play in maintaining automobility was also discussed, as was an apparent appreciation of the car as not so much an object of desire but as a tool for life. The final theme was the idea that to drive is to be normal. This was expressed both in the context of the 'other' who does not drive and also through the car's role in the maintenance of certain standards of physical presentation.

The findings were compared to those of existing research throughout. The overarching conclusion from these comparisons is generally that the barriers articulated are similar to those accepted in existing literature. There were, however, some inconsistencies. These include participant perceptions of the prestige associated with the object of the car, as well as a very strong participant disinclination to translate their cycling for recreation into cycling for transport. The most striking area of inconsistency, however, relates to participant perceptions of time.

In multiple regulatory and academic arenas, time is regarded as a major barrier to the uptake of alternative transport. Walking, cycling and public transport use are usually positioned as taking more time than driving. This study's approach to participant selection attempted to remove time as a barrier by ensuring that each participant could travel to work by alternative modes in the same amount of time as it currently takes to drive. Nevertheless, time continued to feature strongly in the way the participants spoke about their choice to drive. It was concluded that time taken using alternative transport was perceived very differently to time spent in a car. This persisted to the extent that some participants even indicated they did not mind if driving to work actually took more time than the use of alternative transport. It was more important to spend time being comfortable and empowered by the autonomy provided by the private car than 'waste' time by, for example, waiting for bus connections, sitting in a crowded train or dealing with the objects needed to walk or cycle to work.

This perspective on time broadens existing research on journey-based affect and utility. Such research suggests that time in the car is perceived as useful and can be an emotionally positive experience. My findings confirm this notion. The people to whom I spoke used their cars for various activities and found the journey an emotionally positive experience. My findings further suggest, however, that participants did not perceive time taken to use alternative transport as useful or emotionally supportive. While many acknowledged that it would be appealing to be able to read on the train or use transport as a way to be physically active, the use of the car as a place of comfort and retreat was consistently considered a superior way to use travel time. The clear message was that time in the car is not only enjoyable but also useful, and time using alternative transport is not only wasted but also relatively unpleasant. To an extent, it doesn't matter whether an alternative transport trip is faster than the same trip undertaken in the comfort and security of the car. This finding has vast implications for transport policy based on making alternative transport time-competitive with automobility. Any pursuit of such policy would indicate a dire underestimation of the

complexity of mobility. If people are willing to sacrifice time to be auto-mobile, any effect these policies might have is questionable.

Where there were inconsistencies between my findings and existing research, a common theme was that my research suggests perceptions and practices of automobility are more complex and more embedded in participants' day-to-day negotiations of life. This complexity and embeddedness is often overlooked by research. The following chapter seeks to explore these unstated, underlying links between automobility and the navigation of modern life. Automobility is positioned here as somewhat peripheral to the way the people interviewed negotiate everyday life. Better understandings of the meanings behind automobility in daily life require a deeper exploration of what are already relatively 'thick' descriptions. This exploration requires a framework from which to hang the somewhat amorphous concept of there being a more complex link between automobility and modern life. The complexity of this relationship can be represented through the concept of ontological security. The following chapter defines a model of ontological security and uses this to further contextualise the themes outlined above.

Chapter 8: Ontological Security

Introduction

Seven years ago I was diagnosed with epilepsy. As a result, I was unable to drive for a period of 12 months. My lifestyle at the time was not particularly car-reliant – I owned a bike and was comfortable riding it, and I was accustomed to catching public transport. My day-to-day travel, however, was often by car – driving to work was just the easiest way to get there.

I initially saw the restriction as a bit of an adventure. Despite this preliminary enthusiasm, just one week into the 12 months my inner adventurer faded. I developed what I can only refer to as a sense of unease. I began to feel trapped within the confines of my apartment and my suburb. I felt ever so slightly estranged from society, as well as frustratingly dependent – on friends, family and the public transport network. Many of my day-to-day routines had to be adjusted – my weekly trip to the supermarket became a daily trip to buy only what I could manage to carry home. Spur of the moment after work dinners with my Dad became fixed in time and local. My morning run was replaced by rides to work. Lunchtime appointments became weekend events.

Nevertheless, I developed different and sometimes more enjoyable routines. I found new continuity and rhythms. I mastered the various idiosyncrasies of the bus network and started to feel comfortable wheeling my bike into the office. But this adjustment took time. And perseverance. I had never considered not being able to drive. Having a car was an implicit part of what it meant for me to live my life. I was not dependent on the car, however the autonomous mobility afforded by the car was subconsciously part of what I defined to be a normal life. I propose that the sense of unease I initially experienced was a feeling of diminished ontological security.

The previous chapter outlined the way participants in my study were physically, practically and emotionally attached to automobility. In Chapter Six, a process of selective coding was used to tie these attachments to the core concept of ontological security (pages 149-152). For the people with whom I spoke, driving and the freedom and autonomy it enables, is a defining element of how to 'be' in the world. Their resistance to alternative transport protects their way of navigating and experiencing an increasingly unpredictable modern world. It maintains their ontological security.

The following discussion outlines the basic principles of ontological security. It then reviews the role car-based autonomous mobility plays in its maintenance.

What is Ontological Security?

Being ontologically secure is having a sense that one knows how the world is and how to be in the world. It is supported by experiences of coherency, predictability, autonomy and acceptance. Ontological security provides a secure platform for the development of self-identity. It is a prerequisite for human agency and flourishing.

This conceptualisation of ontological security is generally attributed in the literature to the explorations of schizophrenia undertaken in the late 1950s and 60s by medically trained psychiatrist R.D. Laing (Little 2001; Padgett 2007). Laing's radical approach was based on a fundamental opposition to the objectivity required by medical psychiatry. He believed that its overt emphasis on scientific validation resulted in the objectification and subsequent dehumanisation of the patient (David 2010). In his first of several texts on sanity and madness, *The Divided Self* (2010 [1960]), Laing attempts to describe the process of treating the schizophrenic patient from the standpoint of his own transposition into their world which, he writes, is "lacking in any unquestionable, self-validating certainties" (Laing 2010 [1960], 39). In doing so, he developed the concept that in contrast to the schizophrenic patient, the 'well' individual has "a sense of his presence in the world as a real, alive, whole, and in a temporal sense, a continuous person" (Laing 2010 [1960], 39). Such a person will be able to face the various ups and downs in life from a secure standpoint which is, at the very least, grounded in a strong sense of "his own and other people's reality and identity" (Laing 2010 [1960], 39).

Ontological security is often described as a protective shell or 'cocoon' which we use to bracket out the uncertainties or risks associated with day-to-day life (Goffman 1959; Giddens 1991). By adopting the shell we can live free from the weight of worries of the unknown and inherently unknowable. This shell is likely developed in infancy (Giddens 1990). To feel ontologically secure, the individual is required to have a "basic trust" in the way things are (Erikson 1965, 239). Anthony Giddens (1990) cites psycho-analysts Erik Erikson and Donald Winnicott to explore the way development of basic trust is directly attributable to the very moment the infant learns to trust that the carer who is

not physically present is still assuming the role of caring. This process of learning enables the child to separate from the parent. However, and more significantly, Giddens proposes that it is in this way that we start to accept the “world as real” because we start to “learn the characteristics of absent persons and objects” (Giddens 1991, 43). We develop basic trust to subsume this uncertainty, and it is this basic trust that is so integral to the protective shell, or cocoon, of ontological security.

Of key significance is that both exogenous and endogenous influences shape ontological security (Zarakol 2010). Ontological security is something that is individually experienced and negotiated, yet the stability of the social environment plays a central part in its maintenance. Giddens places much emphasis on the way the individual purportedly senses the precariousness of social order, and develops basic trust, as an example of the cultural constitution of ontological security. He refers to this as the individual having an awareness that “behind the routines of daily life chaos lurks” (1991, 91). Day-to-day life, however, is not generally experienced as perennially in doubt because the components of the cocoon are both individually and societally maintained and shaped. This maintenance is not generally conscious, yet it indicates a mutuality of experience.

Of final importance is that ontological security is a life project. It is open to modification and revision, and it can be strengthened or lost throughout an individual’s life. It is a ‘problem’ which must be worked on – this work comprises what Giddens refers to as the “reflexive project of the self” (Giddens 1991, 5). The goal of ontological security is endlessly revised, as is the path that needs to be followed for its attainment (Bauman 2001).

Ontological Security in the Modern World

The concept of ontological security has been the focus of research on individual experiences of significant life events, such as imprisonment or the experience of a natural disaster. It has been proposed, however, that even small disturbances to

routines and other taken-for-granted social norms, can create deep-seated and long lasting ripples in ontological security (Garfinkel 1967).

More recently, the significant social, technical and economic developments characterising social organisation since the early 1980s have been theorised as augmenting the sensitivity of ontological security to disturbance. Following Giddens (1990) I label the state characterising social order in the modern world 'modernity'. Giddens (1990) proposes that until the onset of modernity, ontological security was not nearly as finely balanced. The ontological project was not a difficult task for the individual. In the 'pre-modern' world, ontological security was prescribed, if not necessarily guaranteed, by sanctuaries of tradition, religious faith and systems of face-to-face kinship (Giddens 1991). Along the extensive and eventful path from the enlightenment to the industrial revolution and beyond, old securities were diminished and replaced in part by a focus on individual autonomy. Despite the whittling away of old social structures, between the beginning of the 20th Century and the 1980s, reality remained relatively secured by structures of social class, local community and remnants of religious faith and tradition (Bauman 2001). There is no doubt that the "background of being" is changing in the modern world (Thrift 2005, 464) and that the significant social and economic changes since heralding modernity have shifted the source of 'security' in ontological security (Beck et al. 1994). The maintenance of ontological security is a harder project in the modern world than it ever used to be.

While 'modernity' is theorised as characterised by many processes, of particular relevance to this study is that its accomplice, globalisation, has engendered the de-territorialisation of time and space. Events happening elsewhere are localised and "what structures the locale is not simply that which appears on the scene" (Giddens 1990, 19). Related to the fragmentation of time and space has been its desynchronisation (Urry 2000, 128-129). For example, the slow and steady deconstruction of the routines of the working week and the total scattering of time engendered by online shopping. Ontological security requires a degree of grounding – it is "being a whole continuous person in time" and "having a sense of presence in the world" (Laing 2010 [1960], 39-41). Time-space de-territorialisation and

desynchronisation mean that continuity and presence can no longer be taken-for-granted. As a result, the modern individual is compelled to ground, or territorialise, as well as routinise his or her coherent life story in a time and place respectively (Kinnvall 2004; Bauman 2010).

Why the Concept of Ontological Security?

Ontological security is one of many psycho-social concepts suggesting that people need more than just adequate food and shelter to live happy and fulfilled lives (Hiscock et al. 2001). There are other ways to conceptualise the idea that in order to flourish an individual needs to feel secure and avoid anxiety in day-to-day life. Maslow's Hierarchy of Needs, for example, articulates the necessity for various cognitive needs of belonging, esteem and self-actualisation in addition to basic needs of security and physiological health (Maslow 1943). The concept of quality of life has also been applied to sustainability transitions to measure the impact of sustainable lifestyles on individual quality of life (Gifford and Steg 2007). Deci and Ryan's Self Determination Theory (Deci and Ryan 1985), as well as Ryff's related Model of Psychological Wellbeing (Ryff 1995) are also relevant in that they start to address the way components of functioning (such as autonomy and relatedness) pull the individual forward through life.

I have chosen to focus on ontological security because it resonates directly with the themes articulated through the data analysis described in Chapter Six (see particularly pages 136-152). In a number of ways, the concept also distinctly appeals to the theoretical statement outlined in Chapter Four (as summarised on page 90).

The first of these appeals, and of primary importance, is that ontological security is conceptualised as socially constructed – it is something that is a “seemingly instinctive yet clearly a cultural achievement” (Sheller 2004, 225). Ontological security conceptualises socially inculcated sensibility in practice and as such appeals directly to my theoretical position with its emphasis on the role of “shared, public and collective” (Sheller 2004, 226) feeling in shaping practice.

Secondly, ontological security can be applied to issues of the self as well as the social. It treats social and self as entirely interactive and embedded, implying a duality of structure and agency and reflecting a structurationist approach.

Thirdly, ontological security appeals because of its emphasis on coherency, which in turn suggests an emphasis on continuity through time and space. This coherency is broader than the concept of identity as articulated in the diverse range of literature examining the relationship between identity, self and society. Ontological security embraces a social constructivist approach in rejecting the idea of a 'core self' because it allows for the coherent life story to be narrated, constantly revised and redefined.

Fourthly, and related to this, is that ontological security provides for the individual to maintain a number of different identities throughout life and even simultaneously. The need for coherency indicates a flow of ideas, behaviours, and points of reference that are coherent throughout the life of the individual. Identity might be the label we give ourselves, however ontological security is the actual ability to give that label. This focus again references my appeal to an emphasis on the interconnected. It justifies sifting through the elements of day-to-day life for explanations of transport behaviour in an effort to look beyond the labels of identity to see the ways these identities are intertwined and 'acted out' in their dailiness.

Finally, ontological security has a distinct focus on predictability, appealing directly to my interest in routines as valuable sites of social observation in their ability to sustain practices. The value of routine in ontological security goes beyond its contribution to predictability in practice. It attributes value to the mere idea of routine in itself. Security is as related to the routine as a site of intrinsic, taken-for-granted knowledge as it is to what the routine is actually practising. This treatment of routines as valuable sites of security references my desire to maintain a conceptual 'eye' on the role of what remains 'unpractised' as much as what is embodied in practice.

Ontological Security in the Literature

Since Giddens' original theorisation of Laing's empirical work, the concept of ontological security has been used to analyse various aspects of individual behaviour and social organisation. As mentioned above, it has often been the focus of research on individual experiences of deep-seated disturbances. For example Hawkins and Maurer (2011) applied the concept of ontological security to the study of survivors of Hurricanes Katrina and Rita. They describe survivors' primary desire to restore their neighbourhoods to the way they were rather than rebuild them in a way that would be considered improved. The old neighbourhood and old routines lived within it comprised important reference points. The concept has also been applied to analysis of the experiences of survivors of Nazi concentration camps (Bettelheim 1991 [1960]) and the impact of other types of institutionalisation or imprisonment (Goffman 1959). It has also been used to examine experiences of migration (Hinton et al. 2009; Harney 2011), religious nationalism (Kinnvall 2004), civil war (Steele 2005), as well as mental and physical illness (Vigilant 2005; Padgett 2007; Danermark and Moller 2008).

Ontological security as increasingly under threat in a more everyday context has been studied from an array of angles. In his opening address to the Institute of British Geographers' 2011 conference, Chris Philo (2012) concentrates on the way security concerns increasingly permeate day-to-day life. Philo references ontological security in the context of securities of "everyday people in everyday places" (Philo 2012, 2), proposing that the ontologically insecure person experiences a sensation of being "un-placed in the 'real world'" and that this idea of being "un-placed" has received increased recent attention both culturally and academically (Philo 2012, 3). Moores (2005) has unpicked the role of media – or "mediated experience" (Giddens 1991, 4) in constructing the "dailiness" and "cyclicity" (Moores 2005, 9) that make up the predictability component of ontological security. He also proposes an emergent sense of insecurity, however highlights its relationship with an eroding away of affiliations with time rather than place. Moores (2005) suggests that the media has played an important role in grounding society in time by retaining the cycles of daily news and

other media programming. These routines of predictability are diminished by the ever expanding technologies which desynchronise media, making it continuously available.

Of most relevance to this study is the way that ontological security has been used to conceptualise attachments to the home. Here, home is understood to support ontological security through provision of the continuity of a stable foundation around which individual and collective identities can be shaped and day-to-day life routinised (Saunders 1989; Dupuis and Thorns 1998; Kearns et al. 2000; Hiscock et al. 2001). Again, the increasing tenuousness of ontological security in the face of modernity has been of interest in the analysis of attachments to home. For example, Dupuis and Thorns (1998) use ontological security to explore the idea that home provides a place free from the surveillance characterising modern life.

The literature on the relationship between autonomous mobility and ontological security is vague. This is surprising given recent conceptualisations of the car as an increasingly important place of 'dwelling' (Dant 2004; Laurier 2004; Laurier and Dant 2012) and broader literature highlighting the increasing tenuousness of autonomy and privacy in modern life (for example Bauman 2010). An exception is an extension by Hiscock et al. (Hiscock et al. 2002) of their application of the concept in the home to modes of transport. They propose that ontological security is comprised of protection, autonomy and prestige and seek to examine how cars can bestow these sensations upon their owners. The car here is very much treated as an object, with little consideration given to the idea that it is the autonomous mobility afforded by the car that supports ontological security. Further, although Hiscock et al. (2002) use empirical means to support their propositions on ontological security by drawing on data from interviews, they admit throughout their various studies to making no attempt to measure it, citing Saunders to state that ontological security is "difficult to define [and] even more difficult to operationalise" (Saunders 1989 in Hiscock et al. 2001, 52).

I agree that the subjectivity inherent to ontological security renders its quantification unhelpful, if not impossible. I do propose, however, that the concept of ontological security and its application to car use requires a more systematic elaboration than is

found in the work of Hiscock et al. (2002). The attempt here, therefore, is to break the concept down into operational themes which can then be addressed through reference to empirical data gained from the interviews I conducted on car use.

The Components of Ontological Security

I propose a model of ontological security where a sense of coherency is fundamental.

This sense of coherency is supported by three key components:

- Predictability;
- Autonomy; and
- Acceptance.

This model of ontological security is illustrated in Figure 8.1.

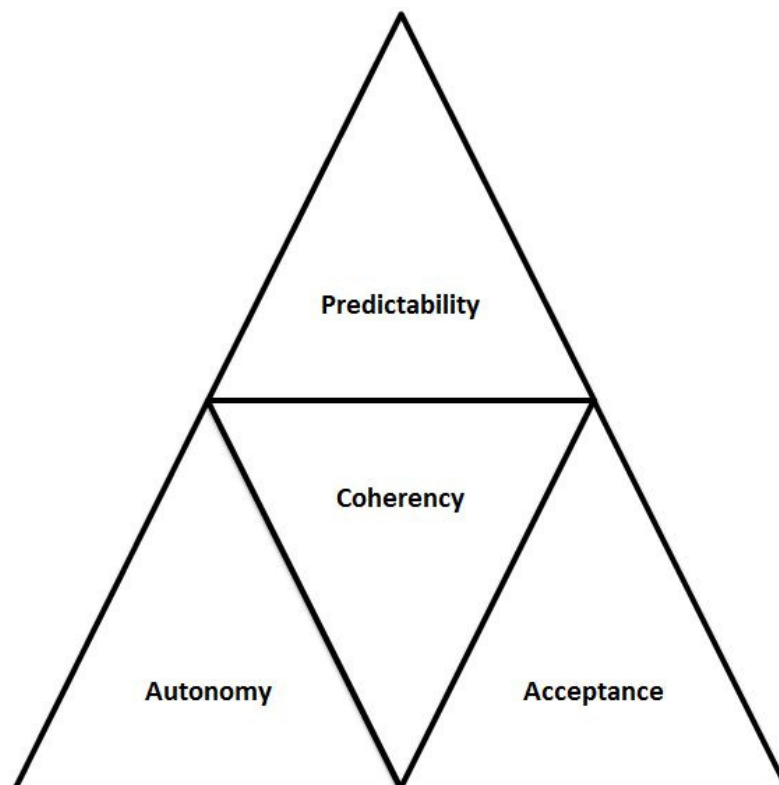


Figure 8.1: A model of ontological security

This chapter now progresses to unpack ontological security as coherency supported by predictability autonomy and acceptance. I use examples from my own data analysis to demonstrate the way study participants experience and use automobility as ontologically securing.

Coherency

Coherency is at the heart of ontological security. It is coherency, through its reference to social and cultural constructions of space and time, that most distinguishes ontological security from other theorisations of security and needs briefly discussed above. The ontologically secure individual maintains a sense of connection, logic and purpose to the different components of his or her life in both space and time. Harre and Gillet (1994) encapsulate the desirability of a coherent life when they write: “The ideal is a psychological life with the character of an artistic project and not merely a stream of experiences and responses to stimulation” (143).

Ontological security is present when an individual can construct a coherent life story which can be told to both himself and others through a biographical narrative (Kinnvall 2004). This story is based on continuity and needs to make sense at each stage of its construction (Little 2001). For example, my personal coherent story at this stage in my life is dominated by my identity as a doctoral student. Being a doctoral student is *in the present moment*, what I narrate to myself and others as the essence of what I am *doing* in the world. My identity as a doctoral student is only part of my coherent life story, however its pursuit contributes to my construction of the way my life has continuity.

The coherent life story grounds the individual by providing an attachment to time and place and provides reference points that the individual uses to evaluate various choices comprising daily life (Giddens 1991, 48). The individual is attached to the coherent life story (Garfinkel 1967). Any evaluation and experience perceived to be at odds with its continuity will be intrinsically disturbing (Sigel 1989, 459). Any shift in

behaviour requires that this sense of continuity be referenced and potentially challenged.

The components of a coherent life story are only partially defined by the individual. Coherency is reflexively defined, meaning the individual pursues coherency in accordance with an internal interpretation of what society defines coherency to be. Echoing a structurationist approach (see pages 76-78), the collective individual pursuit of reflexively-defined coherency then contributes to what society defines coherency to be, and so on. Returning to my previous example, the way I 'do' a doctoral degree is defined by various socially-constructed institutions and rules. However it is my interpretation of the requirements of these institutions and rules that determines the part that doing a doctoral degree plays in my construction of coherency.

The place of coherency in ontological security references the basic sociological idea of there being a certain 'way' for things to go on. It is the "world of daily life known in common with others and with others taken-for-granted" (Garfinkle 1967, 35). It encapsulates notions of embodied common sense (de Certeau 1984), the background (Wittgenstein 1958) and the habitus (Bourdieu 1990a). For the participants in this study, automobility is integral to coherency – it is "almost a background to the background" (Thrift 2004, 46). The car and the autonomous mobility it affords are simply parts of the flow of everyday life.

Prior to any exploration of automobility in the context of ontological security, it is imperative to dedicate space to some articulation of the things that matter to the study participants and demonstrate the ways these things are referenced to the surrounding social and material environment. This chapter now delves deeper into the nature of coherency as articulated by study participants.

"What is important to you?"

A key component of this study has been the exploration of participant resistance to alternative transport in the context of broader understandings of participant values

and aspirations. Over the series of interviews, I asked each participant the direct question “what is important to you?”. I also used other, less direct lines of questioning to explore the things that are important in life. These included allowing people to speak in detail about their daily routines and the practices they use to nurture and sustain the things that matter to them. I also asked questions about each participant’s daily frustrations and broader concerns in life. I asked about what it means for each participant to be happy, at peace and successful. As detailed in Chapter Six, a series of Importance Statements were developed as coherency themes through processes of coding and practice mapping (see pages 136-148). These themes were:

- Family
- Friends
- Happiness
- Work
- Making a Difference and Being Passionate
- Consumption
- Being Respected and Recognised

Using verbatim quotations from participant interviews, each theme will now be explored in detail.

Family

The consistent and often immediate response to the question “What is important to you?” was “Family”. Many people added friends to family and then placed their work in the context of being able to provide for and nurture family and friends. For example:

Jennifer: In your life, what is important to you?

Steve: Family is important, family is number one. Work is important because it provides for the family and it enables me to [pause] it enables me to have the things I want to have and be able to do the things I want to do. They are probably the two things.

Being happy

Another common response, following family and friends, was the idea of “being happy”:

Jennifer: What would you say in your life is important to you?

Melissa: Family, yeah, family is number one. Family, friends, being happy.

Family, being happy, friends.

Personal happiness was again often given as a reason to work, which was subsequently linked to the consumption of material goods and experiences, including shopping and vacations. It was important for the people I spoke with to be happy.

Work and “going forward”

Given the context of the interviews, work emerged as an integral component of coherency for many people. Work becomes a vehicle through which other elements of coherency can be realised. It is difficult to say whether this is as a result of the interview being conducted at work, with the interviewee aware that the subject of the study was the journey to work. In reality, however, it is undeniable that work features strongly in the lives of the people I interviewed. It is both the domain which consumes the most time as a practice in itself (that is, being engaged in the practice of working) and a fundamental component to many other practices (ranging from practices of getting dressed for work to enabling practices of consumption or caring for family).

For many study participants, the need not only to work, but to ‘get ahead’ at work is very important. This sometimes means a reluctant climb of the corporate ladder, despite clinging to romantic notions of the practical and yet now seemingly unsophisticated position originally pursued for a career. This is explained by construction manager Leroy, who was recently promoted to manage a team rather than a residential development:

Leroy: At the end of the day, I probably am not too much into management, I would prefer to be at the project level, but at the end of the day, [pause] you know you just have to, it has to happen [pause] I think from a responsibility point of view you have to step up and say, yeah, you're great at managing projects but can you manage a business? It's going forward.

Making a difference and being passionate

When discussing the way work is related to coherency, material gain was not always mentioned as the primary connection. The way work sustains feelings of accomplishment, being needed, recognised and respected, as well as a sense of “giving back” to society were also mentioned:

Diane: I've never actually said it but [pause], it is certainly my goal, here [at work], to make a difference in the world just a little bit.

Harry: When we look at the meaning of life, you sort of assist in this universe and you provide a service to society, a service, something you can do well. And that's what I do in my job [pause] I do it well.

Being respected and recognised

Many participants found it extremely important to be respected and recognised both in a work context and outside of work:

Anthony: What is important? Probably nurturing your soul, to have that other aspect, [pause] knowing that you're capable of doing something like that is like [pause], well, ice sculptures or whatever, a performance, it is done and the only thing is the memory of it, it's temporal. Whereas things like architecture [pause] I think that is a need to do something that is more permanent and that other people can see for a long time. And that is a compulsion too, to not have everything wash away with the tide but to have [pause], well, I'm not after creating monuments to myself [pause] but knowing there is something there as

a result of what you've done, or what you've tried to encourage in other people, and that [pause] yeah, that's all part of it. It is a bit of a monument in some ways to go around a suburb and say "well that suburb is like that because of my input". And to take your friends around and say "oh yeah, I know this and I know that, that building there, the owner did this and that". Just to have that physical pointer to say, "I did that" [pause] it's great.

Anthony likes the idea that his work as an architect has a sense of permanence. Again, work here is directly linked to coherency. However the built form he works to realise is also important to him because it is something tangible that "other people can see". Further, it is not just that he appreciates people being able to see it, but that he wants to be able to point it out to other people, to be able to say that something is as it is "because of my input".

For Ben, it is important to be a specialist. Again it is not just being specialised but being recognised as a specialist.

Ben: Um what does it mean to me? Um, I guess because I'm sort of specialised in this software and I've been doing it for quite a while. It is quite unique to the position that I'm in. So I think the fact that I'm a specialist, one of the few people who do this thing, and people come to me to seek advice, [pause] yeah I guess it's the feeling of being needed and things like that. I guess I do get, yeah, I guess I don't want to say ego, but [pause], it is a bit of an ego trip.

The fact that people come to Ben for advice gives him a sense that his work is recognised and this recognition is important to him.

Larry also finds it important to be respected at work:

Larry: It gives me satisfaction knowing that what I do [pause], that if I have an idea people take it on board. I feel as in the team that there's a bit of respect for what I do. I'm quite happy to get a quiet pat on the back for doing something, public acknowledgement I don't care about, but if someone says thank you I appreciate it.

The idea that respect and recognition are important exemplifies the reflexive nature of coherency in that it is very much reliant on the opinions of others. This is also expressed by Steve who openly recognises that he finds it important to have other people think well of him:

Jennifer: What do you mean by reputation?

Steve: What other people think of me and the contributions that I bring. And if my contribution is not very good then they're going to obviously not think as well of me. And it's important for me [pause] yeah, it's important that people think well of me.

The strength of the link between coherency and respect and recognition indicates that it is important for the people I spoke with to be accepted and also demonstrates the way coherency is defined both endogenously and exogenously.

Pursuing material gain

For some, material wealth is obviously integral to coherency and again work features as a vehicle to support this pursuit:

Jennifer: When you say it's important for you to set yourself up around a certain lifestyle, what are some of the things that come to mind?

Leroy: The main thing is the home, making sure you have a comfortable and safe home for the kids. Yeah, the things that come to my mind [pause] having a nice house for the kids, a garden [pause], that all costs money. We've got two cars and that costs, and, probably just entertainment, going to the movies, sport and stuff, you take the kids out. And holidays too, we probably do a winter holiday and a holiday over Christmas. Not overseas, but still it costs money.

Megan also links her work explicitly to material goods. Her work facilitates her newly built house and her holidays, which in turn give life a sense of continuity and coherency:

Jennifer: You said that it supports your lifestyle, in terms of that, what do owning your home and going on holidays mean to you?

Megan: Um, they're at the top of the list [pause] I choose to have a nice home, I guess, overseas holidays that sort of thing, at the moment. For now it's work as much as you can, progress as much as you can, get the mortgage down, and then we can do what we want! And we save, yeah, we save whatever we can save, so we can have the holidays.

Steve is similarly explicit about the value he places on material goods:

Jennifer: So the amount of hours you put in and the idea of being available 24/7 [pause]

Steve: Yeah, I get rewards out at the other end. I think the pay and the work provides the lifestyle. If I can, at the end of the work day, if I can take a step back from the pressure and responsibility and not let it worry me I guess I'm doing ok. Obviously the work is a means to an end so when it gets hard and I'm not happy I have to tell myself that it allows me to have the car, to have the house, to be able to buy the stuff I want, and it provides for the family as well, and those things are important.

In summary, the image portrayed by the participants is one where a coherent life story is defined by attention to family and friends, being respected and recognised and the pursuit of material comforts including houses, cars and holidays. Work is implicated in all of these things, whether by virtue of it being a way to earn money, a place where respect and recognition are realised or a medium through which to give back to society. Being happy also underpins this picture in that participants were often explicit about the importance of looking after the self.

This story is obviously not linear or universal to the people I interviewed. For some participants it was clear that individual accumulation of material wealth exceeded the need to support family, for others it was not work which contributed to recognition and respect but pursuits outside of work.

Over the course of the interviews I developed an understanding of the ways participants nurture coherency. I did this by asking directly about the way people practise caring for family and the way they develop relationships and respect at work. I asked for explicit details about practices of consumption and the different things they do to bring themselves and those around them happiness. I was seeking to explore the prerequisites for coherency. Through the process of data analysis outlined in Chapter Six, predictability, autonomy and social and self-acceptance were recurrent themes implicated in attending to coherency. These components have informed my model of ontological security with coherency at its heart supported by predictability, autonomy and acceptance.

The following section explores predictability, autonomy and acceptance in the context of automobility. It articulates the role automobility plays in sustaining these components of coherency and by implication ontological security.

Predictability and Routine

A key component of ontological security is confidence in the predictability and continuity of the social and material environment (Wakefield and Elliott 2000). This sense of predictability and continuity is not only important in that it is empowering, but also because it promotes the idea of living a life that has a future focus and allows for forward planning (Davies 1997). Such projection towards the future signals that the actions and behaviour involved in living have meaning.

Predictability as routine

Predictability is developed from routine. Routines provide the constancy in which identity and agency can flourish, allowing the individual to reduce anxieties or a sense of Giddens' "lurking chaos" (1991, 37) to the level of practical, rather than cognitive consciousness. The tacit and taken-for-granted nature of routines not only inoculates

us against existential anxiety, it also allows us to get on with living life (Giddens 1991, 39).

People spoke to me about the many different habits and routines that make up their day-to-day lives. Practices of caring for family, working, socialising with friends, eating and exercising were all described as being done in a regular and routinised manner. As an example, participants could describe in succinct detail the components of their morning routine as well as the steps they take to wind down after work.

For the people I spoke to, the car is a place where daily habits and routines are formed and practised. Parking, route choice, phone calls, the application of make-up, listening to specific radio programs, checking social media sites and even eating breakfast were all things routinely performed in the car or facilitated by automobility. These routines have been discussed in detail in Chapter Seven.

The idea of driving to work is a routine in itself. Diane and Frederick both describe that the practice of driving to work has been demoted to the realm of subconscious routine rather than something they think about prior to embarking on each trip:

Diane: It's like [pause] I think it's just the ritual of it [driving to work], it's just what I do. You know, you get in the car, you go to work [pause] yeah, that's it.

Frederick: For me driving to work is just something I do. I don't think about it and it doesn't bother me at all. I like it, I don't want to have to think about it every day, you know.

Modern life demands that we demote certain activities to the level of routine so that we can carry on with activities that take more cognitive energy. The comments of Diane and Frederick reflect literature suggesting that automobility has been firmly positioned within the realm of praxis - it is in the background of modern life (see, for example, Thrift 2004). For participants, automobility belongs in the background and is simultaneously one of its defining characteristics.

Predictable home and work environments

Aside from providing a space for daily routines performed in and around the car, there are other ways automobility facilitates predictability. In the introduction to participants, it was mentioned that 12 of the 15 participants had either remained in the area where they grew up, had lived in the same area for more than 15 years or had returned to their area of upbringing. Chrissy, for example, explains why she lives in the inner west:

Chrissy: I grew up in the inner west. There's a few areas I would consider around here [workplace] on the north but not enough that it would make me want to move. Like my family is all close by, so [pause] it's sort of [pause] you don't land that far from where your parents are.

Automobility plays a key role in the maintenance of predictable home and work environments. Driving to work enables participants the chance to connect where they would like to live with where they would like to work. It allows them to choose a commute time that is (subjectively) acceptable. Automobility expands the ability for people to change their employment location without moving home, or to move home without having to change employment. Leroy for example was made redundant from his city job, which was a 15 minute bus ride from where he lives with his wife and two young children. In seeking new employment he had the choice of accepting a lower-paid position in the city or a higher-paid position requiring a 75 minute commute each way. The fact that he can drive to work enabled him to take the pay rise while simultaneously maintaining a stable home life by not having to move his family. He openly admits that this decision to accept the car-dependent job enabled him to have a second child because the pay rise allowed his wife to take time off work:

Leroy: I mean, the perfect job for me would have been to stay closer to town at the end of the day, but obviously [pause] I would have had to take a pay cut, I wasn't prepared to do that.

Jennifer: So in a way it [working outside of the city] allowed [Leroy's wife] to stay at home at this time, whereas if you had have been less flexible, like about

where you work, and taken a pay cut to work in the city she might not have been able to do that?

Leroy: Yeah, yeah you're right. I mean, to be honest we would have had to think harder about the second child. We are set up for a certain lifestyle and you build your lifestyle around your income.

The way that this ability to maintain a stable home and work life fosters empowerment is further discussed below. It is also relevant here because it demonstrates the way automobility grants the option to maintain the stability of work and home environments.

Predictability as normality

Participants expressed a collective interpretation of normality. Jackie for example speaks about the societal pressure she feels to own a home and raise a family:

Jackie: It's such a thing these days don't you think? Pressure from family, from society, it's just what you do. You get a house and then you renovate it and you have kids and yeah [pause] and now I'm in the middle of it.

When explaining why she had bought a four bedroom house over 65 minutes from her work, Megan also refers to the idea that life is mapped out in a predictable way:

Megan: We were just moving to the next phase of life I guess, we had our little three bedroom house and we renovated it and did it up, that seems to be what you do when you first buy a house and we have sort of moved up and on.

The way automobility is viewed strongly as a component of normality has been discussed in Chapter Seven where it was suggested that the dominance of the car in its use for work and home life indicates that it is very much a component of 'the way things are'. The fact that the number of cars owned by participant households equalled the number of licenced drivers and the fact that most participants had obtained their driver's licence as soon as they were able is also telling. At a very practical level, the car

supports constructions and interpretations of normality that are deeply and culturally inculcated. For example, living a long way from where she works has enabled Megan to move “up to the next phase of life”. The car also enables Jackie to stretch her time around raising a family, full-time work and a home renovation. Being auto-mobile is connected to living life the way it should be lived. This is underpinned by a desire for things to be predictable, which is motivated by the need to protect ontological security.

In summary, predictability and routine are important to the pursuit of ontological security. Routine supports coherency and allows the individual spaces of ‘knowing what to do’. These spaces can then be filled with more difficult tasks that require cognitive effort. Predictability allows for a future focus and a sense of surety to the way things are and the way things work. The car supports routine and predictability on many levels, for example by providing a physical place for routines to be constructed. Autonomous mobility also protects other routines structured around place of residence and place of work. Many of these routines are strongly connected to culturally ingrained ways of living in modern life. Automobility provides a way of not only being mobile, but also attaining other life goals, such as owning a house and raising a family, that are known and ‘normal’. The sense of mastery, or ‘knowing’, that comes from routine and predictability relates directly to autonomy and control and discussion now turns to this component of ontological security.

Autonomy

Ontological security requires both the safety implied by routine and the invigoration often accompanying change. Blind commitment to routine and aversion to change are markers of insecurity. The autonomy to learn, develop and create is required for ontological security, as is the autonomy to take control and develop a sense of mastery (Mitzen 2006). This autonomy is just as necessary to the maintenance of ontological security as the habits and routines that make up predictability (Little 2001).

Autonomy as mastery

Many participants indicated that they enjoyed their work because they felt like they were good at it and knew what they were doing. Work is an activity that fosters a sense of mastery. Dan, for example, speaks about what he likes about his job:

Jennifer: Do you enjoy your work?

Dan: Yeah [pause], a lot of the time in big companies you get caught up in things that are secondary to your main job, but by and large I like the work. I feel like I know what I'm doing.

Melissa and Larry express similar sentiments:

Jennifer: Would you say you like what you do?

Melissa: I think so. Actually [pause] I love it. I don't know, getting things done, knowing how to do things [pause]

Jennifer: So, your work?

Larry: Yeah, I like it because I like being able to teach people things that I know.

Mastery, or 'knowing what to do', is a key component of ontological security and automobility supports this in a number of ways.

Firstly, and as discussed in detail in Chapter Six, automobility is fundamental to ways of working that are flexible and reliable. For many people, being flexible and reliable is essential to doing a good job in a competitive working environment. It is the car that enables spur-of-the-moment client visits, unpredictable workflows, attendance at work-related events outside working hours, as well as the ability to maintain a reliable presence at work while caring for children and partners.

Secondly, automobility is simply the way people know how to get around. It is the way to be mobile "known in common with others and with others taken-for-granted" (Garfinkel 1967, 35). It is very much a part of 'the way things are' and for many people who have grown up in low-density car-reliant cities, it is the only way they have ever really mastered being mobile. Participants often indicated that they did not feel

comfortable using alternative transport because they did not know how to use it. Rebecca, for example, admitted that her resistance to taking the bus was partly based on the fact that it is unfamiliar. Diane also spoke negatively about all the things she would have to learn and “work out” to be able to replace her car trip with a bike and bus trip. Jackie speaks in detail about the discomfort of not knowing bus etiquette:

Jackie: And I also remember, just a little thing, but it really used to stress me out! I'd always stand up the back of the bus because you know how you are meant to stand up for old people? And I worked with a lady once, and this was when I was young, so I had a different perspective. But I was about 20 and she was probably about 50, and I remember she came in one day and she was devastated because a young girl had stood up for her. So I was always thinking "Should I stand up for them? Is it going to offend them? Do they look old enough to really stand up for?" So I was like, just sit right up the back so I don't have to make that choice. Yeah, it's silly, but things like that used to be very stressful for me.

Adhering to existing ways of being mobile gives people a sense of mastery. To abandon it and have to learn a new way of being mobile inevitably involves a period of diminished security.

Autonomy as freedom

Autonomy can also be conceptualised as having freedom. Larry, for example, finds it important to be free to live where he wants to live:

Jennifer: Have you ever considered moving closer [to work]?

Larry: No, I live where I want to live and I work where the work is. I don't understand people that go "this is where I'll work [and] this is where I'll buy a house" because it might not be the area they want to live in.

The car is obviously then required to support this freedom because it allows Larry to bridge the gap it creates between home and work. In Larry's case, this gap is an 85 minute drive each morning and evening.

Automobility, by definition, is having freedom. It is about being autonomously mobile - able to move independently and to come and go where and when one wants. Barriers to the uptake of alternative transport conceptualised as a loss of freedom and control have been explored in detail in previous chapters. In Chapters Two and Three, the car's association with freedom in cultural texts such as film, music, popular literature and advertisements was discussed, as was the link between capitalistic structures of production, automobility and individual freedom. In Chapter Seven, it was confirmed that for study participants, freedom from timetables, fixed routes, unwanted social interaction and headphones were all implicated as valued elements of car use. It was also established that the time taken on alternative transport, particularly time waiting for public transport, is perceived to be more disempowering and more of an intrusion on freedom than time spent in cars. Linking these various freedoms inherent to automobility with ontological security enables conceptualisation of why the freedom of the car is so enticing and in many ways considered an essential entitlement in modern life.

Freedom from...

My conceptualisation of autonomy follows Kearns et al. (2000) to propose that it is both "freedom *to* and freedom *from*" (Kearns et al. 2000, 120, emphasis added). Ontological security requires freedom from surveillance for the individual to be able to develop away from the expectations of others. Basically, the individual needs a break or a space where the tensions built up in daily life can be relieved and the power "to erect partitions between the self and the gaze of the outside world" (Brown 2000, 63). Jeremy Bentham studied the impact of institutionalisation on the individual (Bozovic 1995) and his subsequent attraction to surveillance as punishment has since been applied to the modern world by Erving Goffman (1961) and Michel Foucault (1979).

Foucault's vision of Bentham's 'Panopticon' – the institution that can see all - suggests that constant surveillance, or more importantly the perception of being constantly surveyed, is the ultimate form of disempowerment of the individual. In another extreme but telling example, Little (2001) proposes that the basic aim of the Nazi treatment of the prisoner during the Second World War was to destroy the prisoner's ontological security by an aggressive program of uniformity. The dehumanisation of the prisoner, deprived of clothes, hair, language and any other identifiable feature comprised the essence of Nazi torment (Ferme 2001).

The car itself provides a space to escape - a place of 'freedom from'. It is a place to relax and be oneself. Participants described the way they use the car as time out, a "time to zone out" (Chrissy), "good me time" (Jackie), and a place where we can "get out of the mindset of being at work" (Dan). The car also provides a space that is personal and personalised, a place we can own ("like a cat" – Frederick) and a place where we are not forced to interact.

Again, it is not only the physical cocoon of the car that provides this 'freedom from'. It is also the autonomous mobility afforded by the car. During our second interview, Anthony admitted that he likes having the car at work because "I tend to want to go every now and then". In his stressful job, Anthony likes the freedom, afforded by both the car and the seniority of his position, to be able to leave the office during the day at whim. He uses this time to undertake site visits and attend to other work related duties. However what is important to him is that he is able to be free from the office if he wants to be. The car, therefore, provides actual space to partition people from the 'gaze' of society and also the physical movement to be able to escape this gaze.

Acceptance

Ontological security needs the self to be viewed positively in regards to others (Hiscock et al. 2002, 120). Coherency is reflexively defined, meaning the individual pursues it in accordance with his or her interpretation of what society defines coherency to be. While the individual's interpretation is key to ontological security in that it promotes

autonomy, rationalisation of this interpretation with the social is similarly fundamental. It is the explicit conceptualisation of ontological security as a product (in part) of seeking social acceptance that gives the concept a deeper connection to collective social and cultural patterns than the traditional psychological concepts related to the exogenous and endogenous development of the individual (Little 2001). The individual here not only shapes action in relation to social and cultural context, but context becomes a benchmark.

The role of automobility in satisfying the need for acceptance is exhibited in a number of ways, including the desire for a sense of belonging and approval, the pursuit of prestige and status, as well as the intrinsic need to regulate the self and by implication maintain a sense of self-acceptance.

Acceptance as a sense of belonging

Similar to the duality of the human desire for both predictability and freedom mentioned above, it is an irony of the concept of ontological security (and perhaps characteristic to humanity generally) that we simultaneously yearn for autonomy and sense of belonging. Bauman refers to this as “a dream of belonging and a dream of self-assertion” (2010, 64).

Study participants certainly demonstrated a need to fit in, belong and interact with other people. This was often made explicit in discussions of the concept of working from home. Many participants had the option to work from home, however none of those with the option accepted it on a full-time basis. Frederick explains:

Frederick: The interaction with peers, it's quite important, you cannot rely on the phone, or e-mail or chat, particularly because you have to share ideas and so forth and that doesn't lend itself too much to work full-time from home. Some days maybe, but it has to be mixed. Same with teaching, you have to have the interaction with the students, sometimes it's all over the internet. It has to be students talking with each other. To build the team, people need to

do things together, because when people do things together it gives you ownership, and you interact, it's part of you. It is part of people, to be together.

Harry had a similar story:

Jennifer: Does the distance bother you?

Harry: No, I think it's just that [pause] I like coming to work, because we've got the opportunity to work from home, and I can do that and I do maybe one day a week. But I prefer to come in here. It's the social interaction, getting out of home, being with my team, I prefer that.

The car facilitates a sense of belonging in a number of ways. Firstly, in a purely utilitarian sense, it enables people to negotiate space and time to physically be with other people. Frederick, for example, uses the car to get to work to be with his team. Referencing Hägerstrand's time geography thesis (Hägerstrand 1970), it is the car's unparalleled speed to overcome constraints of time and distance which enables fulfilment of Frederick and Harry's need to interact and share ideas with their team.

In a more affective and emotional sense, the car facilitates belonging in that to drive is a socially accepted way to be mobile. As articulated in detail in the previous chapter, many participants felt that not to drive is to be 'the other' and in the extreme sense a subject of pity. Larry, for example, describes feeling "sorry for people [pause] waiting in the hot sun or the pouring rain, waiting for buses".

Related to this is the way participants felt that the car, as both a space of shelter and a mode of transport, maintains a certain appearance. Being sweaty and looking strange in casual attire, for example, were suggested to be preludes to being an outcast or rejected in some way.

Acceptance as a sense of approval

For the people I spoke with, gaining the approval of others, often identified as family and work colleagues, is important. For example for Anthony, the ability to impress

clients by bending his time around their demands gives him “kudos”, for Steve his “reputation is everything”, Rebecca expresses a desire “to feel valued”. The car is used as a way to gain approval by enabling people the flexibility to bend themselves around the demands of others. It allows accommodation of the needs and wants of people and projects that matter, including employers and family. Anthony’s reward of “kudos” comes after driving out to visit clients on-site at short notice, Steve’s reputation is maintained by his early arrival at work and avoidance of using the work change rooms, Rebecca’s team values her ability not to let the team down by leaving early to catch public transport. Participants consistently indicated that the flexibility and reliability inherent to automobility were integral to the establishment of rapport and maintenance of reputation and even sustaining a sense of comfort and security in the work environment:

Rebecca: Yeah, you just want to feel respected and comfortable, like it's a safe place to come to, like you're part of the team and you're not on the outer, so, like, time, and staying back, it's an important part of your role.

Acceptance is related to the quest for prestige and status. In their work on the psychosocial benefits of car use, Hiscock et al. (2002) suggest that the pursuit of ontological security breeds desire for prestige and status. Cars are expensive assets – a “mobile status symbol for the rest of the world to see” (Stokes and Hallet in Hiscock et al. 2002, 121). This idea of the car as a status symbol has been explored extensively in Chapter Six where it was established that while material gain was important to many study participants, the idea of the car itself being an ‘object’ of status did not feature strongly (see pages 177-179). Automobility, however, is linked to the pursuit of prestige and status in that it enables participants to fulfil the expectations of employers and clients which, it is hoped, results in an escalation up the career ladder. Megan’s description of not wanting to be the person who has to leave early – particularly when she is “stepping up to the manager’s role” – is telling in this sense. While the people I spoke to do not necessarily pursue prestige and status through car ownership as such, they do use the autonomous mobility enabled by the car to maintain and acquire a sense of standing, suggesting aspirations to prestige and status.

These aspirations are linked to a desire for acceptance. For many people, this pursuit gives life coherency.

Self-acceptance through self-nurture

The acceptance component of ontological security also relates to a sense of self-pride. Giddens proposes that pride is intrinsic to the individual's capacity to construct a coherent life story (Giddens 1991, 66). We need to think positively of ourselves if we are to be ontologically secure.

This sense of pride is exhibited through routines of self-nurture and self-care. The ontologically secure individual seeks to minimise discomfort when its experience is not a necessary component of the coherent life story. That is, people will endure discomfort if it contributes to the attainment of coherency. For example, many participants had returned to part-time study with the aim of promotion at work. The 'discomfort' of studying part-time and working full-time, including late nights and weekend workshops, is endured because getting a promotion at work is part of coherency. Two of the people I spoke to had quite arduous responsibilities caring for a sick family member and the 'discomfort' associated with this, such as getting up in the middle of the night or rushing home for an emergency, is endured because family is important.

If discomfort has no relationship to what we are trying to achieve in life, then it makes sense that we avoid it. This is nicely expressed by Frederick:

Frederick: I could, in terms of viability, it [alternative transport] would get me to work. But in terms of comfort, I really prefer the car. I am being selfish because I am in my car and on my own. But I think that, [pause] if you are a believer, then God loves you too and doesn't want you to be uncomfortable. In life, we have so many stressful situations. And it is not stressful for me to drive.

I propose that the concept of comfort, demonstrated in Chapter Seven to be an extremely motivating factor for automobility (see pages 181-195), is actually related to

a much deeper need to nurture the self. The avoidance of discomfort is a practice of self-care which maintains a sense of self-pride. Driving the car, avoiding the rain and hot weather, the sweaty people on the train, the danger of riding a bike and the inconvenience of waiting, are all practices of self-nurture. Similarly, the way that the car is perceived as the 'normal' thing to do is also related to a desire to look after the self – to avoid the discomfort and pain of societal rejection or simply being 'different'. It is too easy to dismiss the desire for air conditioning, privacy and freedom and the aversion to active and public transport modes as collective cultural 'laziness'. A human determination to nurture and protect the self is a very natural and increasingly socially and culturally inculcated response, demonstrating the extent to which automobility is embedded in the way we negotiate modern life.

A primary implication of this conceptualisation of popular aversion to the discomforts associated with alternative transport use is that if the individual perceives unnecessary discomfort as detracting from the coherent life story (and potentially threatening to ontological security) he or she will naturally seek to avoid it. This idea forms a key component of the following chapter which explores the implications of conceptualising automobility as related to ontological security in relation to the uptake of alternative transport modes.

Conclusion

This chapter has explored the way a collective determination to maintain ontological security supports automobility. The chapter first established that as part of ontological security people seek coherency. That is, they seek to construct a coherent life story which they can tell themselves and others. Coherency connects and orders the different components of our lives and is defined in reference to accepted cultural norms. For the participants in this study, family, work, material accumulation, recognition and respect feature as key reference points for coherency. The chapter then proposed that predictability, autonomy and acceptance support these reference points.

Predictability was conceptualised as habit, routine, normality and surety. The way automobility maintains these things was examined and it was proposed that the car is not only a site within which routines and habits are constructed and maintained, but that automobility is integral to conceptualisations of normality and surety.

Autonomy was then explored as both mastery and freedom. It was demonstrated that the car provides a refuge from surveillance and a way to escape. The idea that automobility is the only way many people know how to negotiate the temporal and spatial demands of modern life was also discussed.

Finally, acceptance as contributing to coherency was examined. It was proposed that both self and social acceptance are important components of ontological security and that automobility fulfils a basic human drive to nurture the self.

There are now three levels of conceptualisations of car use. Chapter Three reviewed the existing paradigms of car use ranging from utilitarian to affective motives to the new mobilities paradigm. Chapter Seven then explored some of these motives by applying a unique theoretical lens to empirical data collected from interviews. This chapter has repositioned my empirical data to propose a novel way of thinking about

car use as a way to better understand some of the motives established by previous research.

Thus far the focus has been on conceptualising the existing situation. I have proposed that both the actual space of the car and car-based autonomous mobility are deeply embedded in individual and collective notions of security, including what it means to live a life that is coherent. The following chapter discusses what a conceptualisation of automobility based on ontological security can reveal about the potential for the uptake of alternative transport.

Chapter 9: Tipping Points, Tinkering, Teachable Moments and Taming Automobility

Introduction

This chapter explores what a conceptualisation of automobility based on ontological security can reveal about the potential for change. What new light does ontological security shed on the endurance of automobility?

The chapter starts with a reiteration of the key principles behind traditional mobility theories. I briefly discuss the way these theories have treated change. I progress to paint a picture of what a society in transition away from automobility might be like. I establish that it is unlikely that the concept of car-based autonomous mobility will be entirely removed – society that is less auto-mobile will be one where the car is tamed, rather than entirely eradicated. While alternative transport will feature more in mobile futures, it will not replace the private car entirely.

I then propose that attempts to encourage transition away from private car use need to address the meanings associated with automobility, particularly the way automobility supports ontological security. I revisit each of these components to explore the implications of automobility as ontologically securing on opportunities for the increased uptake of alternative transport. At this juncture, I also outline a number of ‘sticking points’, or deep-seated and complex accumulations of socio-technical structures and internalised pursuits, that this study exposes. Where possible, I use examples of common travel-planning policy to articulate inconsistencies between the expectations of those planning for alternative transport and those anticipated to one day practice its use.

In conclusion, the issue of 'when' transition might occur is addressed. A variety of perspectives on the right time to pursue change are outlined, again applying the implications of this study.

Why Should People Change and What Might Change Entail?

Modern life is often characterised by rapid change, with change labelled the only constant. Automobility, however, appears remarkably unchanging “even though a massive economic, social and technological maelstrom of change surrounds it” (Urry 2004b, 32).

As discussed in the introduction to this thesis, international scholarship on the place of the car in modern society often advocates the need for its removal. This need is regularly couched in terms of dire warnings about climate change, peak oil, social stratification and displacement. The expression ‘autogeddon’ is occasionally borrowed from J.G. Ballard’s celebrated novel “Crash” to describe a future consumed by automobility’s failings (for example Wollen and Kerr 2004; Dennis and Urry 2009). Urry (2008) paints a graphic picture of a post-car society so divided by access to oil and exposure to climate change induced displacement and disaster that a new system of regional warlordism ensues. According to Urry, this might all come to pass before the year 2100, with its only alternative being a more civil society where mobility is rationed out and governed by a similarly disturbing system of Foucauldian-like surveillance (286-7).

Although modelling a future for the car is difficult, consensus is generally that automobility is unlikely to disappear entirely. As Freund and Martin (2009, 477) succinctly put it: “of course the car is here to stay”. The system so well theorised by the new mobilities paradigm is indeed locked in (Sheller and Urry 2006). Transition to an entirely car free future is, therefore, unlikely in the absence of prompting by catastrophic change (Dennis and Urry 2009), after which the inability to drive to work may well be the least of society’s concerns.

Many questions remain, however, as to what degree it will be possible to sustain the daily personal car-based mobility currently characterising cities like Sydney through very real technical inevitabilities such as peak oil and restrictions on carbon emissions. It is true that despite several decades of efforts to improve the energy efficiency of cars, there has been very little headway into decoupling automobility from the use of

fossil fuels and related emissions (Nunen et al. 2011). There are instances, however, where technology has resulted in a decrease in emissions in the past and some suggest this carries hope that similar innovation will occur in the future. Investment trends and increased competition between suppliers are often cited as positive indications that there will be continued technological innovation of more sustainable cars into an oil and carbon constrained future (Sperling and Gordon 2009; Black 2010; Owen et al. 2010; Coffey and Thornley 2012).

Several problems remain, however, that will not be solved by the relatively easy wins promised by technological innovation (Luoma et al. 2010; Nunen et al. 2011; Lyons 2012). Many of these were discussed at the beginning of this thesis. Positioned as related to human health and wellbeing, these problems include the way the car lures us into a stressful and sedentary lifestyle and its contribution to mental and physical ill health resulting from traffic congestion, car accidents and road rage. For the various problems its continued aggregate growth entails, it is in societal interests to pursue a reduction in private car use. This reduction, however, may not necessarily mean a mass uptake of public and active transport. Given the complexity of automobility's entrenchment in modern life, it is likely that the car as object will continue to feature throughout our cities. Its casual and automatic exploitation for numerous short trips (Freund and Martin 2009) will be questioned rather than its actual existence (Dowling and Simpson *in press*).

The place that is reserved for the car will be amongst a suite of alternative transport options. It will inevitably fulfil a technologically and potentially socially modified role, complemented by multiple and interconnected modes of mobility. This may include new ways of thinking about the car as not necessarily private. An example is the emergence of car sharing schemes (such as GoGet in many of Australia's major cities¹¹). The car sharing model detracts from the autonomy associated with existing

¹¹ In its modern form, car sharing is a service that provides short term access to (as opposed to ownership of) cars. Cars are parked in dedicated car bays around cities, in neighbourhoods and major employment centres, as well as at public transport stations (Shaheen et al. 1998; Barth and Shaheen 2002). After becoming a member of a car sharing organisation, the user can book a car via the internet or phone.

car-based mobility, however it positions the car as less intrinsic rather than entirely absent from everyday life (Kent and Dowling *under review*). A degree of accessibility, reliability, flexibility, comfort and privacy inherent to the private car remains, even though the car is packaged as a relatively public good.

There being a technologically and socially modified role for the car in the future suggests a need to move beyond essentialist understandings of automobility that view the car as demonised and its demise inevitable. The car in the future should be conceptualised as 'tamed', rather than entirely restricted or non-existent. The following section explores ways that this taming might occur.

How to Tame the Car...

Throughout the previous chapters (particularly Chapters Two and Three), different ways of thinking about resistance to alternative mobility and the persistence of automobility were discussed. This discussion started with consideration of time-space geography's application to the transport field where mobility is a direct result of the need to navigate time and space in order to maximise accessibility in the context of various constraints. Focus then turned to utilitarian theories and their emphasis on rational motives for transport behaviour. It was proposed that the 'knowing' individual makes transport decisions based on a desire to minimise the disutilities associated with the need to get from A to B. The contribution of psychology through various applications of psycho-social approaches to transport behaviour was also explored with its emphasis on individual cognitive variables, such as beliefs, attitudes and values, as predictors of transport behaviour.

These approaches each have implications and recommendations for alleviating the problems associated with automobility. They range from ways to reduce VKT to ways to reduce the impact of kilometres that are travelled. Taken collectively, strategies and programs that encourage more efficient use of transport resources are often referred to in the literature as Transportation Demand Management (TDM) (Litman

2003). Reflecting changing ways of thinking about travel behaviour and increased recognition of the problems associated with automobility, such strategies and programs have diversified and proliferated throughout the period from the 1970s onwards (May et al. 2003; Santos et al. 2010a; Santos et al. 2010b). Various authors have developed schemas to organise TDM measures, many of which have been reviewed and classified in an abundant literature (Loukopoulos 2007, 276). Most classifications of measures to manage automobility incorporate some recognition that its regulation must be addressed concurrently through what May et al. (2003) label supply measures (which aim to change transport choices available) and demand measures (which relate more to changing the norms, motivations and perceptions influencing the way transport choices are made).

Also reviewed in Chapters Two and Three were conceptualisations of transport practices as existing in primary response to various systems of mobility, including automobility. Although there are other ways of thinking about automobility as systemic, this conceptualisation is most explicitly embodied by the new mobilities paradigm. In an effort to address the overwhelming scope of environmental and social 'crises' facing the world, change here is conceptualised as requiring fundamental full-scale transition of the socio-technical systems that are at present unsustainable (Cohen 2012). The actual term 'transition' in this way of thinking about change specifically implies substantial transformation from one state of being to another (Shove and Walker 2007). Theorisations of socio-technical transition often employ Rip and Kemp's (1998) multi-level perspective – a theory that conceptualises the overall dynamic patterns observed in socio-technical transitions (Geels 2012). The theory separates the macro level of the socio-technical landscape from the meso-level regime which, in turn, is distinguished from the micro-level niche. Change occurs within and between these layers. One of its key contributions is to explain the way innovations can be developed within a micro-level niche and disperse through the regimes and landscapes which are both sustaining and sustained by it (Hargreaves et al. 2011).

Inevitably the site of transition towards alternative transport is conceptualised by this perspective as wholly situated within systems. Change will not be linear through, for

example, technological advances in isolation. Instead, it will need at some stage to address the way the car is a part of a set of incredibly interconnected socio-technical structures. This does not necessarily imply that change will only come as a result of the transformation of the entire system (Dennis and Urry 2009) because parts of the system may be changed in isolation provoking wider systemic and structural change in the future. Of relevance to overcoming resistance to alternative transport is that this way of thinking about change does not generally explore the potentiality of change as much as it observes nascent indications of transition evident in analysis of the existing social situation. While where, when and why transition might occur is the subject of research, consideration of ways to influence transition are less prominent.

With a focus on automobility at the site of the system, these approaches often overlook the potential for change to occur at the site where automobility is actually practised. They take as given that the individual will behave within the system in a certain prescribed way. In this broad systems approach, there is no room to conceptualise the intricacies of change required on the ground for changes to systems to occur and be maintained. This idea that systems-based approaches might not have 'room' to incorporate a role for individual agency opens up a space for concurrent considerations of ways to place the individual in transition scenarios. Practice theory enables such consideration through its recognition that any change in mobility practices requires intervention into the complex lives of those who live through automobility. An approach focussing on practice does not ignore the influence of complex networks of power, knowledge and authority in shaping mobility behaviour. It simply views the effects of these networks as inextricable from the actions of people and the practices they carry out in the course of their everyday lives. Change will require individuals to negotiate rearrangement of very personal and practical ways of doing daily things and taming automobility will not materialise unless enacted by those who are 'being auto-mobile'. For example, the uptake of cycling to work requires reconfiguration of a host of interlocking competences, materials and meanings, such as getting dressed, navigating traffic, eating breakfast, making phone calls, transporting en-route shopping, feeling comfortable, socialising after work and presenting as

professional at work. It is the changes to these practices that will result in decreased car use, with the actual practice of riding the bike simply the end result.

Throughout this thesis I have argued that the meanings embedded in the practice of driving, including those related to sensibility (such as feeling safe, cool or tranquil), need to be considered in conceptualisations of ways to shift mobility practices. I have proposed that these meanings are just as fundamental to understanding automobility as a remarkably enduring problem, as technical, rational and economic factors. I have also shown that the concept of ontological security can be used to frame these meanings. As a concept that is both individually experienced and culturally inculcated, ontological security bridges a gap in conceptualisations of meaning in practice theory by linking meaning to various collective cultural patterns.

This chapter has firstly established the likelihood that there is a future for automobility, in some form. It proposed that automobility needs to be tamed rather than disposed of entirely. Various ways of understanding change to mobility behaviour were then reviewed. The chapter now moves on to make some tangible recommendations for how the findings of my research might be used to tame automobility within the boundaries of what is ontologically unthreatening. A series of 'sticking points' - big picture barriers to transition – are also revealed.

Recommendations for Transition

Setting the Scene: Tinkering Towards Transition

Tinkering within the realms of ontological security

Practice theory is very good at “revealing the scale of the challenge” of change (Hitchings 2011, 2852). In sketching a detailed picture of the various elements sustaining a practice we are able to “identify several ways of tinkering with them” (Hitchings 2011, 2852). My aim in using practice theory has been to identify points of

useful intervention by starting with the practices that sustain automobility. I have explored these practices to expose what they mean for the people doing the practice. In my explorations, I have found that the components of ontological security (predictability, autonomy and acceptance) can be used to demonstrate why certain practices are sustained while others seem to fade. In short, practices are convened and reconvened bundles of materials, competences and meanings and we need to tinker with these bundles to enact change. The components of ontological security form boundaries for this 'tinkering' towards transition.

Chapter Eight described being ontologically secure as having a sense that one knows how the world is and how to be in the world. Ontological security was conceptualised as primarily defined by coherency which requires predictability, autonomy and acceptance. Discussion now turns to explore ways that transition might occur within the boundaries of ontological security. Examples from study participants are used to make various recommendations on how the challenge of alternative transport might be positioned to be less threatening to ontological security.

Avoiding coercion

The first point I wish to make on the ontological feasibility of recommendations for change relates to the extent to which change can occur as a result of coercion. Coercion is the degree to which change is optional and within the discretion of the individual or the degree to which change is compulsory in some way (Loukopoulos 2007). For example, prohibition of the use of cars in certain areas is wholly coercive, while improving cycleway signage or public transport networks is non-coercive. The difference is that the individual has the choice of whether to change or not. Policies to regulate automobility also display degrees of coercion – for example those based on pricing, such as tolls, are only coercive in the context of other factors such as individual wealth or route flexibility. The success and desirability of coercive and partially coercive measures forms a very broad area of study and some of this literature was discussed in Chapter Two (see pages 39-42).

Within the system of automobility as it currently exists, 'top down' or entirely coercive change is unlikely to be successful unless enacted as part of a suite of changes designed to bring about change (Gärling et al. 2002; Steg and Vlek 2009). This is firstly because, by its very nature, forcing change indicates pre-existence of resistance to change. As a result, the more coercive a policy measure is, the less likely it is to be politically salient. In the current political economy, marked by neo-liberal idealism, it is unlikely such an intrusion on individual freedom would be tolerated. Nevertheless, policies based on degrees of coercion have been somewhat effective in changing transport practices. The most striking and recent example is the impact of the congestion charging scheme in London. Introduced in 2003, this originally £5 charge to access the central London district in peak-hours has been hailed as a success in reducing congestion and increasing the use of alternative transport (Schuitema et al 2010; Shove and Walker 2010). Analysis of the positive response to the charge reveals its success is based on the way it has worked as part of a series of parallel programs of investment in alternative transport, including public transport and cycling. By embedding a relatively coercive policy within a system that provides for culturally acceptable and structurally sound alternatives effectively attenuates its intrusion. This subsequently increases the political viability, and therefore likelihood, of (relatively) forced change.

The efficacy (and ethics) of partially coercive policy based on pricing is, however, highly debatable, particularly in cities such as Sydney that are poorly served by alternatives to private car use. The 'laws' of economics logically deem that an increase in the cost of driving will decrease its demand. However, research shows that demand for automobility demonstrates varying degrees of price *inelasticity* (Hensher 1998; Paulley et al. 2006; Cools et al. 2011; Van Reeve 2011). That is, people are willing to absorb price increases associated with driving and regularly surprise economists with just how much they are willing to pay to be auto-mobile (Metz 2002). As a reminder from Chapter Two, Hensher and Stanley (2009) found that over an eight year period a progressive AU\$1 per litre annual increase in fuel costs in the Australian city of Melbourne would cut annual passenger vehicle kilometres by just 25 per cent (see

page 39). Although a 25 per cent reduction in VKT would make substantial headway to address traffic congestion, it is a relatively mediocre response considering the political volatility of fuel priced at AU\$10 per litre. A certain ambivalence to pricing incentives was also demonstrated by this study's participants, who generally failed to appreciate the monetary cost of being auto-mobile. As outlined in detail in Chapter Seven, participants generally viewed the costs associated with alternative mobility as more disturbing than those associated with car use (see pages 179-181). Again, the political feasibility of impinging on the 'right' to mobility to the extent of the price increases required to induce behaviour change is questionable.

Finally, psycho-social modelling of individual responses to coercion suggests that for behaviours that are deeply embedded in an individual's identity, forcing change can actually have the opposite effect (Murtagh et al. 2011). Coercion in the short term may well provoke assertions of freedom in the face of threat and thus compound the behaviour. This is particularly likely if car use is highly salient or central to a person's identity. Attempts to force reductions in car use may be perceived as a threat which could result in increased resistance to alternative transport. This was demonstrated by this study's participants' reactions to proposed restrictions on car parking. Many suggested they would consider leaving their employer if car parking were not provided ("if I couldn't park here I wouldn't want to work here, it's that simple" (Diane)). Others simply said they would find a way to continue driving, even if it meant a park and walk scenario.

The proposition that coercion is best avoided, or at least watered down, is not new and has been used to support many of the more dominant transport policies aiming to modify human behaviours, attitudes and habits. This way of thinking about change is as much a political as it is a theoretical position in that change is wholly attributed as the responsibility and indeed the right of the individual (Perri et al. 2010; Aldred 2012; Shove et al. 2012). The role of the state is to 'nudge' rather than explicitly facilitate or coerce behaviour change (Thaler and Sunstein 2008).

My position throughout this thesis has been to avoid duality and I assume this stance again in my treatment of coercion. I advocate a modest approach to policy, based neither entirely on coercion nor the ambitious modification of individual attitudes and beliefs. I have established that shifts in transport practices are likely to require intervention into complex systems of culture, practice and structure. This indicates the need to somehow conceptualise the way people might navigate, oppose or accept change. At the very least, such conceptualisation enables an understanding of the unintended consequences of policy based on coercion. These consequences potentially include mobility practices indicative of an individual resisting change. My proposal, grounded in my research findings, is that the individual will not be easily recruited to mobility practices that threaten ontological security.

On predictable work and home environments

Confidence in the predictability and continuity of the social and material environment has already been identified as key to ontological security. A sense of predictability and continuity is not only important in that it is empowering, but also because it promotes the idea of living a life that has a future focus. Predictability is developed from routine.

As described in Chapter Eight, it was not only the routines performed inside and around the car that maintained predictability as a component of ontological security (see pages 228-229). Predictability was also protected through the automobility-enabled ability to live in a certain suburb relative to employment or minimise the disruption associated with a change of employment or company location. Leroy, for example, was not forced to move his family when he accepted a new job (and pay rise) 75 minutes away from where he lives because he can drive to work. For the participants in this study, automobility has played a key role in the maintenance of predictable home and work environments.

Protecting the routines associated with maintaining a stable work and home environment from the threats implied by transition away from automobility requires substantial challenges to be placed on deep-seated cultural notions of freedom. This is

about challenging the freedom people have, for example, to maintain a separation between work and home (Megan), to change where they live without having to change where they work (Larry), to choose to return to the suburb of their upbringing to raise their own family (Ben) or to live close to their children (Frederick) (see pages 232-233). This notion questions the efficacy of urban planning based on the co-location hypothesis (discussed in Chapter Two), including the pursuit of polycentrism reflected in the approach to Sydney's strategic planning since the early 1990s. Even if a technological fix - such as the achievement of better jobs-home balance - could replicate the current work-home freedoms associated with automobility, it is unlikely that such a fix would result in mass transition to alternative transport modes. This is firstly because the freedom to separate work from home by a distance of choice comprises an important component of autonomy in modern society. Secondly, the ability to maintain autonomy over one's work and home location provides a degree of predictability to modern life. Both of these elements, predictability and autonomy, are unlikely to be sacrificed voluntarily because they are very much a part of what gives life coherency.

This leads to the link between ontological security and autonomy, which will now be discussed.

On autonomy

Chapter Eight discussed the way routines and predictability must be complemented by a sense of autonomy. Autonomy is integral to ontological security in that it is supported by experiences of mastery, control and freedom.

Although by definition, a shift away from automobility implies lost autonomy, there are ways that policies promoting alternative transport can foster a sense of mastery and control in the absence of the car. For those accustomed to automobility, mastering a complex public transport network or a bike ride to work is a small but enjoyable victory. Jackie for example proudly labelled herself "the public transport queen".

Alternative transport should be easy to master and subsequently control. It should not be “too tricky, with all the tickets and everything” (Melissa). Early attempts at using public transport cannot be marred by missed stops, mistaken connections and wrong ticket purchases. First rides to work cannot be characterised by bike lanes that end abruptly, incorrect signage and complex shared path systems that are tried. Chris, for example, describes trying a cycling route “once, and there was some places where you push out onto a main road and they put you on the footpath and call it a dedicated cycle lane but it's not very wide. So I thought there was a safety issue there and yeah, never again”.

These initial failures detract from an individual’s sense of autonomy. They could well mean the difference between a sustained alternative commute and one that is abandoned after two or three uncomfortable attempts.

On autonomy and privacy

Autonomy in Chapter Eight was described as freedom *to* and freedom *from* (Kearns et al. 2000). It was suggested that the actual object of the car provides a partition between the self and “the gaze of the outside world” (Brown 2000, 63). Modern life’s characteristic surveillance, proliferated through technologies that can now not only monitor place but also movement, enhance yearnings for privacy and the need for a place to be oneself.

In the year 2000, William S. Brown wrote on the way constant surveillance in the workplace threatens an individual’s ontological security. He described the new ways employees’ phone calls, e-mails, timesheets and movements were tracked by the ever vigilant employer (Brown 2000). Surveillance technologies have developed rapidly since Brown’s article and these developments have further eroded employee privacy in the workplace.

Indicative of the removal of privacy in the workplace is the increasing popularity of a workplace layout based on ‘hot-desking’ or ‘hotelling’. These are office organisation

systems which involve multiple workers using a single physical work station at different times (Millward et al. 2007; Stegmeier 2008). In this system, employees do not have a permanent place to sit while at work. Instead, when they arrive each morning, they take any seat that is available so that where they sit one day will be entirely different from where they sit the next. By implication, the employee is not afforded a desk that is his or her own (Zeisel 2006; Wood and Wall 2007). The potentiality for the work desk to become a 'home away from home', and a place of retreat at work, is removed. It is no longer a space to adorn with personal items such as family photos, clips from cartoons, or other clues of life beyond the workplace. There are varying degrees of the depersonalisation of space and removal of privacy at work, with the relatively novel concept of 'hot-desking' at the extreme end of the spectrum. The conventional enclosed office characterised by floor-to-ceiling walls with office doors that can be closed for retreat is increasingly rare (Adonis 2011). Open plan offices are now standard, however the partitions that once characterised open plan are increasingly absent, leaving the employee with a desk area that is entirely exposed (Mylonas and Carstairs 2005). The concepts of "lean" and "clean" working spaces has also been popularised, where workers are prohibited from placing anything personal on or around their workspace (Knight and Haslam 2010, 167). It seems that privacy, permanency and autonomy over the immediate workplace are increasingly considered dispensable.

Prominent sociologist Zygmunt Bauman has labelled the removal of privacy as one of the hallmarks of modern life (2001). Hot-desking was described above as an example, however there are other ways in which privacy has been eroded in the day-to-day melee of modern life. Increased residential densities removing the privacy of one's own backyard, and even contemporary town planning's embrace of passive surveillance, represent potential threats to privacy. As a result, other spaces that can be personalised, are permanent and present opportunities to retreat from the social gaze become more important (Koskela 2000). As described throughout Chapters Seven and Eight, the car is such a place. It is a place for "me time" (Jackie), a place to be

oneself (Dan), to “zone out” (Chrissy), a place to own (Frederick) and a place where we are not forced to interact (Larry and Diane) (see pages 233-234).

Maintaining and enhancing a sense of personalisation and privacy in places other than the car may make transition away from car use a less threatening prospect. This could include spaces at work and extend to re-enforce town planners’ pleas that more consideration be given to the design of higher density residential development (see for example Easthope and Tice 2011; and Kent et al. 2011, 50). Removing the privacy associated with the car takes on new significance when it is conceptualised as one of the last bastions of privacy in the modern world.

It was also proposed that autonomous mobility appealed to ontological security by providing the actual mechanism of escape – the ability to remove oneself physically and quickly. The link between ontological security and autonomy to choose where one lives and works was discussed above where it was proposed that transition away from automobility places substantial threat to deep-seated cultural notions of freedom to separate work from home by a subjectively acceptable distance. Similarly, it is difficult to see how the day-to-day freedom “to go sometimes” (Anthony), to be mobile without prior planning, can be facilitated in a society that is less attached to private car-based autonomous mobility. Automobility provides speed and autonomy to escape – the ability to move physically and quickly. Removal of the freedom to be instantaneously mobile (that is, mobility without prior planning) places substantial threat to deep-seated cultural notions of the right to freedom and autonomy.

Nurturing acceptance

Ontological security needs the self to be viewed positively in regards to others (Hiscock et al. 2002, 120) and is a product, in part, of seeking social acceptance. Chapter Seven demonstrated a number of ways that automobility facilitates certain ways of working and presenting at work. Being flexible at work, not always working from home and dressing in a certain way were identified as important components of gaining approval

in the workplace. Chapter Eight placed the value of approval as a form of acceptance pursued in an effort to maintain ontological security.

The car accommodates working beyond the hours serviced by regular public transport and beyond those where cycling and walking feel safe and enjoyable. It enables the employee to arrive each morning immediately ready to work, without the need to shower, 'change' or carry objects such as bike helmets and backpacks into the office. In work locations not supported by either the infrastructure or culture of using alternative transport to get to work, the "extreme job" (Hewlett and Buck Luce 2006, 49), characterised by teams working in well-pressed shirts on tight deadlines late into the night, is very much facilitated by automobility. It is the car that enables spur of the moment client visits, unpredictable workflows, attendance at work-related events outside working hours, as well as the ability to maintain a reliable presence at work while caring for children, partners and ageing parents.

There are obvious infrastructural changes that could be made to accommodate demands for flexibility and certain standards of presentation at work in a less automobile society. Many of these have been pursued through policy for some time. For example, peak-hour regularity of public transport services can be extended beyond the traditional peak period. The safety (and perception of safety) of using public transport, and of cycling and walking at night, can be enhanced through increased presence of security personnel, better lighting and more comprehensive use of design principles such as those advocated through Crime Prevention Through Environmental Design (CPTED)¹². Positioning these accepted planning wisdoms as ontologically securing adds new weight to their importance.

On the unremarkable alternative transport journey

¹² Crime Prevention Through Environmental Design (CPTED) has emerged within the last 30 years as the umbrella term for environmental interventions aimed at reducing crime and fear of crime. CPTED is based on four key strategies of 'territoriality' (encouraging a sense of ownership), 'natural surveillance' (encouraging eyes on the street), 'activity support' (encouraging use over vacancy) and 'access control' (balancing surveillance and use with privacy) (Crowe 2000).

Acceptance is very much based on being seen to be 'normal'. For soon to be manager Megan, for example, her aversion to alternative transport use was based primarily on "not wanting to be seen as the person who...". The use of alternative transport needs to be positioned as an unremarkable and ordinary part of daily life. Perhaps the facilities for alternative transport (such as end-of-trip facilities for walkers and cyclists) should not necessarily be highly conspicuous. This suggestion is contrary to contemporary planning policy based on making such facilities noticeable in the hope of encouraging awareness of their existence and subsequent use (see for example the recommendations of the Australian Pedestrian and Bicycle Information Centre (2012), for the design of end-of-trip facilities). This approach is based on behaviour change models such as Rogers' theorisation on the Diffusion of Innovation and Bandura's Social Learning Theory. These theories suggest that diffusion of new behaviours (for example, the use of alternative transport) occurs through increased awareness which can come from seeing others actually doing the new behaviour. Bandura, for example, explains that "if a behaviour is highly conspicuous, it can be learned from public displays by people who are unacquainted with one another" (Bandura 1977, 51). The idea is linked to the theory of planned behaviour discussed in detail in Chapter Three where the individual's propensity to assume a new behaviour is very much dependent on his or her perception of whether that behaviour can be performed (see pages 61-64). Social Learning Theory suggests that this perception can be developed by seeing others who currently engage in the behaviour. The concept of ontological security, however, suggests that in a desire to avoid the exclusion of difference, people may be more likely to experiment with and engage in new behaviours, such as alternative transport use, if they are able to do it inconspicuously. This is not a recommendation to conceal alternative transport. It is more a suggestion to avoid the promotion of those already engaged in alternative transport, and its associated infrastructure, as necessarily anything but normal.

This raises an interesting theoretical asynchrony within many theories of behaviour change, including the TPB (after Ajzen 1991, see for example, Bamberg and Schmidt 2003). This theory also promotes subjective norm (that is, an individual's perception of

others' beliefs as to what he should or should not do) as a precursor to intention to change. A balance needs to be found between making alternative transport 'normal' and raising awareness to promote its uptake.

On expectations of flexibility and presentation at work

Acceptance can also be positioned as gaining the approval and respect of one's social group. For the people I spoke to, feeling accepted and respected at work is extremely important and a major part of this is the ability to be flexible, reliable and physically present. Acceptance was also perceived as based on appearing in a certain way by maintaining standards of dress and hygiene.

Transition to alternative transport will require relaxation of cultural expectations around flexibility and presentation at work. Research and policy addressing the role of the workplace in providing supportive environments for alternative transport generally concentrates on appeals to instrumental motives for travel mode to work, often positioned as workplace travel planning initiatives (for example Coleman 2000, Kingham et al. 2001; Rye 2002, Enoch and Potter 2003; Wen et al. 2010). This includes the effectiveness of travel planning, fiscal incentives to use public transport and the removal of accessible parking in the vicinity of the workplace. The barrier of working flexible hours and the pressure to adhere at all times to certain standards of presentation to the uptake of alternative transport remains under-explored (Coleman 2000). Further, the impact of more tacit cultural expectations of working outside of traditional working hours (as opposed explicit expectations relating to, for example, shift work) on the potential for transition to alternative transport is generally not well integrated into research in this area. It is possible that an employer is entirely supportive of alternative travel as a rational-instrumental solution to the congestion and parking issues associated with automobility, however this support may diminish when viewed in the context of the way such travel might influence employee output. This gap between employer intention and practice has been identified in human resource based literature on work-life balance (Budd and Mumford 2006; Eugenia

Sanchez-Vidal et al. 2012). It was certainly demonstrated by participants in this study who described inconsistencies between employer expectations and provision for alternative transport. There is potential for human resources related research on ways that genuine managerial support for work-life balance (as reviewed by Lapierre et al. 2008) might impact transport behaviour and the success or otherwise of workplace travel planning aimed at encouraging transition to alternative transport.

Of further importance is that this cultural acceptance of flexibility needs to be positioned as a product of both the employer and employee perceptions. For the people I interviewed, a common incentive to stay late at work was peer pressure. Dan, for example, explains the way his team works:

Dan: Yeah, [pause] if I leave early that means someone else will have to stay back late. And I guess I feel entirely responsible for our section of the business and I don't want to let my team down. We work pretty long hours so we're all in it together.

Most of the people I interviewed mentioned their team. The idea of being flexible enough to stay back late or make impromptu client visits was often positioned as a way of being a team player and fulfilling the expectations not necessarily of management but of peers. In their evaluation of work-life balance programs, Heywood et al. (2010) found that peer pressure generated by working in teams undermines employer attempts to incorporate work life balance initiatives into the workplace. Interestingly, this finding was not linked to programs of group appraisal, group pay or profit sharing (Heywood et al. 2010, 1989). This suggests that the pressure to be a good team player is not necessarily tied to immediate financial reward but is instead related to deeper cultural notions of being accepted as part of a group. At present, the flexibility and reliability inherent to automobility when compared with alternative transport use facilitates this acceptance.

Again, it is difficult to see how alternative transport infrastructure might be modified to provide for the level of flexibility currently expected by many employers and employees. A more realistic approach might be a relaxation of cultural expectations of

availability at work. In the context of increasingly competitive global labour markets and global financial uncertainty, such a relaxation would require substantial challenge to ways not only of personal working but also to the prevailing political economy.

On self protection

Chapter Eight identified the way the acceptance component of ontological security also relates to a sense of self-pride. Self-pride was explored as exhibited through routines of self-nurture and self-care and it was proposed that the ontologically secure individual seeks to minimise discomfort when its experience is not considered necessary. People will endure discomfort only if it contributes to attainment of something that is important to them. For example, Frederick endures various 'discomforts' associated with caring for his wife (such as getting up in the middle of the night) because family is important and a major component of what gives his life a sense of coherency. If discomfort has no relationship to what we are trying to achieve in life, then it makes sense that we avoid it. Frederick is not willing to endure the discomfort associated with travelling in a train without air conditioning because the use of alternative transport is not in any way related to the things that matter to him. It is more comfortable for him to drive and as a result the car prevails when he is given the choice between driving and his substitute trip – even though driving might sometimes take more time. Harry, on the other hand, is willing to endure the discomfort of riding to work once a week because he is training to participate in a charity ride. He will be part of a work sponsored team for the event and contributing to his team and being socially interactive at work is important to him.

This conceptualisation of aversion to alternative transport as related to practices of self-care and the subsequent avoidance of discomfort has a number of implications for shifting transport practices. Firstly, there are many obvious and feasible ways the infrastructure for alternative transport can be modified to emphasise comfort. In a city such as Sydney, for example, air conditioning in public transport has become a cultural prerequisite for a comfortable journey. Again, although these policies have not been

conceptualised as related to an intrinsic need to care for the self, they have been policy priorities for many years. The absence of temperature control, and overcrowding, were common themes explicitly identified by participants as barriers to alternative transport use. If the uptake of alternative transport is a policy goal, public transport services need to be sufficient to cater for demand without the discomfort associated with the crush of bodies in overcrowded trains and buses.

On ontological security and physical insecurity

While it is relatively easy to make an alternative transport journey a more comforting and nurturing experience, it is unlikely that the climate-controlled comfort of the car's cocoon will ever be able to be entirely replicable, particularly in the context of the car also supporting other components of ontological security such as autonomy and predictability. Referencing Hochschild's notion of "feeling rules", people come to "imagine what (they) should and shouldn't feel over a range of circumstances" (Hochschild 2003, 82). The very visceral feeling of comfort now associated with the car has become a cultural standard or expectation that once experienced is not naturally sacrificed. As Diane explains:

Jennifer: The idea of personal space [pause]

Diane: I like it, yeah. I think probably it comes from the fact that now I've had it. And I think that once you've had something you don't want to give it up. When you start driving to work you don't want to go back.

This raises the question of whether the use of alternative transport, including the endurance of a degree of relative discomfort, could be culturally positioned as a way to nurture and care for the self. Harry's weekly ride to work mentioned above is an example of mobility related discomfort endured to fulfil other, more important, priorities. The introduction to this thesis outlined how the use of alternative transport can be a healthy thing to do. These benefits primarily relate to increased opportunities for physical activity and community interaction. The incidental physical activity of riding or walking to work, and using public transport, can minimise individual risk to

various chronic, non-communicable diseases, including cardiovascular disease (Sallis et al. 2004; Bassett Jr et al. 2008; Edwards 2008; MacDonald et al. 2010; Pabayo et al. 2010). Research also demonstrates the way that random community connections facilitated by being out and about in the neighbourhood can prevent or mitigate depression and other mental illness (see for example Mair et al. 2008).

Self-nurturing, as currently pursued through the comforts associated with the car, could be positioned to include looking after the self through the proven health benefits associated with alternative transport use. This logic informs behaviour change programs that aim to encourage transition through raised awareness of the health benefits of alternative transport. The idea is that if an individual realises that alternative transport can be 'good' for him or her, its uptake will ensue. This focus on individual motives for change has accompanied those aimed at prompting the uptake of alternative transport through raised environmental awareness. I concur with the practice theorists on this point to propose that neither approach is likely to result in monumental shifts in practices, including mobility (see for example Shove 2010a).

The inefficacy of raised environmental concern as a way to change travel behaviour has been empirically confirmed (see for example Elias and Shifan 2012). It can be related to the social dilemma proposed by Garrett Hardin in his now infamous economic theory "The Tragedy of the Commons" (Hardin 1968). Relating this dilemma to automobility suggests that change will not occur voluntarily because an individual benefits directly from automobility and only indirectly from environmental sustainability (Steg and Gifford 2005; Nunen et al. 2011).

The idea that raised awareness of the individual health benefits of alternative transport use may not be effectual in accomplishing change is more complex. This is not just a matter of an individual prioritising short term comfort over long-term health and wellbeing. For the people I spoke to, it is more a matter of making informed choices to nurture family, friends, reputation at work and even the ability to make a contribution to the greater good, instead of addressing individual health through alternative transport use. Steve, for example, knows it would be physically 'good' for

him to ride to work, however his dedication to his job and family prevents it. Jackie yearns to “get that little bit of extra exercise in” by walking part of the way to work, however her need to study after work makes it unsafe. Again, automobility plays a key role in maintaining the things that give people’s lives a sense of coherency, and it is unlikely that concern for physical health will be permitted to hinder this pursuit.

Of relevance here is Mitzen’s observation (2006, 347) that ontological security is not necessarily equated with physical security. An individual can feel ontologically secure, even though he or she may be in physical danger. Mitzen uses the example of a nation state maintaining a ‘routine’ of antagonism and conflict in defence of ontological security – the physical well-being of the civilian population is at risk, but the national identity embedded in routine and empowering conflict preserves a deeper sense of national ontological security. A more relevant example is participant Anthony, who works in a high pressure job requiring long working hours and intense periods of stress. His health is at risk if he does not make certain lifestyle changes such as slowing down at work and being more physically active. Despite this awareness, Anthony retains his commitment to his job because the job is very important to him. It provides stability and predictability and supports a coherent life story based on culturally defined standards of consumption, parenting and success. The job therefore supports ontological security, even though it leaves Anthony vulnerable to physical and mental harm.

The long-term health benefits associated with alternative transport need to be a priority for the individual if appeals to transport behaviour change based on alternative transport’s health benefits are to be successful. Long-term health and wellbeing for the self was not explicitly articulated as part of coherency for any of the people with whom I spoke. Of course, attending to the components of coherency such as family and work logically requires personal health. While the connection between health and alternative transport was understood, individual health was not an explicit priority. The promotion of transition through raised health awareness alone is therefore unlikely to result in large-scale change.

This section has reviewed a number of implications for transition revealed by viewing automobility as sustained by a need for ontological security. A number of sticking points were identified. These are complex sites of resistance that have potentially been overlooked or underestimated in existing attempts to enact transition away from automobility. The maintenance of ontological security, however, is a life project. It is open to modification and revision. What gives an individual's life coherency – or what is subjectively important – is therefore able to be shifted. The final section of this chapter is dedicated to a discussion of the timing of transition. I focus on the implications of a conceptualisation of mobility practices as based on ontological security on the 'right time' for transition.

Timing Transition

Tipping points

At the beginning of Chapter Eight, a picture was painted of lives given meaning through family, work, material gain and being respected and recognised (see pages 219-226). A common coherent story was constructed from these components, being that work becomes a vehicle for material accumulation as well as the attainment of respect, recognition and 'making a difference'. In most cases, work also supports family, which all participants identified as the pinnacle of what is important to them. At present, automobility supports this story in a number of ways and in Chapter Eight it was proposed that transition away from automobility would pose significant threats to its construction. There must be a point, however, where not to change is more threatening than to remain the same. If the problems associated with automobility could be positioned as obstructing this story, it would be automobility, rather than alternative mobility, that would pose a threat to ontological security.

In their book "After the Car" Kingsley Dennis and John Urry unpick the role of systems of change in taming automobility. They use systems theory to explore the concept of

tipping points or “chaos points when systems may tip from one path to another” (Dennis and Urry 2009, 59). They invoke tipping point discourse (extremely popular in discourse around climate change (Russill and Nyssa 2009)) to discuss the way a system can pass through a particular threshold and switch direction, often at rapid pace. Urry (2008, 277) proposes that there are “moments of heightened openness” where the pre-existing systems are open to modification and subsequent transition. These are times and spaces where change is in the air. Often these moments inspire rapid change where a system reaches a tipping point and passes a particular threshold. Again, it is the system that needs to pass a certain threshold for change to occur rather than, necessarily, the individual that lives within the system.

Dennis and Urry (2009) and other proponents of the new mobilities paradigm, have contemplated the idea that the car system is “ ‘ripe’ for tipping” (Dennis and Urry 2009, 133), tentatively proposing that this contemporary period of late modernity as characterised by constant adaptation is one in which change is, indeed, in the air. Urry (2008) identifies various contemporary examples of “ ‘small’ developments that might in their dynamic interdependence tip mobility into a new system” (Urry 2008, 279). These developments are positioned as indications that the car is not entirely secure in its domination and they include a shift in transport policy towards developing alternative mobility and global awareness of peak oil. Urry admits, however, that these changes remain nascent and that the system of automobility, has hardly reached the “‘chaos point’” (Dennis and Urry 2009, 133) required to effect extreme transformation. These small changes are perhaps signs of the potentiality for change but do not yet promise that change will occur.

Teachable moments

The tipping point thesis suggests that there are times in life when change feels right. For Urry, these are collective “moments of heightened openness, when the die is less cast and various possible alternatives are structurally placed on the table” (Urry 2008,

277). I propose that these times are just as real for the individual and just as influenced by individual capacities and personal situations as they are by collective structures.

There are many ways of thinking about when the 'right' moment to pursue transport behaviour change might be. In public health and sustainability discourse these times have been labelled 'teachable moments' and they are often positioned as times when other change occurs. For example, Smith et al. (2012) have argued that Australia's introduction of a tax on carbon might be an appropriate time to challenge habits of energy use given popular inclination to seek monetary savings through adaptation. Bas Verplanken has similarly proposed the 'habit discontinuity hypothesis' highlighting how disruptive events, such as moving house, can bring a subconscious habit to the surface and thus provoke reflection on its utility (Verplanken et al. 2008). Verplanken proposes that "these events represent windows of opportunity during which the level of sensitivity, openness and receptivity to behaviour change intervention is increased" (Smith et al. 2012, 3).

In the context of the journey to work, a teachable moment might be a change in workplace location presenting heightened awareness of the journey to work and subsequently the opportunity to change travel mode (as proposed by Thøgersen 2009). Although they are moments of heightened awareness of transport behaviour, I propose that office relocations are not teachable moments for transition to alternative transport.

Nine participants in my study had experienced such change relatively recently when their employers had relocated. All described their employer's attempts at workplace travel planning whereby, potentially prescribing to the teachable moment concept, the employer encouraged employees to access the new workplace using various alternative modes. All nine participants, however, either continued to drive or used the opportunity to switch from alternative to car-based transport. Proponents of the teachable moment may say such a moment was lost. Indeed, given that employees were provided with parking on site, the strength of the employer's conviction to discourage the use of the car for the journey to work is questionable. The idea of

automobility as ontologically securing, however, suggests that for a shift as monumental as the abandonment of the car for the journey to work, a teachable moment is more likely to arise during times of stasis rather than flux – that is, when all else remains equal. If the routines and predictability associated with the workplace location have already been shifted and/or the autonomy of the employee has been undermined by a forced relocation, it is unlikely that the employee will also be open to relinquish the routines and autonomy associated with driving to work. This was clearly expressed by Melissa in the context of her employer's relocation:

Melissa: But when we moved, they were pretty good about it. There was, when we moved from [previous location] to here, there was a bus service set up and they [Melissa's employer] had a service we could use and they had specific buses that went from here to Blacktown, Parramatta, Pennant Hills, [pause] yeah, they organised bus travel. And there were a few services I could have used. But, yeah, I was already having to go somewhere new and I didn't want to be restricted to their times as well. So I still drove.

Most participants described feeling varying degrees of resentment towards the employer for enforcing a move, with very little enthusiasm to comply with attempts to shift transport behaviour. Indeed, some had even switched from taking public transport to driving post relocation, even though public transport accessibility was similar at the new location. Frederick's train journey to his original location, for example, would have been extended by ten minutes for him to access the new location. He used this as justification to start driving to work. It was as though the comfort and convenience of driving somehow compensated for the imposition of a change of workplace.

Teachable moments are linked to behaviour change research in that they also reference a cue to action required as a precursor to change (Weick 1993). Again, the idea of a tipping point, or a moment where change seems palatable, is suggested. These moments are also referenced in practice theory where it has been proposed

that transition requires moments of heightened awareness when the seed of a different routine is planted (Shove and Pantzar 2005).

What might such moments look like? Conversations around the office water cooler where journey times are compared? An out of action car forcing its driver onto the train? A series of particularly long and congested trip to work? An interview with a university student proposing a different way of travelling? The opportunities are endless, contextual and no doubt incredibly personal. Further research is required where those who have recently changed transport mode are asked to tell the story of moments culminating in their decision to travel in a different way. The point here, however, is that for such moments to effect a shift in practice, to change needs to be ontologically benign when compared to maintenance of the status quo.

Many of the people to whom I spoke could articulate points at which they might change: "I suppose if the traffic got really bad" (Anthony), "if we had the trams like Melbourne" (Melissa), "when the kids are older" (Jackie). In practice the extent of their car use, persisting as it has through increased petrol prices, changing work locations, congestion and awareness of various environmental consequences, suggests that for some people, at this point, to access work by another mode would simply be too threatening to their existing way of being in the world.

Conclusion

Previous chapters have proposed that the car is highly embedded in the way some people make sense of the world and their lives. It is used in pursuit of what is important in life and to maintain coherency which is supported by predictability, autonomy and acceptance. Taken together, these pursuits have been labelled as motivated by the need for ontological security – a need to have “a centrally firm sense of [one’s] own and other people’s reality and identity” (Laing 2010 [1960], 39).

This chapter started by outlining a number of ways that existing paradigms of mobility have treated transition towards alternative transport. The implications of automobility as ontologically securing on opportunities for the increased uptake of alternative transport were explored. The concept of there being a right time to encourage transition was also discussed where it was proposed that changes to mobility practices are best pursued during times of stasis rather than flux.

This chapter has also identified a number of ‘ontological sticking points’. These are complex sites of resistance that have potentially been overlooked or underestimated in existing attempts to encourage change away from automobility.

Many of these sticking points relate to the idea that people will not ‘choose’ to be mobile in ways they perceive to be ontologically threatening. The outcome of this observation is that in the absence of strategies to address the role of the car in sustaining commonly accepted notions of what gives life coherency, coercion will be required to enact change. This is not only undesirable from an ethical perspective, it also raises complex issues of the place of transition within the existing political economy. It is possible that because the car is so deeply embedded in modern life, coercive policies to date have underestimated the magnitude of coercion required to tip the individual into new ways of thinking about and practising mobility.

This idea that automobility is relatively insensitive to coercion is a product of its systemisation. Having used the 20th Century to utterly embed itself in a vast array of

social and technical systems, automobility is now very much viewed as a cultural entitlement. It is entirely linked to ideals of individual autonomy. However this is not just the freedom to be instantaneously mobile – it is more than the ability to master daily minutia of time and space. Automobility facilitates deeper freedoms, such as the freedom to separate work from home by a (subjectively) acceptable distance, the freedom to participate in socially acceptable ways of working and the freedom to choose when to retreat in comfort and when to embrace discomfort.

Resistance to alternative transport also needs to be considered in the context of the already tenuous position of ontological security in modern life. The significant social and economic developments characterising social organisation since the early 1980s have been theorised as augmenting the sensitivity of ontological security to disturbance (in particular Giddens 1991). In the ‘pre-modern’ world, ontological security was prescribed, if not necessarily guaranteed, by sanctuaries of tradition, religious faith and systems of face to face kinship. Old securities have been diminished and replaced in part by a focus on individual autonomy. This autonomy is finely balanced with other characteristics of modern life, including increased surveillance, the unquestionable domination of capitalistic commodification and rising uncertainties associated with, for example, global warming, peak oil and terrorism. At a very practical and individual scale, this might be experienced as sleepless nights in poorly constructed high density housing or the rush to reserve a favourite desk space at work each morning. Wedged between an inadequately ventilated, noise affected apartment and an entirely uncertain office environment, 45 minutes alone in the air conditioned cocoon of the private car is understandably a welcome retreat.

In short, the need to maintain predictability, exercise autonomy and seek acceptance has been augmented by modern life. Removing the predictability, autonomy and acceptance associated with automobility takes on new significance when automobility is conceptualised as one of the last bastions of the individual’s experience of these elements in the modern world.

There are tangible strategies available to encourage change and many of these lie within the boundaries of what might be considered ontologically benign. It is unlikely, however, that the predictability, autonomy and acceptance associated with private car based automobility will ever be replicated. For many people, change will bring unprecedented disruption to ways of being in modern life, and it will not be embraced by choice.

A conceptualisation of the complexity of change implied by a shift to alternative transport is the key contribution of this research. The following chapter concludes this thesis by further summarising the basis of this contribution, exploring some opportunities for its application to future research and implications for policy.

Conclusion

This research explores collective preferences for automobility to demonstrate the way private car use is deeply embedded in modern life.

The study employs a grounded theory methodology to demonstrate an orchestrating role for the meanings and feelings experienced by the individual agent in practices of mobility. I have argued that the meanings embedded in the practice of driving, including those related to sensibility (such as feeling safe, cool or tranquil), need to be considered in conceptualisations of ways to shift mobility practices. I have illustrated how the concept of ontological security can be used to frame these meanings. As a concept that is both individually experienced and culturally inculcated, ontological security bridges a gap in conceptualisations of meaning in practice theory by linking meaning to various collective cultural patterns. Theoretically, this position implies a degree of fluidity in the place of structure and the agent in shaping mobility. While accepting the existence of complex networks of power, knowledge and authority in shaping mobility practices, I propose that the effects of these networks are inextricable from the experiences and actions of those who practise being mobile in the course of their everyday lives.

From this position, my research demonstrates the way benefits associated with automobility must be considered in any understanding of barriers to the uptake of alternative transport. These benefits need to be conceptualised as deeper than traditional utilitarian approaches have proposed. The car as a time saving device is perhaps not nearly as relevant as the role automobility plays in fulfilling individual interpretations of cultural notions such as predictability, autonomy and acceptance in everyday life. These benefits cannot necessarily be neatly positioned as emotional or symbolic associations with automobility. They are simultaneously perceived and practised, related as much to rational decisions to comfort the self as they are to emotional yearnings for freedom, control and social acceptance. Dismissing prioritisation of the symbolic over the rational, and the structure over the agent, I propose a model of resistance to alternative transport based on the notion of ontological security - a need to have "a centrally firm sense of [one's] own and other people's reality and identity" (Laing 2010 [1960], 39). This model enables a clearer

understanding of the depth to which automobility is embedded in ways of negotiating the complexities of modern life. Through its associations with predictability, autonomy and acceptance, automobility is a key tool in the creation and maintenance of coherency in life and one that for many people cannot be easily detached from the things that really matter. A shift to mobility practices away from private car use will only occur in the face of unprecedented disruption to existing ways of 'being' in modern life.

A conceptualisation of the depth to which automobility is embedded in modern life and the complexity of change implied by a shift to alternative transport is the key contribution of this research. This contribution is based on a study which, as for all research, inevitably has its limitations. Some of these limitations will now be addressed.

Study limitations

As is characteristic of qualitative research (and, arguably, also with quantitative research (Sofoulis 2009)), my conclusions are not necessarily representative. In Chapter Five (see pages 93-94) I acknowledged context, and that any knowledge 'created' by my study is a product of the specific interactions I have had in both spatial and temporal context with study participants. This includes my own background and experiences, as well as those of the people with whom I spoke. I do not judge my participants' transport practices as measurable, static entities. The words of the people I interviewed are not a guaranteed entry point to their internalised attitudes and motivations or even to their external practices. Instead, they are records of the ways that barriers to alternative transport are brought to life in conversations about the daily practice of getting to and from work.

My study's findings may or may not apply to the millions of others whose collective journeys to work by car create the problems associated with automobility. Given the complexity of automobility and the implications this has for the uptake of alternative transport, however, it is questionable whether reasons for its persistence can ever be generalised. The multiplicity of ways the private car supports modern life is undeniably difficult, if not impossible, to quantify. An inability to calculate and measure, however,

is not a valid reason to eschew an area of research that is in dire need of deeper understandings. These understandings can only be developed in conversation with those who, each weekday morning, drive their car to work.

Just as these findings are not necessarily representative, nor are they necessarily unique. Beyond drawing pictures of population subsets based on various socio-demographic profiles, the persistence of the practice of driving to work suggests that the study's participants are not atypical. There are many others who continue to drive to work each day in the face of increased congestion and awareness of the environmental and health harms associated with the practice of automobility. Some of these people may also be aware that the same trip by bus, train, bike or foot might be quicker for them from time to time. There are, therefore, potentially many others using automobility as security in a society and culture that is increasingly characterised by uncertainty.

Opportunities for empirical encounters with these 'others' exist, and the depth of the outline of my theoretical framework and subsequent assumption of methodologies and methods aims to support these encounters. The detail of this outline (in Chapters Four, Five and Six) is provided in part to inform future research where automobility, and other problematic practices, cannot be explored using a utilitarian or symbolic focus in isolation.

Other Applications of This Research

Applying Methods

There is a variety of ways that the methods and findings from this research can be applied to explorations of problematic practices that seem to be 'stuck'.

Time is often positioned as an impediment to the uptake of healthier or more sustainable practices. A lack of time to cook, for example, is cited as a reason for the way fast food features in daily practices of eating and sourcing food. Programs such as Jamie Oliver's "Fifteen Minute Meals" – promoting home cooking that is "delicious, nutritious, super-fast ... and perfect for busy people like you and me" (Oliver 2012, ii) –

attempt to address this impediment by teaching people how to cook healthy food, quickly.

My research suggests that time is not as much an obstacle to the uptake of alternative mobility as transport policy and planning anticipate. A major part of developing this position was the exploration of the daily practices and perceptions of those who continue to drive, despite having access to time competitive alternative transport. Looking sideways from the car, there is scope to apply the way this study treats time to other change resistant problematic practices.

Time as a barrier to the uptake of certain practices, and a facilitator to the prioritisation of others, is a complex issue. There are opportunities for research to further question the relatively utilitarian treatment of time by 'peeling back' its layers to focus more on what time actually symbolises when it sustains unsustainable or otherwise problematic practices. This study did this by making alternative transport 'time competitive' with automobility, however there are many ways time can be removed from consideration of competing practices. Is it that unhealthy eating is supported by the absence of 15 minutes to cook Oliver's 'Incredible Delicious Chicken Salad' or the inability to muster the energy and enthusiasm required for such a culinary adventure in between work and walking the dog?

Validating Findings

A more logical avenue for further research is to pursue validation of my findings in the context of different groups of car users. These groups may or may not be undertaking different trip types, such as for recreation or education. They might be in different cities or in different parts of the same city.

In the context of shifting transport practices, it would be beneficial to explore the extent to which ontological security is supported by alternative transport modes. For those using alternative transport, a horizontal application of the concept could yield interesting conclusions about the role of other, non-transport related places and practices in supporting ontological security. What other places and practices of retreat, empowerment and ways to comfort and nurture the self, do alternative transport users find in the absence of automobility? This research would be useful to validate my

conclusion that these components of ontological security are valued in modern life. It would also be interesting to explore the components of coherency for those using alternative transport. Are the things that matter to people less embedded in automobility different, or is it simply that they have access to different infrastructure and opportunities to be alternatively mobile?

A Cautionary Note on Applications of Ontological Security to Transport

Caution needs to be used, however, in any attempt to draw further implications for change from studies on alternative transport users. Of course there will be many people who experience predictability, autonomy and acceptance from the use of alternative transport. For example, for some, the daily rhythms of a predictable bus trip may bring comfort, the ability to master a complex subway system may foster autonomy or the ride to work alongside familiar bodies on bikes may cultivate a sense of belonging. This conclusion adds very little value to the task of shifting the transport practices of those currently secured by automobility. This is because subjectivity remains a key element of ontological security, which although culturally inculcated is still individually experienced and defined. The specific details of its components are not necessarily transferable from individual to individual. The sense of autonomy I get from riding my bike, for example, cannot be transferred to Diane who would find it inherently disempowering and socially isolating. The conclusion of this study has not been to suggest that the practice of automobility is any more, or less, able to support ontological security than alternative transport. Instead, it is that for the people I spoke to, and potentially for many others living auto-mobile lives, automobility supports ontological security.

Policy Implications

Chapter Nine alluded to a number of implications of automobility as ontologically securing for policies promoting alternative transport. In an effort to avoid over contextualisation and thus simplification of the conclusions of this research, I conclude with a number of very broad suggestions for transport policy.

The most obvious policy implication is that any approach to the promotion of alternative transport based primarily on making it time competitive is inherently flawed. My research suggests that people are not as interested in saving time as they are in keeping life predictable, retaining autonomy and conserving the energy they perceive as wasted on the discomfort associated with alternative transport use. This finding confirms and deepens existing understandings of transport behaviour which have long recognised the myth that transport is a product of utility alone. Yet transport planning continues to prioritise rational and instrumental motives for mobility over those that are less quantifiable. As an example, In June 2012, the NSW government announced the release of a suite of transport plans. The key aim of the planning process was to establish a guide for funding decisions to support the State's economic performance (Transport for New South Wales 2012a). The release included a plan to modernise Sydney's rail system (Transport for New South Wales 2012b). This plan articulates the accommodation of a rapid transit service incorporating a fleet of new single deck metro-style trains designed to maximise capacity by minimising available seating. It has been calculated that, in some instances, the new rapid transit service might save commuters up to eight minutes of train travel time, potentially reducing a 43 minute trip to 35 minutes.

It is politically and practically appealing to attribute a collective aversion to alternative transport to something as quantifiable as time. However my findings suggest that to sacrifice the comfort of seating for an eight minute time saving is unlikely to entice more commuters onto the train. To stand for 35 minutes in a crowded train twice daily is physically uncomfortable and to willingly endure such discomfort threatens deeply embedded cultural notions of freedom and the right to nurture the self. Transport planning based on rational instrumental factors such as time needs to be balanced with consideration of the deeper meanings inherent to mobility.

A second policy implication relates to the finding that the car is unlikely to disappear from the lives of Sydney's suburban office workers. While I concur with those who suggest that low-density cities can be structurally well serviced by alternative transport (see for example Mees 2009a), I assert that a 'no car' urban utopia is an impractical pursuit in a low-density city characterised by a dispersed geography of employment and a population highly comfortable and indeed secured living lives that are auto-

mobile. “Of course the car is here to stay” (Freund and Martin 2009, 477) and recognising this has significant implications for transport policy.

Policy provision for ongoing automobility should fill a comfortable space in transport planning. This will inevitably mean planning for people to drive less, through provision of alternative transport infrastructure. It may also mean the further affirmation of a place for the car that is not privatised, such as through car sharing programs. However there will need to be continued provision for people to drive with less impact, using alternative fuels and technologies. In addition, this finding gives mandate for better integration of automobility with alternative mobility planning. These are regularly positioned as competing agendas, however a dichotomous view of mobility as either car-based or alternative is an unhelpful approach to conceptualisations of the way mobility is practised and ways these practices might be shifted. There being a technological and socially modified role for the car in the future suggests a need to move beyond essentialist understandings of automobility that view the car as demonised and its demise inevitable. The car in the future should be conceptualised as ‘tamed’ rather than entirely restricted or non-existent.

A final and overarching policy implication is that greater attention needs to be paid to the way automobility exists not only in other structures of political economy, but also in the lives of ordinary, everyday people. For many people, automobility supports the things that matter in modern life, including family and work. The way that security is felt as increasingly under threat, and the implications of diminished security in other areas of life, such as housing and employment, need to be considered in the planning and promotion of alternative transport. Further, planning and policy relating to housing and employment need to consider transport as more than just a matter of accessibility. For many people a shift to alternative transport is an imposition on deep-seated notions of freedom and entitlement as much as it is on their time, income and personal space.

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Appendix 1: Participant Recruitment Questionnaire (including summary of responses)

Questionnaire: Your Daily Trip to [INSERT COMPANY NAME]

This questionnaire is part of a PhD research project at the University of New South Wales. It is about the way people travel to work in areas outside of the Sydney Central Business District.

[COMPANY NAME] has been selected to take part in the study because of its location in Macquarie Park. The information you can provide will significantly contribute to research on the way people in Sydney travel to work, and the time it takes them. These issues are central to current urban planning and transport debates in our city.

Choosing to participate in this questionnaire is an opportunity for you to contribute to these debates and help us better understand our cities. We will be asking about the way you travel to work and how long it usually takes you. Please be assured that your individual response and the details you provide will be kept completely confidential. An information statement outlining some background to this project and how your confidentiality will be assured can be found on the next page to the questionnaire.

The questionnaire should take no longer than 5 minutes to complete and by participating you have the opportunity to go into a draw to win one of three \$100 WISH gift cards. If you have any questions, please do not hesitate to call or email me, Jennifer Kent, at z3295541@unsw.edu.au or on 0412 625 234.

I look forward to receiving your response and thank you for your time.

Sincerely,

Jennifer Kent
PhD Candidate
Faculty of the Built Environment, University of New South Wales

PROJECT INFORMATION STATEMENT

“Your Trip to Work Questionnaire”

Ethics Approval No.: 115041

By filling out the following questionnaire, you are participating in a PhD study based at the University of NSW. Continuing with the questionnaire by clicking "next" below indicates that, having read and understood the information provided in this information statement, you have decided to participate.

Description of study: If you decide to participate, we will ask you to fill out a questionnaire which should take no longer than five minutes to complete. We cannot and do not guarantee that you will receive any benefits from this study.

Confidentiality and disclosure of information: Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission, or except as required by law. The collective results of this study will be published in a doctoral thesis. This collective information will therefore be disclosed to the examiners of the thesis and, if successful, a copy of the thesis kept in the Library at the University of NSW.

Recompense to participants: By filling-in the questionnaire you have the option to go into a draw for the chance to win one of three \$100 WISH gift cards. You will need to provide your name and a contact e-mail address or phone number if you elect to be entered into this draw.

Your consent: Your decision whether or not to participate will not prejudice your future relations with The University of New South Wales or other participating organisations.

If you have any immediate questions, please feel free to contact Jennifer Kent at z3295541@unsw.edu.au or by phoning +61 412 625 234.

If you have any additional questions later, please direct them to:
Associate Professor Susan Thompson Co-Director, Healthy Built Environments
Program, Faculty of the Built Environment, University of NSW, Sydney, NSW, 2052,
AUSTRALIA

P: +61 2 9385 4395 F: +61 2 9385 4507 E: s.thompson@unsw.edu.au

Complaints may be directed to the Ethics Secretariat, The University of New South
Wales, SYDNEY, NSW, 2052, AUSTRALIA

P: +61 2 9385 4234 F: +61 2 9385 6648 E: ethics.sec@unsw.edu.au).

Part 1: About the way you travel to work:

1. From the options below, which best describes the way you currently travel to work on most days?

- I drive to work on my own
- I drive (or I am driven) to work with another person
- I drive (or I am driven) to the station and catch the train to work
- I drive (or I am driven) to the bus stop and catch the bus to work
- I ride a motorcycle or scooter to work
- I walk to work
- I walk to the station and catch the train to work
- I walk to the bus stop and catch the bus to work
- I cycle to work
- I cycle to the station and catch the train to work
- I cycle to the bus stop and catch the bus to work
- Other (please describe):

2. Question 1 covers the way you travel to work on most days. Are there times in the average working week where you travel to work in a different way? For example, on most days you drive but once a week you might walk or catch the train.

- Yes
- No

3. From the time you leave home to the time you arrive at work, how long does your average trip to work currently take?

- Less than 10 minutes
- Between 10 minutes and 20 minutes
- Between 20 minutes and 30 minutes
- Between 30 minutes and 40 minutes
- Between 40 minutes and 50 minutes
- Between 50 minutes and 60 minutes
- Between 60 minutes and 70 minutes
- Between 70 minutes and 80 minutes
- Between 80 minutes and 90 minutes
- More than 90 minutes

4. What time, on most days, do you start your trip to work?

- Before 7am
- Between 7am and 9am
- Between 9am and midday
- After midday

5. Do you regularly (for example more than 3 days per week) combine your journey to work with other activities (such as dropping children to school)?

- Yes
- No (continue to question 6)

5.a. If yes, please describe:

5.b. How much extra travelling time do these activities normally add to your trip to work?

- Less than 10 minutes
- Between 10 minutes and 30 minutes
- Between 30 minutes and 60 minutes
- More than 60 minutes

Part 2: About the place your trip to work starts:

We need to know some approximate information on the area you leave to come to work. This is likely to be the neighbourhood where you live.

Providing this information will not disclose the actual starting address for your trip to work. It is, however, an approximation that is an important part of our research. Please be assured that any information you do provide will remain confidential.

6. On most days, where, approximately, do you travel to work from?

The street:

A nearby cross street:

The suburb:

Part 3: About you

7. How often do you travel to work at the [COMPANY LOCATION] campus of [COMPANY NAME]?

- 5 or more days a week (full-time)
- 3 or 4 days a week
- 2 or less days a week

8. What is your current age group?

- 18-34 years
- 35-54 years
- 55-64 years
- Over 65 years

9. What is your gender?

- Male
- Female

10. To thank you for your time today, we would like to enter you in a draw to win a \$100 WISH gift card. Is this ok?

- Yes
- No

11. We would like to discuss the trip to work in more detail with some people.

Would you be willing to participate in a follow-up interview?

The interview will be conducted over two half hour sessions, and will be arranged at a mutually convenient time and place. Participants in the follow up interview will be given a \$25 WISH gift card as a token of thanks for their contribution. This is in addition to the participation draw mentioned above.

(Note that selecting "Yes" indicates that you allow us to contact you to arrange an interview. The number of participants selected for interview is limited, and we cannot guarantee that you will be contacted).

- Yes
- No

12. If you answered "Yes" to questions 10 or 11 above, we will need to be able to contact you and therefore request the details below. Please be assured this information will be filed separately from this questionnaire to ensure your privacy.

Name:

E-mail address:

Phone no:

Thank you for your time.

Summary of Responses

Figure A1.1: Summary of responses to survey question one: mode-share

Question 1. From the options below, which best describes the way you currently travel to work on most days?

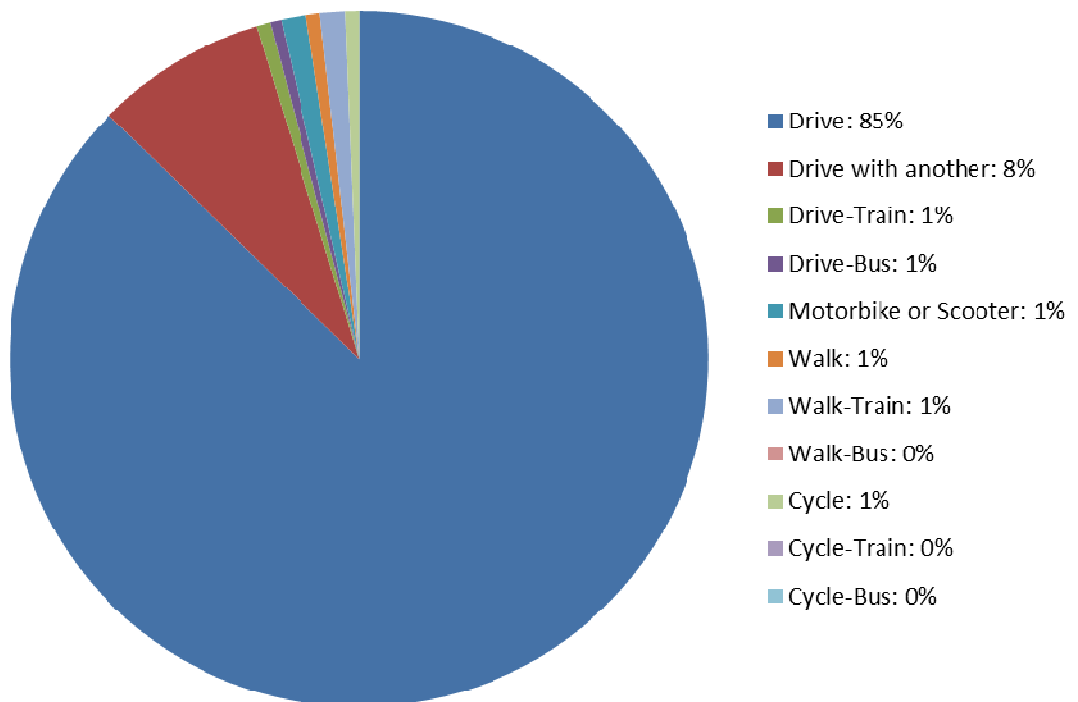


Figure A1.2: Summary of responses to survey question two: mode consistency

Question 2. Question 1 covers the way you travel to work on most days. Are there times in the average week where you travel to work in a different way?

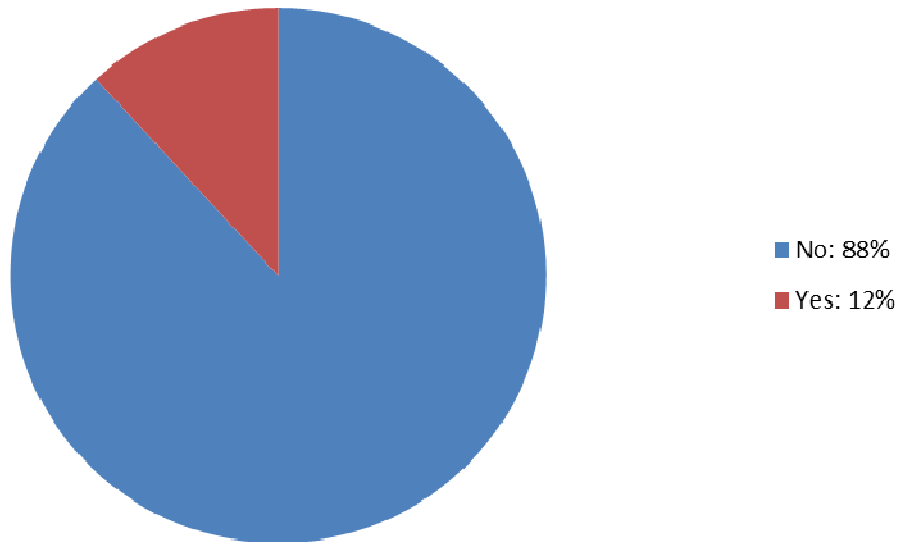


Figure A1.3: Summary of responses to survey question three: perceived journey time

Question 3. From the time you leave home to the time you arrive at work, how long does your average trip to work currently take?

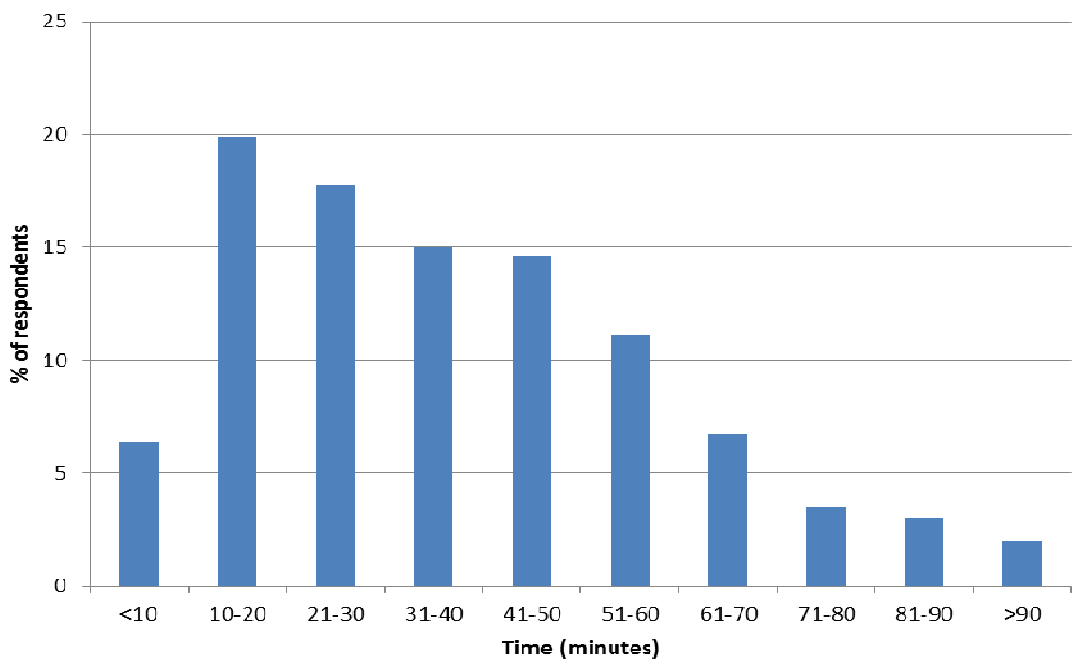


Figure A1.4: Summary of responses to survey question four: time of trip commencement

Question 4. What time, on most days, do you start your trip to work?

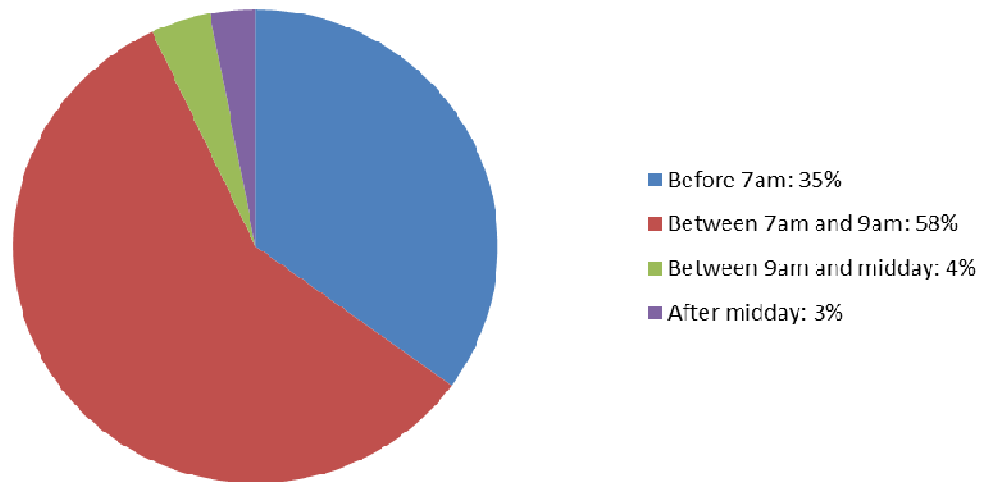


Figure A1.5: Summary of responses to survey question five: regularity of trip chaining

5. Do you regularly (for example more than 3 days per week) combine your journey to work with other activities (such as dropping children to school)?

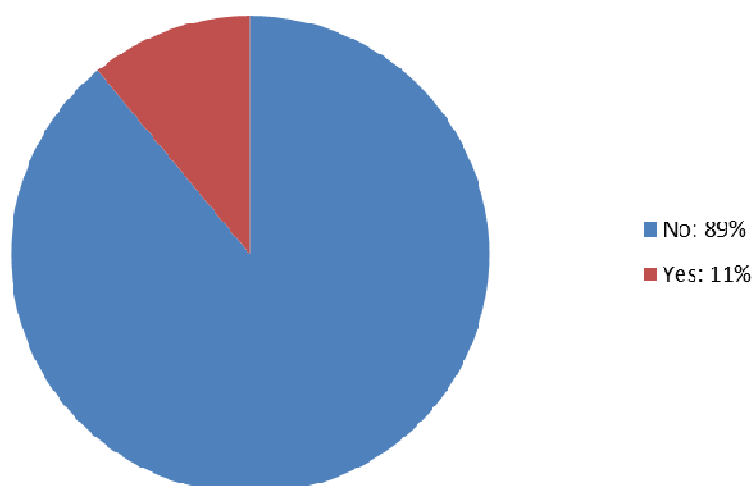


Figure A1.6: Summary of responses to survey question seven: regularity of trip

7. How often do you travel to work at the [COMPANY LOCATION] campus of [COMPANY NAME]?

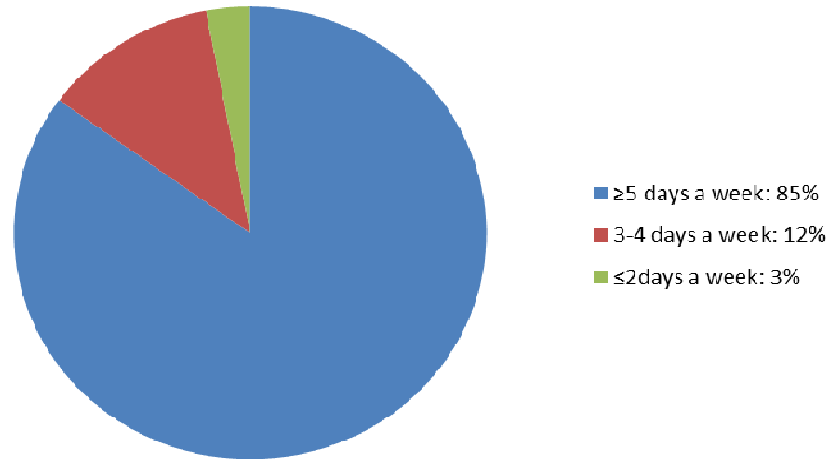


Figure A1.7: Summary of responses to survey question eight: age group

8. What is your current age group?

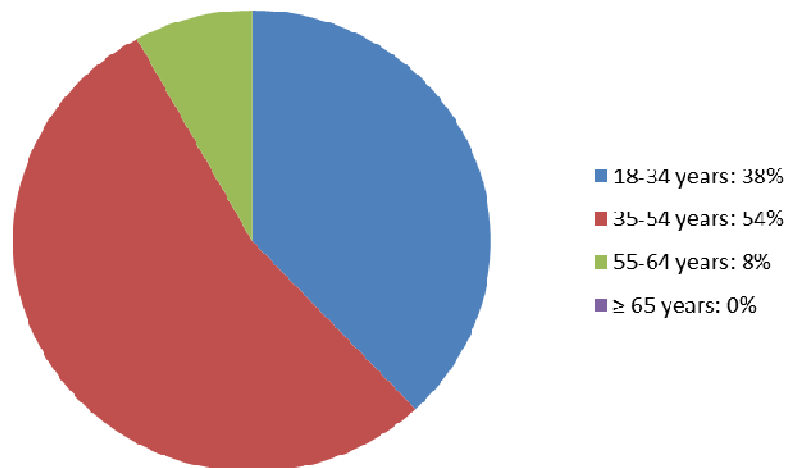
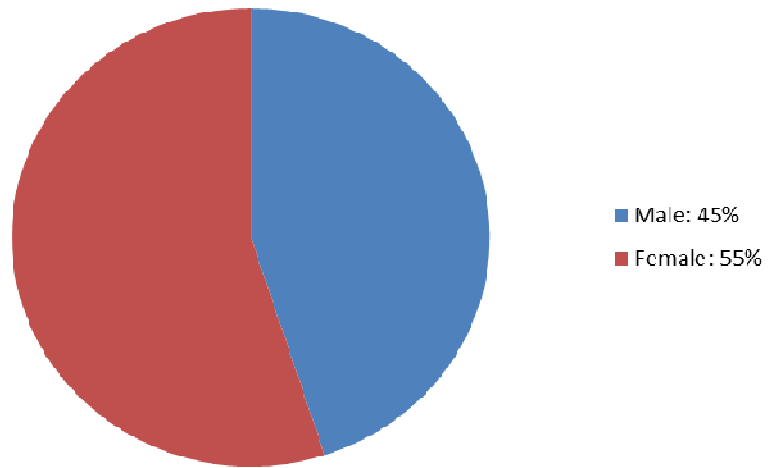


Figure A1.8: Summary of responses to survey question nine: gender

Question 9. What is your gender?



Appendix 2: Sample Interview Guide 1

Interview guide: Interview 1

Name: XXX, 35-54, female

Company: XXX

Current Trip: Drives 20.3km from XXX to XXX

Sub Trip: Walk to bus stop Joseph Banks T-Way Station, Kings Langley to take the 740 bus

-
1. Let's start by talking about your work at *[insert company name]*.
 - a. How long have you worked for *[insert company name]*?
 - b. And has all that time been at *[insert company location]*.
 - c. And you live in *[insert suburb of residence]*. Have you been there long?"

 2. Now I'd like to chat about the way you get to work each day and I hope it's ok but I'd like you to go into some detail about your trip. I am interested in what you do on most days, but don't be afraid to talk about abnormal days as well. I understand you mostly drive to work.
 - a. Can you describe your trip for me. Which way do you go?
 - b. Is there anything about your trip that you like?
 - c. What parts of your trip do you not like?
 - d. What do you do during your trip, for example, do you listen to music?
Talk on the phone?

Thanks for describing that. Is this a normal trip for you?

3. So you've driven to *[insert company name]*. I'd like to chat about what happens when you get there.
 - a. Where do you park? Do you have an allocated parking space? Is that normal?
 - b. When you get inside the office, do you usually go straight to your desk or office?

4. Now, this might seem strange, but, can you tell me a little bit about what you do before you come to work each morning? For example, maybe start with something you did to prepare yourself for work and go from there.
5. Now we're going to go in reverse and talk about your trip home. Let's start at the office, can you tell me about what you do in the lead up to getting in your car and leaving?
6. So you're in your car and heading home. Can you tell me a bit about your trip home?
 - a. Is it different from your trip in?
 - b. Do you go a different way? Why?
 - c. Do you enjoy the trip or just want to get it over with so you can get home?
 - d. Do you normally head straight home?
7. Thanks. Now, when you get home? What happens then?
 - a. Do you park the car in your own garage or on the street?
 - b. Do you have a routine for when you get home, a kind of order you do things in?
 - c. Do you do anything specific to unwind from work once you've arrived home?
 - d. Do you like where you live?
8. We've talked about your trip in some detail – thanks for being so open. Now I'd like to talk about your trip more generally.
 - a. I'm interested in your thoughts about why you travel to work the way you travel?
 - b. What do you like about it?
 - c. What don't you like?
 - d. Have you always travelled this way?

9. Ok. So, a little bit about what you do here at work. What do you do?
10. Do you enjoy what you do?
11. What would you say work means to you?
12. Thinking through your day. Have you ever really thought of what takes up most of your time? What you spend most of your time doing?
13. Sometimes we spend a lot of time in our day doing things that are not necessarily the most important things to us. What is important to you? If you could pick a few words to describe yourself, what words would you use? What is it important for you to be? To be good at? And what do you think you do to be good or to nurture at those things?
14. Again, thanks for sharing that. Can you tell me a bit about the things that make you happy. And those that concern you? Perhaps start with day-to-day things, what gets you riled? And more broadly? Do you worry much about anything in particular?
15. Is there anything that we've not discussed that you'd like to tell me more about?

Thanks for your time. I'm now going to switch off my voice recorder.

(At the conclusion of the interview the date, time and place for the second interview will be confirmed).

Appendix 3: Sample Interview Guide 2

Interview guide: Interview 2

Name: XXX, 35-54, female

Company: XXX

Current Trip: Drives 20.3km from XXX to XXX

Sub Trip: Walk to bus stop Joseph Banks T-Way Station, Kings Langley to take the 740 bus

So, last time we spoke in a fair bit of detail about your trip to work, the ways you go, things you might do before and after. We also spoke about what you do here, about your job. Today I want to talk a bit more about you, not necessarily just as an employee here, but generally.

1. First of all, some general questions:
 - a. Were you born overseas?
 - b. If yes, country of birth?
 - c. If yes, how long have you lived in Australia?
 - d. Household composition
 - e. Relationship status
2. Have you always had a car? Like, for example, when did you get your licence?
3. And what sort of car do you drive?
4. Do other people in your household or around you generally, is the car the dominant form of transport?
5. I'm pretty interested in what you think about your options for travel. Part of my research is to analyse people's trips and see whether they could logistically

change the way they travel to work. Do example, can someone who currently drives to work catch a train, or walk, or cycle. We call modes other than car use “alternative transport”.

So, when I looked at your trip from XX to here, I worked out you could combine a bike ride with a train trip and get here in a very similar amount of time. I guess it would mean riding to XX and leaving a bike at the station, then catching the train and walking from the station to here. Can you imagine doing that?

6. What do you think your day would be like?
7. And going back to those things you mentioned last time we chatted were really important to you. How do you think they might change or be impacted?
8. Ok, so let’s talk a little bit about public transport here in Sydney.
 - a. When was the last time you took public transport?
 - b. Can you tell me about some of your experiences with public transport. What do you think about it?
 - c. Ok, can you tell me about any good [bad] experiences you might have had with public transport.
9. And what about walking or riding a bike for transport.
 - a. Do you ever walk or ride a bike to get from A to B?
 - b. Do you enjoy it? Have you ever had any bad experiences doing this?
10. So, I’m going to list a few different scenarios, and I’d like you to tell me whether they might make you think about using alternative transport.
 - a. Everyone else in the office travels to work by bus.
 - b. You read a study saying that people who use alternative transport on a regular basis are healthier than people who drive.
 - c. Someone close to you thinks you should use alternative transport more.
 - d. You do the calculations and work out it’d cost you \$5 less a day to use alternative transport.

11. What do you think might encourage you to use alternative transport more?

12. Just a few more questions, we're nearly finished. Can you tell me whether you agree or disagree with these statements:

- a. "Taking public transport is a good thing to do"
 - i. Agree
 - ii. Disagree
- b. "People who are important to me would say that I should take public transport"
 - i. Agree
 - ii. Disagree
- c. "Using public transport would be easy for me"
 - i. Agree
 - ii. Disagree
- d. "I intend to stop driving my car to work and take public transport"
 - i. Agree
 - ii. Disagree

Thanks for your time. I'm now going to switch off my voice recorder.