THE CONDUCT OF TRAVEL

BEGINNING A GENEALOGY OF
THE TRAVELLING SUBJECT

Jennifer Bonham

BA (Hons) Adelaide

Department of Geography &
Department of Politics

University of Adelaide

CONTENTS

ABSTRACT

Contemporary urban travel practices and in particular the widespread usage of automobiles have been examined by researchers through a variety of theoretical frameworks. The popularity of the motor vehicle and the concomitant unpopularity of other modes of travel are often attributed to human progress, the operation of capitalist relations of production, and/or the outcome of patriarchal social relations. Researchers who offer these explanations, both critics and protagonists of the motor vehicle, have tended to ignore, or discount, all those practices which disrupt or contradict their grand theories. It is argued in the present study, that in refusing to explicate the counter practices and counter stories of travel, researchers also ignore the potentially disruptive ways of thinking about and intervening in urban travel and urban space.

This research draws on the insights of feminist and post-structuralist theorists to open to question the way in which urban travel is presently reflected upon by urban professionals and the potential effects of these modes of reflection. Rather than focusing upon either automobile or non-automobile travel, this study locates driving, cycling, walking, skateboarding, roller-blading, and bus, tram, train, and wheelchair usage within a broader examination of urban travel practices and 'being in' urban space. The study uses the City of Adelaide, in South Australia, as a site through which to examine the way in which the spaces, bodies, and conduct of travel have been objectified and subsequently intervened upon by urban experts.

Urban travel is not taken for granted as something which can be known in more or less precise terms nor is it presumed to be something that is inherently worthy of investigation. The fact that a particular set of actions and interactions has been brought into discourse as urban travel, and the particular practices which constitute such urban travel, are themselves the object of the present enquiry. This study interrogates the conditions under which it became meaningful to create narratives about urban travel, the procedures and instruments through which practices were objectified as urban travel, the precise actions and interactions that were constituted as urban travel, as well as the interventions enabled through and the normalising effects of these processes of objectification. It is argued that the production of knowledge about being in and travelling through urban space operate to prioritise some practices over others and open up certain ways of intervening in urban space and urban movement. This focus on the production of knowledge about urban travel implicates urban experts (including researchers, planners, and administrators) in the proliferation and prioritisation of certain travel practices.

STATEMENT OF AUTHORSHIP

This work contains no material which has been accepted for the award of any other degree or diploma in any university or tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text.

I give consent to this copy of my thesis, when deposited in the University Library, being available for loan and photocopying.

Signed   Date _/5 - // - 0 2_

ACKNOWLEDGEMENTS

ABBREVIATIONS

ACC   Adelaide City Council
ACCA   Adelaide City Council Archives
GRG   Government Records Group
GRS   Government Records Series
MTT   Municipal Tramways Trust
SAOGS   South Australia, Office of the Government Statistician
SAP   South Australia, Parliament
SRO   State Records Office

1

INTRODUCTION

The travel practices prevalent in contemporary Australian cities and the ordering of the spaces in which travel takes place are often explained by reference to technological progress, the evolution of civilisation, the expression of individual choices, or the domination of some interests over others. These overarching theories of present day urban mobility, particularly the widespread usage of automobiles, paint over the daily resistances to dominant travel practices and offer little hope of changing these practices. The following study calls these explanations of urban travel into question and challenges the silence that greets all those disruptions to the ordering of everyday movement.

This research does not offer counter claims to each of the above theories of urban travel, nor does it propose a more 'accurate' history of urban travel. Rather, it discusses these explanations and their effects as it reflects upon the very possibility of a field of inquiry into urban movement. Drawing on the insights of post-structuralist theorists such as Michel Foucault, this thesis investigates the discursive techniques through which a particular set of actions and social relations have been separated out, scrutinised, and arranged into order as urban travel. Elaborating on Foucault, it is argued that the way in which movement has been (and continues to be) inserted into and ordered through discourse has privileging effects. This argument finds urban travel researchers implicated in, not detached from, the present day ordering of urban movement.

Importantly, this project began as a feminist study of the issues different women face in moving through the urban environment. It was particularly concerned with the problems women encounter when walking, riding bicycles, and catching buses and trains within the city. The study quickly shifted to a broader research frame to open a new approach to the problem(s) of women travellers. The shift in focus did not occur because women had nothing left to say about their journeys nor because the mobility issues identified by feminists had been addressed. Quite the contrary, it appeared there was still much to say about women's journeys especially as little had changed to assist the conduct of those journeys made on foot, bicycle, bus or train. Meaghan Morris' reflections upon feminist nagging seemed particularly apt in this context,

'she nags - he stops listening - nothing changes - she nags'.[1]

The failure of urban planning professionals to act upon feminist recommendations could be taken as 'proof' of the operation of patriarchal relations within the State working to impede women's mobility. However, this 'proof' contradicts the fact that mobility for some women, specifically those who own and use motor vehicles, has been encouraged and facilitated by agencies both within and beyond the State. Further, the reluctance to improve conditions for those who go by foot, bicycle, skateboard, bus, and so forth, undermine the mobility of a range of people, not only women. The gendered identity of individual travellers combined with the physical environment in which they travel will certainly give rise to diverse experiences of the journey. However, differences in the experiences of travel cut acutely both across and along lines of gender. The improvement in mobility for some groups of women, but not others, suggested that alternative explanatory frameworks had to be brought to bear on questions of urban movement. This introductory chapter provides a brief overview of the feminist literature on urban travel, and the problems that appear to be both embedded in the literature and reflected in policy initiatives. The discussion then proceeds to a reconceptualisation of the questions addressed in this thesis and outlines how the research task is to be addressed.

Other Beginnings

Feminist researchers such as Susan Hanson, Janice Madden, Sandra Rosenbloom, and Genevieve Guiliano, to name a few, began exploring the gendered outcomes of contemporary urban travel practices as early as the 1970s.[2] These writers were concerned with mobility as a mechanism through which women were impeded in participating in activities outside their homes. Feminists sought to make women visible within mainstream studies of urban travel and improve women's access to destinations outside of the home. They investigated women's journeys in relation to their domestic responsibilities, participation in paid employment, and use of public space. The collection and analysis of data through reference to gender was not entirely new but feminists contested the naturalisation of differences between men's

[1] M Morris, *The Pirate's Fiancee: Feminism, Reading, Postmodernism*, Verso, London, 1988, p15.
[2] J Madden, 'A Spatial Theory of Sex Discrimination', *Journal of Regional Science*, 17(3), 1977, pp369-80; P Hanson & S Hanson, 'The Impact of Women's Employment on Household Travel Patterns: A Swedish Example', S Rosenbloom (ed), *Women's Travel Issues: Research Needs and Priorities*, US Department of Transportation, Washington DC, 1978, pp127-69; S Rosenbloom, 'Women's Travel Issues: The Research and Policy Environment', S Rosenbloom (ed), *Women's Travel Issues: Research Needs and Priorities*, US Department of Transportation, Washington DC, 1978, pp1-40; G Guiliano, 'Public Transportation and the Travel Needs of Women', *Traffic Quarterly*, 33(4), 1979, pp607-15.

and women's journeys. Tracing out and problematising gender differences in travel provided a first step toward explaining and consequently addressing women's transport 'disadvantage'.

Feminist researchers have explained women's unequal access to, and use of, different methods of movement as the outcome of patriarchal relations operating within the home, the workplace and the State. Some writers have argued that men, positioned as household heads and breadwinners, have enjoyed priority in their access to household vehicles, while as workers men's higher incomes allow them more choice in their means of travel.[3] Further, it has been argued that patriarchal relations within and beyond the State have ensured that transport infrastructure, services, and the spatial organisation of the urban environment serve the interests of men rather than women.[4] The differences in men's and women's travel have been understood as both an outcome of patriarchal relations and a mechanism which reinforces these relations. Of course, these claims have been brought under question by feminists themselves as some have reflected upon women's active participation in urban processes while others have detailed the relation between patriarchy, capitalism, and the city.[5]

Feminists have made an important contribution to the study of travel by demonstrating that gender differences and the travel patterns arising from these differences are historically and culturally situated. They have also unsettled many of the assumptions and recommendations of mainstream researchers. For example, feminists have: contested the research methods deployed in the study of travel; challenged notions of objectivity and subjectivity; brought to the surface and valued explanations of how and why individuals make particular journeys in particular ways;

[3] For example: R Palm & A Pred,'The Status of Women: A Time-Geographic View', in D Lanegran & R Palm (eds), *An Invitation to Geography*, McGraw Hill, New York, 1973, pp99-109; P Forer & H Kivell, 'Space-Time Budgets, Public Transport and Spatial Choice', *Environment and Planning A*, 13, 1980, pp497-509; B Rutherford & G Wekerle, 'Captive Rider, Captive Labour: Spatial Constraints and Women's Employment', *Urban Geography*, 9(2), 1988, pp116-37.

[4] For example: S Saegert, 'Masculine Cities and Feminine Suburbs: Polarised Ideas, Contradictory Realities', in R Stimpson, E Dixler, M Nelson & K Yatrakis (eds), *Women and the American City*, University of Chicago Press, Chicago, 1981, pp93-108; K Hamilton & L Jenkins, 'Why women and travel?', in M Grieco, L Pickup & R Whipp (eds), *Gender, Transport and Employment*, Avebury, Aldershot, 1989, pp17-45; J Wajcman, *Feminism Confronts Technology*, Allen & Unwin, St Leonards, 1991, pp110-36; G Valentine, 'Images of Danger: Women's Sources of Information About the Spatial Distribution of Male Violence', *Area*, 24(1), 1992, pp22-29; M Kwan, 'Gender and Individual Access to Urban Opportunities', *Professional Geographer*, 51(2), 1999, pp210-22.

[5] For example: A Markusen, 'City, Spatial Structure, Women's Household Work and National Urban Policy', in Stimpson et al, *Women and the American City*, pp20-41; E Harman, 'Capitalism, Patriarchy and the City', in C Baldock & B Cass (eds), *Women, Welfare and the State*, Allen & Unwin, Sydney, 1983, pp108-33; K England, 'Gender Relations and the Spatial Structure of the City' in *Geoforum*, 22(2), 1991, pp135-47; K England, 'Suburban Pink Collar Ghettos: The Spatial Entrapment of Women', *Annals of the Association of American Geographers*, 83(2), 1993, pp225-42.

demonstrated gendered experiences of travel; and demonstrated the gendered outcomes of certain policy initiatives.[6]

Policy recommendations derived from feminist scholarship have sought to increase women's access to sites of economic, social, and political activity; however, and not surprisingly, feminists often differ on how this policy objective might be best achieved. Feminist scholars such as Sandra Rosenbloom, Virginia Scharff, and Gerda Wekerle have been sympathetic to, or recommended increases in, women's access to motor vehicles.[7] Others have argued for an emphasis on improvements in bus, tram, and train services together with changes in urban infrastructure to enhance conditions for walking and cycling.[8]

Through the past two decades, steady increases have been reported in the rate of licence holding amongst South Australian women. In 1986, 54% of all females held a motor car or motor cycle licence, while in 1999 this had increased to 62.7%.[9] National and international studies indicate that women's car ownership and usage also increased through the 1980s-90s.[10] This change has been reflected in South Australia as the percentage of women using a motor vehicle for their journey to work increased from 55.6% in 1981 to 64% in 1996.[11] The overall trends toward an increase in women's licence holding and car usage might explain the declining

---

[6] Hamilton & Jenkins, pp17-45; K Oliver, 'Women's Accessibility and Transport Policy in Britain', in S Whatmore & J Little (eds), *Gender and Geography*, Association for Curriculum Development in Geography, London, 1989, pp19-33; S Rosenbloom, 'Women's Travel Patterns at Various Stages of Their Lives', in C Katz & J Monk (eds), *Full Circles: Geographies of Women Over the Life Course*, Routledge, London, 1993, pp208-42; J Little, *Gender in Planning and The Policy Process*, Pergamon, Oxford, 1994; M Huxley, 'Ecologically Sustainable Cities, Environmentally Friendly Transport or Just "more work for mother"', *Women on the Move: Maintaining the Momentum*, Proceedings of the Second National Conference on Women and Public Transport, TransAdelaide, Adelaide, 1997, pp1-4; R Dowling & A Gollner, 'Women and Transport: From Transport Disadvantage to Mobility Through the Motor Vehicle', *Proceedings of the 21st Australasian Transport Research Forum*, Transport Systems Centre, University of South Australia, Adelaide, 1997, pp337-54.

[7] V Scharff, 'Putting Wheels on Women's Sphere', in C Kramarae (ed), *Technology and Women's Voices*, Routledge & Keegan Paul, New York, 1988a, pp135-46; Rutherford & Wekerle, pp134-35; S Rosenbloom, 'Why Working Families Need a Car', in M Wachs & M Crawford (eds), *The Car and the City*, University of Michigan Press, Ann Arbor, 1991; Rosenbloom, *Full Circles*, pp240-41.

[8] J Tivers, *Women Attached: the Daily Lives of Women with Young Children*, Croom Helm, London, 1985, pp262-64; D Foy & S Crafter, 'Mobility and Access Needs of Women in New Communities', Unpublished Paper Presented to the Conference on *Metro Planning: Social Costs and Benefits*, Urban Research Unit, Australian National University, Canberra, Date Not Stated, 1989, pp20-22 (in possession of the author); C Focas, 'A Survey of Women's Travel Needs in London', in M Grieco, L Pickup & R Whipp (eds), *Gender, Transport and Employment*, Avebury, Aldershot, 1989, pp150-68; J Lang, 'Women and Transport', *Urban Policy and Research*, 10(2), 1992, pp14-25.

[9] Figures derived from: South Australian Department of Transport, *Road Accidents in South Australia, 1986*, Road Safety Division, South Australian Department of Transport , Adelaide, 1987, pp140-41; Transport SA, *Road Crashes in South Australia, 1999*, Transport Information Management Section, Transport SA, Adelaide, 2001, p138; Australian Bureau of Statistics, *South Australia: A Statistical Profile*, ABS, Adelaide, 2001, p14.

[10] Dowling & Gollner, p342; AM Costain, 'European Trends in Women's Transport Initiatives: Food for Thought', *Women on the Move: Maintaining the Momentum*, Proceedings of the Second National Conference on Women and Public Transport, TransAdelaide, Adelaide, 1997, pp5-15.

[11] Figures derived from: Australian Bureau of Statistics, *Census of Population and Housing 1986*, ABS,

interest amongst feminists in questions of mobility. It could be argued that, given the significant increase in the number of women who drive or have access to motor vehicles, they no longer have a mobility problem. Of course, this view can only hold if we ignore more fundamental questions about women's travel choices. For example, why it is that some women feel so vulnerable when travelling through public space that they resort to car ownership? For carers (who continue to be predominantly women), car ownership is bound up with chauffeuring children, ageing parents, intellectually or physically disabled family members and friends. One must also consider the financial pressure car ownership may put on lower income earners. These latter problems are not exclusive to women, nor are they problems for all women, but they have been identified within feminist studies as particularly relevant to women.

Further, increasing women's use of automobiles does not annul a raft of other problems. For example, present practices of urban travel undermine the rights of some citizens while others, specifically motorists and bus patrons, are privileged in their use of street space. A second issue is that nearly half the population (including children, older citizens, and those declared medically unfit) are unable to use motor vehicles and, it can be argued, they have a right to access destinations without relying upon relatives and friends, if indeed they have such support networks to rely upon. Finally, forms of locomotion that rely on non-renewable energy sources, whether in their manufacture or use, contribute to human health problems and environmental degradation, from water pollution to the greenhouse effect, and as such contemporary urban travel practices and the industries which support them need to be radically re-thought.

Feminists such as Kerri Hamilton and Linda Jenkins have acknowledged that motor vehicle ownership is not a panacea for women travellers and have advocated improving conditions for walking, cycling, bus and train journeys.[12] In cities such as Adelaide, in South Australia, the changes to infrastructure and services advocated by feminists (and environmentalists) to make these forms of mobility more amenable to use by women (amongst others) have gone unaddressed for many decades. Buses and trams do not cater for children in strollers even though this was identified as a problem for 'mothers' at least as early as the 1940s.[13] Train stations continue to be vandalised, poorly lit, unstaffed, and deserted after dark. As such, they are identified

---

Canberra, 1989, p26; Australian Bureau of Statistics, 1999, *Cdata96*, Commonwealth of Australia, Canberra
[12] Hamilton & Jenkins, pp17-45.
[13] *The Housewife*, March-April 1949, p6.

as threatening and dangerous places for urban inhabitants generally and for women in particular. Footpaths in new urban areas are often constructed on only one side of the street, thereby limiting pedestrian movement, especially for children, and increasing the need for parents to accompany or chauffeur their children. Footpath ramps are poorly maintained and located in dangerous and inconvenient places. Cyclists have fared better as cycling facilities have been slightly increased to include more cycle lanes and parking facilities. Overall though, facilities and services for pedestrians, bus and train passengers have deteriorated and the number of people travelling by these modes has declined, at least for the journey to work. In 1981, 5.2% and 12.5% of South Australian women walked and used public transport, respectively, for their journey to work. In 1996, these figures had declined to 3.3% walking and 7.6% using public transport.[14]

The recommendations made by feminists in relation to walking, cycling, bus and train facilities have not been acted upon and often they have fallen on 'deaf ears'. To reiterate Morris, the constant restatement of 'her' demands sounds like so much nagging. It seems researchers presenting women's concerns and the women themselves who raise such concerns have been assigned the speaking position of the one who nags, a position with no authority and one that is difficult to transform.

As argued at the outset, the fact that 'nothing changes' may be viewed as an expression of patriarchal relations as they operate to impede women's mobility. However, this does not account for a range of anomalies and contradictions. For example, women have been actively encouraged into automobiles and away from other means of travel, not only by feminists but also by mainstream researchers, policy makers, motor vehicle lobby groups, and the automotive industries. Throughout the twentieth century, car manufacturers, retailers, and related industries advertised their products to women. These companies did not homogenise women: General Motors targeted women as wives and mothers; Chevrolet, REO, Dodge, General Motors, Texaco, COR, and Mobile products were advertised to elegant upper-class women, with and without partners; Vauxhall, Hillman, and Ford targeted young, single, working women.[15]

Educational institutions have offered courses to make women more confident car

---

[14] Figures derived from: Australian Bureau of Statistics, *Census of Population and Housing 1986* ABS, Canberra, 1989, p26; Australian Bureau of Statistics, 1999, *Cdata96*, ABS, Canberra.
[15] For example: *Advertiser*, 1 February 1930, p23; *Advertiser*, 7 February 1930, p16; *Advertiser*, 12 February 1930, p6; *Advertiser*, 13 March 1930, p13; *Advertiser*, 22 May 1930, p6; *Advertiser*, 1 July 1930, p18; *Advertiser*, 6 July 1934, p12; *Advertiser*, 26 July 1934, p14; *Advertiser*, 26 January 1950, p5; *Advertiser*, 28

owners by increasing their mechanical knowledge and basic car maintenance skills. Motor cycling was recommended to young women as an ideal sport.[16] Further, the newsletters of motoring associations and the motoring sections of daily newspapers each devoted columns to their female readers.[17] Another anomaly is that State investments in motor vehicle infrastructure benefit the mobility of male and female motorists often at the cost of male and female pedestrians, wheelchair users, skate-boarders, roller-blade users, and cyclists. Infrastructure 'improvements' frequently mean reducing the space (e.g. footpaths) available to these others travellers and degrading their travelling environment (through, for example, increasing their exposure to toxic vehicle emissions and noise).

The problem that 'nothing changes' for all those marginal travellers certainly has gendered outcomes but it is not a problem based in gender alone. The continuing deterioration of conditions for these travellers has a basis in the differential valuing of different travel practices. Following from this, the question for this thesis turns away from the problems women face as pedestrians, cyclists, bus, and train users. Instead, it considers how some travel practices have come to be valued and consequently flourish over others and how feminists have actively participated in this process.

This thesis throws new light upon questions of the rise, proliferation and differential value placed on different travel practices as it opens up to scrutiny the way in which travel performances have been inserted into discourse. It begins with Morris' reflection on nagging, proposing that 'nothing changes' because it is possible, or *within the bounds of reason*, to ignore particular policy recommendations. It is argued that recommendations to enhance walking, cycling, wheelchair, scooter, roller-blade, bus, and train travel might be actively undermined by the way in which travel is spoken about and reflected upon, that is, by the logic of contemporary discourses on urban travel (whether feminist, environmentalist, neo-Marxist, or mainstream).[18] This proposition shifts the focus of study away from the *fact of movement* to how it is possible *to think and know about* the fact of movement. This reflection upon knowledge goes beyond a critique of modernist urban travel studies. It considers how the production of knowledge, including the tools and language

---

January 1955, p7; *Advertiser*, 3 February 1950, p6; *Advertiser*, 3 September 1968, p10.
[16] For example: *Advertiser*, 7 February 1930, p6; *Advertiser*, 7 May 1930, p7.
[17] For example: *Advertiser*, 18 February 1930, p12; *Advertiser*, 27 May 1930, p5; *South Australian Motor*, January 1947, 36(1), pp34-35; *South Australian Motor* (New Series), February-March 1952, 1(1), pp20-21.
[18] J Bonham, 'Nagging Doubt: Spaces for Women in Transport Knowledge', *Women on the Move: Maintaining the Momentum*, Proceedings of the Second National Conference on Women and Public Transport, TransAdelaide, Adelaide, 1997, pp59-61.

deployed in producing that knowledge, is implicated in establishing and maintaining the predominance of some travel practices over others.

Re-Framing the Problem of Travel

Drawing on Foucault, it is argued that the knowledge produced about urban journeys does not reflect the truth about these journeys, nor is it simply used by policy makers and planners to good effect or otherwise.[19] Knowledge operates as a mechanism through which specific actions are constituted (included/excluded) and ordered as travel practices. The procedures through which these actions are inserted into discourse (how they are observed and ordered) simultaneously establishes some journeys as more valuable than others and consequently privileges some travellers over others. Further, the techniques through which travel practices are made comprehensible also operate to shape how urban populations can interpret and conduct their journeys and how agencies within and beyond the State can govern urban travel.

In this thesis, these claims are addressed through an examination of the relationship between the production of knowledge about urban travel, the way in which power operates to shape movement within the urban environment, and the formation of individuals as subjects of travel. This project involves identifying the historical moment at which it became meaningful to create knowledge about urban travel and the shifts and changes in the objectification of travel over time. At a detailed level, this includes interrogating: the techniques through which some travel practices are included in/excluded from the study of travel; the conceptualisation of travel brought into effect and instrumentalised through these techniques; the objects available for study; the categories through which these objects have been observed, measured, and analysed; the subject positions constituted through the study of travel; and the effects of this knowledge on how urban populations are encouraged to contemplate and conduct their journeys.

---

[19] See especially: M Foucault, *Discipline and Punish: The Birth of the Prison,* Penguin, London, 1977; M Foucault, *The History of Sexuality Vol. 1,* Penguin, London, 1978; M Foucault, 'History of Systems of Thought', *Philosophy and Social Criticism,* 8, 1979, pp353-59; M Foucault, *Power/Knowledge,* C Gordon (ed), Harvester Wheatsheaf, Hertfordshire, 1980 ; M Foucault, 'Omnes et Singulatum: Towards a Criticism of "Political Reason"', in S McMurrin (ed), *The Tanner Lectures on Human Values,* University of Utah Press, Salt Lake City, 1981, pp223-54; M Foucault, 'The Subject and Power', *Critical Inquiry,* 8, 1982, pp777-95; M Foucault, 1986, 'Of Other Spaces', *diacritics,* 16(1), 1986, pp22-27; M Foucault, 'Governmentality', in G Burchell, C Gordon & P Miller (eds), *The Foucault Effect: Studies in Governmentality,* University of Chicago Press, Chicago, 1991, pp87-104.

The first step in this project is to stand back from and problematise the language of urban travel studies. The term 'travel practices' goes beyond the *method* of moving through the urban environment, for example, by foot, bicycle, skateboard, wheelchair, roller-blades, scooter, bus, and so forth. It also goes beyond the techniques used in making that movement comprehensible, such as the observation, measurement, and analysis of characteristics (timing, duration, and so forth), which are both attributed to and give effect to the journey. Reflection upon travel is weighed down by existing categories but this study attempts to make visible the multiplicity of practices that may cut across different methods of movement. The term 'travel practices' refers to the myriad actions that a person might deploy in moving within the public spaces of the urban environment. Some of these practices might include the specific ways in which a person uses his or her own body in moving, whether that body moves in a straight line, tracks across a street not along it, moves slowly or quickly, and punctuates movement with back tracks, hesitations, talking, watching, listening, or long pauses in public space. 'Public' is acknowledged as a problematic term but it is used in the present context to include all those spaces between buildings which are, theoretically, available for use by all citizens.

The literature I am particularly interested in is that which comprises the field of transport. The term *travel* is often elided with the term *transport* and, although they are each concerned with movement, 'Trans-Port' is constituted within urban travel studies as the action of moving from one place to another (being in between ports) performed with the specific intent of participating in the activities at the second location. The specificity of this movement suggests transport might be one classification within a broader typology of travel; other performances of travel might include nomadism, touring, promenading, jogging, cruising, hiking, and strolling. Rather than set travel in opposition to transport or subsume travel within the broader category of transport, I have used the term 'travel' to denote all movements through public space regardless of how those movements are made or with what intent. This term acts as a constant reminder of the utility, practices, intentions, and experiences of being within and moving through urban space beyond the bald action of shifting from one point to another. The term 'transport' is used when referring to the very specific type of movement from point A to point B described above.

The term 'travel' also operates as a site from which to interrogate the historical conditions under which movement within the urban environment became an object of study. The notion of travel provides a broader frame through which to examine changes in the objectification of urban movement and the procedures through which

that movement has been observed, measured, and analysed. It also assists in identifying the moment that the study of urban travel closed around the conceptualisation of transport. The fact that investigations of urban journeys are situated within a field of study known as 'Transport' not 'Travel' implies the separation and exclusion of a range of practices. Several researchers have recently acknowledged that the activity of travel has a much broader utility and meaning than the term transport allows.[20] The present study presses this claim further as it investigates the mechanisms, objectives, and effects of reducing travel to the activity of 'transport'.

The insistence on the term 'travel' rather than 'transport' raises some complications. Tony Cresswell, James Clifford, Janet Wolff, and bell hooks have drawn attention to the problems and uneven aspects of travel, such as who can travel, who must travel, and the different experiences of travel according to the class, race, and gender identity of the traveller. Clifford and hooks, although sympathetic toward 'travel' stories in doing ethnography, warn researchers of the legacy of cultural transcendence written through the travel stories of nineteenth-century, white, male explorers.[21] Cresswell critiques the unproblematised use of the metaphor of the nomad as he examines the experiences of those who are forced into nomadic lives, and we might add the dispossession and persecution experienced by nomadic peoples.[22] Not all journeys are heroic.

Wolff has argued that women cannot assume the subjectivity of one type of traveller, the flâneur, due to the constraints women face in the times they travel, the places they can visit, and the narrow time-space regimes dictated by their responsibilities as mothers, wives, workers, and carers.[23] Elizabeth Wilson does not deny the difficulties faced by many women but she provides a strong counterposition to this pervasive story, pointing to the possibilities and interactions opened up to women through urbanisation and urban living.[24] But even conceding the impossibility of women becoming flâneurs in precisely the same terms as men, does this mean that travel,

[20] P Mokhtarian, I Salomon & R Lothlorien, 'Understanding the Demand For Travel: It's Not Purely "Derived"', *Innovation: The European Journal of Social Science Research*, 14 (4), 2001, pp355-80.
[21] J Clifford, 'Traveling Cultures', in L Grossberg, C Nelson & P Treichler (eds), *Cultural Studies*, Routledge, New York, 1992, pp96-112; bell hooks, 'Representing Whiteness', in L Grossberg, C Nelson & P Treichler (eds), *Cultural Studies*, Routledge, New York, 1992, pp338-46.
[22] T Cresswell, 'Imagining the Nomad: Mobility and the Postmodern Primitive', in G Benko & U Strohmayer, (eds), *Space and Social Theory: Interpreting Modernity and Postmodernity*, Blackwell Publishers, Oxford - England, 1997, pp360-82.
[23] J Wolff, *Feminine Sentences: Essays on Women and Culture*, Polity Press, Cambridge, 1990, pp34-50; J Wolff, 'On the Road Again: Metaphors of Travel in Cultural Criticism', *Cultural Studies*, 7(2), 1993, pp224-39
[24] E Wilson, *The Sphinx in the City: Urban Life, the Control of Disorder, and Women*, Virago Press, London, 1991; E Wilson, 'The Invisible Flaneur' *New Left Review*, 191, 1992, pp90-110.

whether by foot or vehicle, can't be experienced by women beyond the intent and utility in moving from one point to another? Is it reasonable to silence and exclude women's (or anyone's) experiences of travel beyond the notion of moving from point A to B? Despite the unwanted baggage that clings to the word 'travel' (we may ultimately want to replace it altogether), this term might still be deployed with strategic effect.

In order to move beyond 'nagging', it is necessary to rethink the study of urban travel, as this in itself will disrupt the value conferred on different travel practices. Poststructuralist theories have been used to good effect within the field of urban planning, but only a handful of studies have used these theoretical insights for the study of urban travel.[25] This project makes a unique contribution to the study of urban travel as it critiques discourses on urban travel (specifically those discourses on transport) and opens urban travel studies to new modes of investigation.

The Project Outline

The following study takes a historical approach as it examines the conditions under which movement became an object of study within one Australian city, Adelaide. I have explored the sites, procedures, and disciplines through which travel has been brought under scrutiny and the practices included in and excluded from the study of travel through time. In examining the production and circulation of knowledge, I have sought to identify mutations in how travel has been 'thought' and the consequences of this for the elaboration of techniques of knowing about and intervening in travel. This approach should make it possible to identify the moment at which the objectification of movement was closed around transport.

---

[25] M Huxley, 'Panoptica: Utilitarianism and land-use control', in K Gibson & S Watson (eds), *Metropolis Now: Planning and the Urban in Contemporary Australia*, Pluto Press, Leichhardt, 1994, pp148-60; A Hunt, 'Governing the City: Liberalism and Early Modern Modes of Governance', in A Barry, T Osborne & N Rose (eds), *Foucault and Political Reason Liberalism, neo-liberalism and rationalities of government*, UCL Press, London, 1996, pp167-88; B Flyvbjerg, *Rationality and Power*, University of Chicago Press, Chicago, 1998; N Rose & T Osborne, 'Governing cities: Notes on the Spatialisation of Virtue', *Environment and Planning D: Society and Space*, 17, 1999, pp737-60; D Ferretti, *From Rational Planning to Risky Business: Notions of Ecological Stustainability in Planning Discourses*, PhD Thesis, Flinders University of South Australia, Bedford Park, 2002; J Bonham, 'Safety & Speed: Ordering the Street of Transport', in C Garnaut & S Hamnett (eds), *Fifth Urban History/Planning History Conference*, Proceedings, University of South Australia, Adelaide, 2000, pp54-66; D Ferretti & J Bonham, 'Travel Blending: Whither Regulation?', *Australian Geographical Studies*, 39(3), 2001, pp302-12; R Fazakerly & J Bonham (in press), 'Intersections: Public Art and Road Space', *Twentieth Century Heritage: Our Recent Cultural Legacy*, Proceedings of the 2001 Australia ICOMOS National Conference, 28 November - 1 December 2001, Adelaide, South Australia.

The argument that knowledge about urban travel is central to shaping how people interpret and conduct their journeys has significant implications for understanding the relationships between power, knowledge, and the formation of the human subject. Chapters Two and Three explore this relationship. Chapter Two examines the different theoretical frameworks used in the study of urban transport, the conceptualisation of power which underpins these approaches, and the research questions they enable. It is argued that these theoretical frameworks separate power and knowledge in a way that makes it impossible for researchers to reflect on their own complicity in ordering urban travel practices. Chapter Three explicates Foucault's work on power, knowledge, and subjectivity and how it addresses the shortcomings of the theoretical models outlined in Chapter Two. This chapter then proceeds to explain how Foucault's methods can be used to interrogate the study of urban travel and concludes with an outline of the research method used in this project.

Chapter Four focuses upon the physical space of travel as it examines the historical conditions under which it became possible to objectify and rationalise travel upon the urban street. The physical activity of travel requires physical space and some travel spaces, railways and tramways in particular, have been created specifically for travel. Streets, by contrast, have a long association with travel but this has not been their exclusive role. Chapter Four examines the discourses through which streets were brought under scrutiny through the nineteenth century and the effects of these modes of objectification on interventions into and uses of street space. It is argued that changes in street spaces impacted upon the conduct of journeys, which in turn had implications for rationalising, objectifying, and consequently ordering the conduct of urban travel. In particular, this chapter seeks to identify those moments and places within which urban travel was rationalised as transport and the effects of this rationalisation on the spaces and conduct of travel.

Chapter Five focuses upon the body of the traveller as it examines the relationship between the conduct, machinery, and spaces of travel. Different modes of travel are often regarded as resources or tools which an individual might select or discard at will. However, a range of skills are necessary to the orderly conduct of urban travel, including being alert to and operating mechanical vehicles. It is argued in this chapter that the body that travels must be disciplined to interact with and regulate itself in relation to machinery and the physical environment within which it moves. Following from this, the urban traveller cannot adopt or cast off their position as a travelling subject at will. Rather, one *becomes* a traveller, eventually acknowledging

oneself as, and regulating oneself according to, the subject positions available. This chapter identifies the discursive procedures through which the travelling body has been disciplined and the fields of knowledge through which this body has been known and come to know itself as a subject of travel. It is argued that these disciplining procedures have been fundamental in establishing, maintaining, and elaborating the ordering of contemporary urban travel practices.

Chapter Six explores the implications of a transport rationalisation of travel for the problematisation, production of knowledge, and intervention into the conduct of urban travel. This chapter focuses upon the conduct of travel in early post World War II Adelaide, a time of rapid expansion of the urban industrial economy and the metropolitan area. It examines how the prevailing rationalisation of travel as transport functioned in determining what constituted a travel problem and the limits within which the problem could be addressed. It is argued in Chapter Six that the transport rationalisation of travel, and the problems that logically flowed from it, had consequences for knowing urban travel. For example, what could be measured or enumerated, and how could information be gathered, analysed and transformed into truth about travel? Finally, this chapter examines how knowledge of urban transport has been deployed by agencies within and beyond the State in guiding the conduct of the travelling subject.

Chapter Seven makes a detailed examination of the 1960s freeway debates as one strategy aimed at alleviating the problems of urban travel. Freeway construction proposals and programs met with fierce resistance in Australian, North American and European cities through the 1960s. This chapter explores the counter-knowledges produced and circulated in opposition to freeway projects and the limits they sought to place on the activity of travel. I have identified the various disciplines within which urban travel was taken up as an object of study, the aspects of travel that were problematised, the techniques deployed in the production of new knowledges of travel, and the attributes found wanting in the subject of urban travel texts. In analysing these counter-discourses, I have been concerned to examine the rationalisation of urban travel within these different disciplines and its implications for intervening in the conduct of travel.

Chapter Eight returns to the feminist literature on urban travel produced both in Australia and overseas. It traces feminist interests in urban travel and the observations and analyses they have made of women's journeys. This chapter, like the two preceding it, examines how the transport rationalisation of travel informs the

methods feminists use in producing travel knowledge and the performances considered as constituting the urban journey. I have critically examined the boundaries this rationalisation of travel places upon feminist representations of women's journeys, teasing apart the ways in which these stories both challenge and reinscribe the dominant discourse on urban travel. I have explored alternative approaches to and ways of reading women's travel stories and the potential of such alternatives for challenging the hierarchisation of urban journeys and their privileging effects.

This research project has a feminist history but it does not take the gendering of the discourse on transport as its central theme. The discourse on transport is masculine in so far as it has been produced predominantly by men, the male body has often been taken as the normal travelling body, and the journeys of upper- and middle-class men have provided the standard against which all other journeys are positioned. However, this project does not seek to track through discourses on travel to discover the gendering of journeys. I am not concerned to uncover how female bodies and female journeys have been included in or excluded from the discourse on transport in order to instate them in the discourse or revalue them within established travel hierarchies. I consider that the transport discourse, its language, objects of study, and the subjectivities it makes available may undermine the objectives of some feminist researchers. I argue that there is a need to broaden out thinking about urban movement in order to disrupt rather than reinscribe contemporary urban travel practices and their privileging effects.

ON POWER AND DOMINATION:
THE STATE, THE INDIVIDUAL, AND THE RULE OF LAW

The knowledge produced by urban travel experts, including researchers, planners, engineers, statisticians, accident investigators, and traffic modellers, is often regarded as objective and value free. The research efforts and professional practices of these experts is known to be buffeted by political processes, but the knowledge they create and the work they undertake are perceived as standing outside of relations of power, serving as they do the so-called 'public interest' in efficient movement. Paradoxically, the urban transport literature is littered with phrases such as 'car dominated', 'car dependent', 'automobile dominated', and more recently 'automobility dominated societies', 'freedom of movement', 'coercive force', and so forth. These references to domination, coercion, freedom, independence, or the lack of it, suggest that transport researchers worry over the relations of power which imbue contemporary travel practices. However, they position themselves outside, as observers, of these relations and rarely make power the subject of their scrutiny. In those instances that questions of power, or more particularly political struggles over transport, have been addressed, the nature, operation, and the researchers' relation to power are largely taken for granted.

The following discussion makes explicit the assumptions about power that pervade, but are rarely commented upon, in transport research. This focus upon power provides a first step in re-examining the relationship between the exercise of power and the production of transport knowledge. Following Foucault, this thesis holds up to question the modernist assumption that power and truth are separable, and that the presence of the former acts to distort the latter. It is argued that this discursive separation of power and truth has enabled transport researchers to overlook the complicity of their own research efforts in the privileging of certain travel practices and, in particular, the proliferation of automobile usage.

This chapter is organised around the major theoretical traditions which underpin transport research, namely, liberalist, neo-Marxist, feminist and Weberian approaches. The discussion teases apart the conceptualisation of power deployed in each of these frameworks and is arranged according to three fundamental aspects of power: the locus of power, the nature and operation of power, and the target of

power. The chapter considers how the conceptualisation of power deployed in these theoretical traditions has both informed transport research and discursively positioned transport knowledge in relation to the exercise of political power. The main argument in this chapter is that the theoretical frameworks which inform transport studies are inadequate in explaining the operation of power in contemporary societies and consequently the rise and proliferation of contemporary urban travel practices. This shortcoming is the result of a failure by transport researchers, working in these theoretical traditions, to interrogate how tactics of power are implicated in and elaborated through their own studies of urban movement.

Conceptualising Power

Urban mobility has been taken as an object of study within a number of disciplines including geography, sociology, planning, economics, political science, and engineering. Most of the texts examined in this chapter are from the discipline of geography, although this review does range across disciplinary boundaries. Further, the discussion has not been confined to those texts which self-consciously identify themselves as studies of urban movement. Rather, the analysis includes several commentaries which take mobility as one among many themes. The purpose of reviewing these texts is not to provide a detailed description of the arguments within them nor to examine this vast literature in its entirety. Instead, the aim, as stated above, is to explicate the conceptualisation of power that underpins the theoretical frameworks used in transport research.

The vast majority of transport texts are underpinned by what, following Foucault, might be called a juridical-liberal conceptualisation of power.[1] Political power is differentiated from the authority of parents over children or the capacity of individuals to transform their physical environment.[2] Political power operates at the level of the population. Individuals within the population (whether all or some) are conferred with political power. Power in this context is conceived of as a right which individuals possess at birth, a natural right, or come to posses through their membership of social institutions.[3] The liberal view of power takes as its model a commodity; it can be accumulated, exchanged, or ceded and it is constituted at the political level in terms of a 'legal transaction involving a contractual type of

---

[1] M Foucault, *Power/Knowledge*, C Gordon (ed), Harvester Wheatsheaf, Hertfordshire, 1980, p88.
[2] B Hindess, *Discourses of Power: from Hobbes to Foucault*, Blackwell, Oxford, 1996, p55.
[3] For a discussion of the shift from natural right, as theorised by Rousseau, to the notion of civil right see, C Gordon, 'Governmental Rationality: An Introduction', in G Burchell, C Gordon & P Miller (eds), *The Foucault Effect: Studies in Governmentality*, University of Chicago Press, Chicago, 1991, pp32-33.

exchange'.[4] Each party to the contract is bound by rights and obligations: the right of the sovereign to make laws; the right of the individual to consent (or deny consent) to the rule of a particular sovereign; the obligation of the sovereign not to impinge on individual freedom; the obligation of the subject to obey the rule of law. Power, conceived of as a right, involves a number of key elements: the sovereign, as the locus of power; the law, as the means by which power operates; and the individual, as the target of power.

Power, or right, is concentrated into the hands of the sovereign (or State, including the parliamentary executive, judiciary, armed forces, police, bureaucracy) as the sovereign accumulates power through the cession by all subjects of some power. The power, or rights, of the sovereign exceeds that of all those subjected to sovereign power. The most important activity of the sovereign is the making of decisions and the 'making and enforcing of rules', as these decisions and rules establish how subjects are obliged to behave in order to ensure the security of the society.[5] These rules are seen to act by interdiction, serving to prohibit and forbid certain behaviours: the law operates by imposing upon the actions, and consequently the freedom, of individuals.

The subject within liberal discourse is an individual which pre-exists society and is the agent and author of its own history. The 'individual [is] a "fixed extralinguistic" entity consciously pursuing its unique destiny' who, once all the layers of socialisation are stripped away, reveals a unique inner core - a true self.[6] Individuals are differentiated from each other but at the same time they possess in common certain attributes such as rationality. The ability to think rationally enables individuals to transcend their context and act autonomously in accordance with reason. It is through the development of the individual's potential to reason that the individual enters into the social contract as a subject conferred with responsibilities and an agent endowed with freedom.[7] These components of the liberal conceptualisation of power, the State, the rule of law and the individual have significant implications for the questions addressed and the studies conducted within the field of transport.

---

[4] Foucault, *Power/Knowledge*, p88.
[5] Hindess, p57.
[6] S Smith, *Subjectivity, Identity, and the Body: Women's Autobiographical Practices in the Twentieth Century*, Indiana University Press, Bloomington, 1993, p5.
[7] Hindess, pp56-6, 71-2.

Truelove's *Decision Making in Transport Planning* provides a classic liberal account of the State as the site of power which is legitimated through the democratically elected legislature.[8] Members of parliament, particularly Ministers, 'have power' conferred upon them by the electorate. This power is manifested as the right to make decisions, but the decisions made and policies acted upon in relation to transport are expected to be based on the wishes of the electorate. Failure to represent the electorate within decision making is likely to result in the withdrawal of the right to make decisions. Decision making is regarded as the fundamental activity of the parliament while the State bureaucracy advises on and implements these decisions. All individuals are conferred with the right to travel, and the role of the State in relation to transport is ultimately to secure the conditions under which individuals can exercise their freedom of choice in travel. However, what this should include, which aspects of transport should be on the State's agenda, and how the individual's rights should be balanced against society's well being has changed with the shifts in political thinking from liberalism to welfarism to neo-liberalism. Further, how the State should intervene in the transport issues on its agenda has also been subject to widespread debate.

Discussions over what should be included in the State's transport agenda might be categorised into three broad, but inter-related, areas: the conduct of travel; securing the provision of transport infrastructure and services; and addressing the problems created by the market in transport. The conduct of travel includes discussions of the objectives of State agencies when intervening in the conduct of journeys and the most appropriate forms of intervention. Efficiency of movement and personal safety are perhaps the most well established grounds for the State's intervention in the conduct of travel. The debates in this area have focused upon the types of travel practices that will ensure (or undermine) efficient and safe movement and the most effective ways of securing desirable travel conduct.[9] For example, whether the behaviour of travellers should be intervened upon through legislation, education, or alterations in the supply of infrastructure and services.

The role of the State in securing transport has also been debated through major shifts in political thinking. These debates include the provision, funding, and management

---

[8] P Truelove, *Decision Making in Transport Planning*, Longman Scientific and Technical, Harlow, 1992. See also S Glaister, J Burnham, H Stevens & T Travers (eds), *Transport Policy in Britain*, MacMillan, London, 1998.

[9] For contemporary debates see articles on traffic management, travel demand management, and road accidents in series such as *Australasian Transport Research Forum* and journals such as *Transport Policy* and *Accident Analysis and Prevention*.

of infrastructure and services.[10] Questions of whether the State itself should provide various types of transport infrastructure and services, or the best way to encourage private sector transport provision, have been discussed in Australia over many decades.[11] The responsibility of the State in securing the market in movement without jeopardising the market in other goods and services has sparked arguments ranging from advocating the nationalisation of some enterprises (tramways, railways, buses) to enforcing competition policy in all these sectors. The final set of issues on the agenda of the State are the problems created by the market in mobility including: the uneven effects that differential allocation of resources have on particular groups of travellers such as the young, the elderly, women, the disabled, and the poor; and the environmental effects of different means of travel.[12]

The problems placed on the State's agenda, and the dilemma of how these agenda items should be addressed, has attracted the involvement of researchers from psychology and engineering to medicine, occupational therapy, computer science, economics, and geography. The knowledge produced through these disciplines has been drawn into decision making processes as political advisors and lobby groups deploy research findings in a variety of ways. All of these discussions are underpinned by a concern not to impose on the freedom of the individual while ensuring that individual choices do not adversely impact upon the health, wealth, and wellbeing of the population more generally.

Liberal positions may be criticised on the basis that they do not interrogate the regularity with which decisions fall in favour of some groups over others. It is acknowledged within liberal debates that, as political groupings gain and lose power, the interests of different segments of the population might be served more or less well. The abuse and potential for abuse of power has been a widespread concern amongst liberal theorists as they are ever concerned with the limits to the exercise of

---

[10] See journals such as *Transport Policy* for recent contributions to these debates.

[11] The most recent turn in this debate saw the vigorous introduction of Competition Policy in Australia through the 1990s which included the tendering out of metropolitan bus, train, and tram passenger services.

[12] Texts on transport disadvantage include: K Koutsopoulos & C Schmidt, 'Mobility Constraints of the Carless', in E De Boer (ed), *Transport Sociology: Social Aspects of Transport Planning*, Pergamon Press, Britain, 1986, pp169-81; M Hillman, I Henderson & A Whalley, 'Unfreedom Road', in E De Boer (ed), *Transport Sociology: Social Aspects of Transport Planning*, Pergamon Press, Britain, 1986, pp183-89; M Loeis & T Richardson, 'Development of a Welfare Index for use in Transport Analysis and Evaluation', *Proceedings of the 21st Australasian Transport Research Forum*, Transport Systems Centre, University of South Australia, Adelaide, 1997, pp355-74; A Church, M Frost & K Sullivan, 'Transport and Social Exclusion in London', *Transport Policy*, 7(3), 2000, pp195-205. Recent articles on environmental issues in transport include: J Hine, 'Integration, Integration, Integration... Planning for Sustainable and Integrated Transport Systems in the New Millennium', *Transport Policy*, 7(3), 2000, pp175-77; G Stradling, M Meadows & S Beatty, 'Helping Drivers Out of Their Cars: Integrating Transport Policy and Social Psychology for Sustainable Change', *Transport Policy*, 2000, 7(3), pp207-15.

political power. For example, arguments over the rise and demise of the tramways and railways in South Australia are replete with references to political patronage and opportunism. However, in locating the exercise of political power within the State, these commentators ignore the mechanisms operating outside the State which serve to structure social relations and secure the advantage of some groups over others. These uneven social relations, like the rise of particular travel practices, are 'naturalised' within liberal studies of transport and consequently placed beyond political debate.

Neo-Marxist critiques of liberalism challenge the conceptualisation of power as *right* as they call into question the State, the Law, and the individual. Power within these texts is analysed in terms of a general system of domination whereby one class, the bourgeoisie, maintains its domination over another, the working class. The relations of production and class domination that arise out of the capitalist configuration of the forces of production make the oppression of the working class an inherent feature of capitalism.[13] The State as a site of political power, established (or more accurately transformed) with the rise of capitalism, ultimately works to maintain capitalist relations of production and consequently the domination of workers by the bourgeoisie, although this latter process does not occur in any straightforward way.[14] Lockean political jurisprudence (civil society, the social contract and the sanctity of individual property rights), which involves the participation of those who are governed in their own government, either by their consent to obey the rule of law or their active role in its formulation, has been condemned by neo-Marxist commentators as obscuring the real operation of power and preparing '...the philosophical foundation for the capitalist appropriation of surplus value'.[15] Political power conceived within this neo-Marxist framework is concerned with, subordinate to, and can be rationalised in terms of the economy.[16]

A central problematic addressed by neo-Marxist theorists is how the exercise of political power gains legitimacy, working as it does against the interests of the greater proportion of the population. This problem has been examined through the theorisation of ideology and the formation of consciousness, leading to the insight that the State is not the only site of class struggle; civil society is itself an arena of struggle as the consciousness, the thoughts, values and desires of the individuals who

---

[13] L Kilmartin, D Thorns & T Burke, *Social Theory and the Australian City*, Allen & Unwin, Sydney, 1985, p58.
[14] D Harvey, *Social Justice and the City*, Edward Arnold, London, 1973, pp274-78; D Harvey, *The Urban Experience*, Blackwell Publishers, Oxford, 1989, p27; M Castells, 'Towards a Political Urban Sociology', in M Harloe (ed), *Captive Cities*, John Wiley & Sons, London, 1977, pp61-78; Kilmartin, et al, p66.
[15] Gordon, p18.

people this society are shaped by ideology. The meaning and use of the term ideology has been the subject of widespread and on-going debate.[17] However, to remain in keeping with the neo-Marxist transport literature, the term is used in the current context to denote the value structure of the bourgeoisie including the work ethic, materialism, the ideal of the nuclear family, and the sanctity of private property.[18] The argument follows that consciousness does not pre-exist society, but is socially founded, the consciousness of the individual is formed within the historical context of the domination of the bourgeoisie and the hegemony of ruling class values. Thus, the action of ideology in the formation of consciousness not only obscures the truth about capitalist economic relations, but also makes it possible for individuals to act against their own interests as their desires are aligned with those of the ruling class. This 'acceptance of the value system of the dominant class' serves to legitimate and maintain capitalist relations of production.[19]

The preceding discussion offers a simplified and largely undifferentiated view of neo-Marxist accounts of the operation of power, theorists working in the field of transport have not yet brought recent theoretical insights on power into their analyses.[20] Critiques of liberal theoretical frameworks have led neo-Marxist researchers to offer alternative explanations of contemporary transport systems and the relations of power implicit within them.[21] Studies undertaken within a neo-Marxist theoretical framework have examined transport in relation to the accumulation of capital, while its modes and spaces have been analysed as arenas of class struggle. Transportation has been seen as fundamental to opening outlets for capital investment, for example, the coach, rail, tramway, and bus services of the nineteenth and early twentieth centuries, or changes in the distribution of urban ground rents through the provision of transport infrastructure.[22]

Transportation is also seen as central to the circulation of commodities: the more rapidly they circulate, the more quickly profits can be realised. Therefore, changes in

---

[16] Foucault, *Power/Knowledge*, p89.

[17] For a thorough discussion of this term see: M Barrett, *The Politics of Truth*, Polity Press, Cambridge, 1991.

[18] Kilmartin, et al, p63.

[19] Kilmartin, et al, p63.

[20] Stuart Hall, like Michele Barrett, offers a more complex account of the relationa between power, ideology and the formation of consciousness. S Hall, 'Who Needs Identity', in S Hall & P du Gay (eds), *Questions of Cultural Identity*, Sage Publications, London, 1996, pp1-17.

[21] R De Jong, 'The Recapture of the street', in E de Boer (ed), *Transport Sociology: Social Aspects of Transport Planning*, Pergamon Press, Britain, 1986, pp77-91.

[22] For example: M Feldman, 'A Contribution to the Critique of Urban Political Economy: The Journey to Work', *Antipode*, 9(2), 1977, pp30-50; S Adler, 1987, 'Why BART but no LART? The Political Economy of Rail Rapid Transit Planning in the Los Angeles and San Francisco Metropolitan Areas, 1945-57', *Planning Perspectives*, 2, 1987, pp149-74; D Hodge 1990: 'Geography and the Political Economy of Urban Transportation', *Urban Geography*, 11(1), 1990, pp87-100.

transport technology and improvements to transport infrastructure enable increases in the rate of capital accumulation.[23] However, for neo-Marxists a fundamental contradiction in transport occurs in the fact that private capital cannot supply all the transport it requires, which in turn threatens a crisis in capitalist circulation.[24] Transportation is also critical in the circulation of labour, both in accessing sites of production and in the process of reproduction.[25] In order to maximise the rate of accumulation and minimise labour costs, transport costs are deferred partly to the State, in the form of public transport and transport infrastructure, and partly to the individual in the form of public transport fares or private automobile transport. Never the less, the deferral of these costs to the State precipitates yet another crisis in that the State is subject to conflicts over how transport investments are made and who benefits from investments in particular types of transport.[26] Further, the deferral of transport costs to the individual results in the over-production of motor vehicles which is represented as an under-production of road space requiring ever-increasing State investment in road infrastructure.[27]

In terms of automobile ownership, the ideologies of private property ownership and individual freedom have been employed by capitalists to promote private motor vehicles to workers.[28] This strategy not only instils private ownership in individuals while shifting the costs of transport to workers, but it also expands/privileges particular sections of capital, namely automobile manufacturers, engineering, construction, and oil companies by ensuring the production of automobiles and the consumption of automobile travel. Indeed, some have argued that coalitions of these different sections of capital have actively conspired to determine the transportation systems available in particular cities.[29]

Mimi Sheller and John Urry provide the most recent elaboration of neo-Marxist accounts of mobility at the time of writing.[30] These authors relate the rise of

[23] H Franks, 'Mass Transport and Class Struggle', in E de Boer (ed), *Transport Sociology: Social Aspects of Transport Planning*, Pergamon Press, Britain, 1986, pp211-22.

[24] G Yago, 'The Coming Crisis of US Transport', *International Journal of Urban and Regional Research*, 7(4), 1983, pp577-601.

[25] Harvey, *The Urban Experience*, pp18-19.

[26] Harvey, *Social Justice and the City*, pp60-64; L Sandercock, *Cities for Sale*, Melbourne University Press, Melbourne, 1977, pp121-35.

[27] Franks, pp215-18.

[28] P Freund & G Martin, *The ecology of the automobile*, Black Rose Books Ltd., Montreal, 1993.

[29] G Yago, 'Corporate Power and Urban Transportation: A Comparison of Public Transit's Decline in the United States and Germany', in M Zeitlin (ed), *Classes, Class Conflict and the State: Empirical Studies in Class Analysis*, Cambridge, Winthrop, 1980, pp296-323; J Whitt & G Yago, 'Corporate Strategies and the Decline of Transit in U S Cities', *Urban Affairs Quarterly*, 21, 1985, pp37-65.

[30] M Sheller & J Urry, 'The City and the Car', *International Journal of Urban and Regional Research*, 24(4), 2000, pp737-57. See also, J Beckman, 'Automobility: A Social Problem and Theoretical Concept', *Environment and Planning D: Society and Space*, 19, 2001, pp593-607.

contemporary travel practices to the culture of modern western cities. Sheller and Urry make the important observation that, despite the emphasis placed upon urbanity (dwelling or situatedness), modern social life is constituted as much through mobility as urbanity and as much through travel technologies as building technologies.[31] Life in modern western cities, they suggest, is characterised by heightened mobility and the predominant use of the automobile. Following Peter Freund and George Martin they describe this condition as 'Automobility'. Sheller and Urry claim that this heightened automobile mobility has been facilitated by a coalescence of the decision making of planners and policy makers in the State and the actions and decisions of representatives in automobile and related industries.[32] The continuing 'domination of Automobility' is sustained and elaborated through a complex combination of factors of capitalist production, consumption, technological development, and culture.[33] This latter includes the privileging of private over public, a particular notion of the 'good life', and a view of the environment as a resource to be used and abused. 'Automobility', it is argued, has reshaped urban life, social relations and consciousness with both positive and negative effects.

Sheller's and Urry's work goes beyond those authors who discuss contemporary travel in terms of a power inherent to automobiles. The automobile in these latter accounts is not so much a tool through which some human beings coerce others; rather, the vehicle has been attributed with a life and consciousness of its own.[34] Terms and phrases such as 'autokind', 'car dominance', and 'car culture' are frequently used but rarely analysed, leaving the reader to surmise that vehicles, rather than human beings, determine human actions. In contrast, Sheller and Urry use Haraway's notion of the cyborg to describe changes to human consciousness which arise from the relation between human beings and automobiles.[35] However, their work does not challenge the reification of motor vehicle usage. Rather, it subsumes human consciousness under the overarching effects of automobile usage.

'Automobility' is seen by Sheller and Urry as shaping human consciousness in that it structures mobility relations just as capitalism structures class relations. The opposing forces in this relation appear to be 'Automobility' and human beings, all of

---

[31] Sheller & Urry, p738.
[32] Sheller & Urry, p746. See also J Flink, *The Car Culture*, MIT Press, Massachusettes, 1975.
[33] Sheller & Urry, p738.
[34] K Schneider, *Autokind vs Mankind: An Analysis of Tyranny, A Proposal for Rebellion, A Plan for Reconstruction*, Norton, New York, 1971; P Newman & J Kenworthy, *Cities and Automobile Dependence: An International Sourcebook*, Avebury Technical, Aldershot, 1991; D Engwicht, *Towards an Eco-city: Calming the Traffic*, Envirobook, Sydney, 1992.
[35] Sheller & Urry, p747.

whom are subject to the effects of the automobile. Every urban dweller is a victim of 'Automobility' but the costs and benefits fall unevenly according to whether one owns a vehicle or not. Sheller's and Urry's preoccupation with the automobile effectively paints over the lives of the many urban dwellers who do not use cars; where these latter 'unfortunates' are discussed, they are constructed as victims whose daily existence is impoverished and embattled as a result of their 'Lacanian' lack.

Neo-Marxist theoretical frameworks have been criticised for analysing relations of power (understood as domination) through reference to the mode of production. The short-comings of this economic reductionism have been demonstrated in analyses of gender, race, and sexuality. Neo-Marxist studies have also been criticised for their treatment of the individual. According to Wendy Brown, Marx reflects rather than criticises his age when he posits *homo faber*, the need for *man* to labour, as the essential quality of the human species.[36] The actions of individuals and the individuals' interpretations of their own actions can therefore be explained by reference to the economic relations (the modes of production) that structure societies. This theorisation effectively denies individual agency and the exercise of 'freedom', or 'free will', while capitalist relations of production persist. In another critique of neo-Marxist positions, theorists have argued that the role of the State does not simply secure capitalist economic interests, but it also acts as an arena of struggle in which other interests can prevail.

Feminist scholars have provided critiques of liberal and neo-Marxist theorisations of social relations. These critiques do not necessarily challenge the broader insights offered by liberal or neo-Marxist analyses but they indicate how these theoretical traditions ignore, maintain, or are premised upon patriarchal gender relations. The State has not been a central feature of feminist debate as many feminists agree that power is not concentrated in the State but pervades civil society generally. Where feminists have examined the State, they have imagined it as a 'discrete and bounded entity'.[37] Writers such as Carol Pateman have investigated the exclusion of women from the social contract that, according to liberal theorists, founds the sovereign's right to rule.[38] Sylvia Walby has examined different feminist traditions in terms of the way in which they explain how patriarchal relations operate within and through

---

[36] W Brown, *States of Injury: Power and Freedom in Late Modernity*, Princeton University Press, Princeton, 1994, p85.
[37] W Bastalich, *Politicising the Productive: Subjectivity, Feminist Labour Thought and Foucault*, PhD Thesis, University of Adelaide, Adelaide, 2001, p31. This conceptualisation of the State also underpins articles published in journals such as *Social Politics: International Studies in Gender, State and Society*.
[38] C Pateman, *The Sexual Contract*, Polity Press, Cambridge, 1988; S Walby, *Theorizing Patriarchy*, Blackwell, Oxford, 1990.

the State.[39] Through the 1990s, some feminists shifted their critique from the patriarchal nature of the State to the very existence of the State. Drawing on post-structuralist theoretical insights, authors such as Rosemary Pringle and Sophie Watson, Wendy Brown, and Robyn Lister have called into question political categories such as the State and civil society.[40] These latter insights have not yet been brought into feminist studies of transport.

Another important theme of feminist debate has been the 'nature' of the subject that is targeted by power. The subject of liberalism, the individual, has not only been shown to be masculine, but also feminists have brought under scrutiny the essential qualities attributed to this subject, particularly that of rationality.[41] Neo-Marxist discourses have been subjected to similar treatment as feminists have questioned the masculine subject and the masculinist conceptions of productivity at the centre of these discourses.[42] In rejecting essentialising and universalising explanations of subjectivity, some feminist theoretical discussions have become increasingly focused upon the formation of consciousness and the processes through which human beings are conferred with and come to assume gendered identities.[43] Much of this work has drawn upon psychoanalytic discourses and relies upon a notion of power as repression operating as it does through mechanisms of interdiction and prohibition.[44] However, feminist theorists have usefully engaged with insights from post-structuralism, post-colonialism and queer theory to examine the procedures through which gendered identities have been brought into effect.[45] Georgine Clarsen's recent study of the simultaneous gendering and disciplining of the motoring body has brought Foucault's work on the production of subjectivity into the study of

---

[39] Walby, pp150-72.
[40] For example: R Pringle & S Watson, ''Women's Interests' and the Post-Structuralist State', in M Barrett & A Phillips (eds), *Destabilizing Theory: Contemporary Feminist Debates*, Polity Press, Cambridge, 1992, pp53-73; Brown, *States of Injury: Power and Freedom in Late Modernity*.
[41] A Jaggar, *Feminist Politics and Human Nature*, Rowman & Littlefield, New Jersey, 1983; Smith, *Subjectivity, Identity, and the Body*, p7.
[42] For a critical review of these feminist critiques in the field of labour theory see, Bastalich, *Politicising the Productive*.
[43] For further discussion see: R Tong, *Feminist Thought: A Comprehensive Introduction*, Routledge, London, 1989; E Grosz, 'Contemporary Theories of Power and Subjectivity', in S Gunew (ed), *Feminist Knowledge: Critique and Construct*, Routledge, London, 1990, pp59-120; R Fincher & J Jacobs (eds), *Cities of Difference*, Guilford Press, New York, 1998, pp1-25.
[44] For an overview see, Tong, pp95-38, 139-72. For a critique of the work of feminists such as Catherine MacKinnon see, Brown, pp77-95.
[45] J Butler, *Gender Trouble*, Routledge, New York, 1990; J Butler, 'Gender Trouble, Feminist Theory, and Psychonalytic Discourse', in LJ Nicholson (ed), *Feminism/Postmodernism*, Routledge, New York, 1990, pp324-40; E Probyn, 'Travels in the Postmodern: Making Sense of the Local', in L J Nicholson (ed), *Feminism/Postmodernism*, pp176-89; M Lloyd, 'Foucault's Ethics and Politics: A Strategy for Feminism?', in M Lloyd & A Thacker (eds), *The Impact of Michel Foucault on the Social Sciences and Humanities*, MacMillan Press Ltd, Houndmills, 1997, pp78-101; Bastalich, *Politicising the Productive*. See also contributions in Fincher & Jacobs, *Cities of Difference*.

mobility.[46] This latter work shall be returned to in the next chapter as it marks a shift in feminist explorations of mobility.

Feminist critiques of liberal and neo-Marxist transport studies have not only highlighted the gendered effects of transport research, policy, and practice but also have attempted to explain the mechanisms and many ways in which women are disadvantaged. Feminist transport writers offer an elaborated, rather than alternative, version of the role of power in maintaining the domination of one group by another. As pointed out in the Introduction, transport in this context becomes an arena of gender struggle whereby men are advantaged or dominate women through their differential access to transport.[47] Set within the broader debate of industrialisation and the spatial separation of the public and private domain, women's access to and use of transport has been seen as being shaped by the interplay between the twin interests of men and capital.[48] As stated in the introduction, the impact of these interests upon women's mobility have been examined in relation to women's roles as homemakers, workers, and users of public space. Each of these themes is outlined briefly below.

Research into the relation between women's roles as homemakers and their mobility has focused upon three key issues. First, researchers have considered the temporal and spatial context which serves to structure women's movement. The temporal framework created by child care and domestic responsibilities often divides a woman's day into small parcels of time. These discrete blocks of time combine with the spatial layout of the urban environment to foreshorten the distances women can travel and the time they can spend away from home, thereby constraining their participation in social and political activities and employment opportunities.[49] Second, feminists have examined the modes of transport available to women as homemakers. It is often argued that the process of suburbanisation stimulated by the expansion of the private railways and tramways in the nineteenth century, and the provision of automobile infrastructure in the twentieth century, has secured the male journey to sites of production while confining women's labour in 'reproduction' to

---

[46] G Clarsen, 'The "Dainty Female Toe" and the "Brawny Male Arm": Conceptions of Bodies and Power in Automobile Technology', *Australian Feminist Studies*, 15(32), 2000, pp153-63.
[47] For a comprehensive review of the literature see, J Bonham, *Women and Transport: A Review of the Literature*, Report to the State Transport Authority, Adelaide, South Australia, 1994, in possession of the author.
[48] S Mackenzie & D Rose, 'Industrial change, the domestic economy and home life', in J Anderson, S Duncan & S Hudson (eds), *Redundant Spaces in Cities and Regions*, Academic Press, London, 1983, pp155-200.
[49] For example: R Palm & A Pred,'The Status of Women: A Time-Geographic View', in D Lanegran & R Palm (eds), *An Invitation to Geography*, McGraw Hill, New York, 1973, pp99-109; P Forer & H Kivell, 'Space-Time Budgets, Public Transport and Spatial Choice', *Environment and Planning A*, 13, 1980, pp497-509; S Young, '"You Can't be om Two Places at Once"', *Social Alternatives*, 1(8), pp17-22.

pedestrian journeys within the local area.[50] Further, the devaluation of women's household labour within capitalism has enabled priority of access to household transport resources, specifically the family car, to be assumed by the 'male' breadwinner for his journey to work, thereby limiting women's ability to travel.[51] Third, researchers have examined the (changing) nature of domestic labour and the implications of this work for the conditions under which women travel and the number and type of journeys they make.[52]

Shifting the focus away from the home, most research into women's travel has concentrated upon women's participation in paid employment. These studies can be categorised into three broad fields of inquiry. First, researchers have examined women's exclusion from transport sector employment either through legislation and specific policy intiatives or through male domination of the industry.[53] Second, the relationship between women's workforce participation and their travel related to domestic responsibilities has been explored. Researchers have been concerned to examine whether men have increased their share of household and child care journeys when their female partners take up paid employment, or whether women's travel patterns change as they negotiate work and domestic journeys.[54] The third and most prolific area of research has been the study of women's journey to work. These latter studies have identified significant differences in male and female journeys to work by distance, mode, time, and nature of travel.[55] The travel differences identified have been explained in relation to four inter-related factors: characteristics

[50] For example: S Saegert, 'Masculine Cities and Feminine Suburbs: Polarized Ideas, Contradictory Realities', in R Stimpson, E Dixler, M Nelson & K Yatrakis (eds), *Women and the American City*, University of Chicago Press, Chicago, pp93-108; R Laub Coser, 'Stay Home, Little Sheba: On Placement, Displacement, and Social Change', in R Kahn-Hut, A Kaplain-Daniels & R Calvard (eds), *Women and Work: Problems and Perspectives*, Oxford University Press, New York, 1982, pp153-59; K England, 'Gender Relations and the Spatial Structure of the City' *Geoforum*, 22(2), 1991, pp135-47.

[51] For example: I Breugal & A Kay, 'Women in Planning', *Architectural Design*, 45(8), 1975, pp499-500; P Stiles, 'The Consequences of "Who Gets the Car" in the One-Car Family', *Proceeding of the Fifth Australian Transport Research Forum*, Adelaide, 1979, pp100-15.

[52] For example: L Pickup, 'Hard to Get Around: A Study of Women's Travel Mobility', in J Little, L Peake & P Richardson (eds), *Women in Cities: Gender and the Urban Environment*, Macmillan Education, London, 1988, pp98-116; E Harman, 'Capitalism, Patriarchy and the City', in C Baldock & B Cass (eds), *Women, Welfare and the State*, Allen & Unwin, Sydney, 1983, pp108-33.

[53] For example, papers published in the proceedings of the First and Second Australian National Conferences on Women and Public Transport: *On the Move: But Where To From Here?*, State Transport Authority, South Australia, 1995; *Women on the Move: Maintaining the Momentum*, TransAdelaide, South Australia, 1997.

[54] L Pickup, 'Women's Travel Requirements: Employment with Domestic Constraints', in M Gierco, L Pickup & R Whipp (eds), *Gender and Transport and Employment*, Avebury, Aldershot, 1989, pp199-222; S Rosenbloom, 'Trip Chaining Behaviour: A Comparative and Cross Cultural Analysis of the Travel Patterns of Working Mothers', in M Gierco, L Pickup & R Whipp (eds), *Gender and Transport and Employment*, Avebury, Aldershot, 1989, pp75-87; S Rosenbloom, *Full Circles*, pp208-42.

[55] For example, P Hanson & S Hanson, 'Gender and Urban Activity Patterns in Uppsala, Sweden', *Geographical Review*, 70, 1980, pp291-96; S Hanson & I Johnston, 'Gender Differences in Work Trip Length: Explanations and Implications', *Urban Geography*, 6 (3), 1985, pp193-219; L Singell & J Lillydahl, 'An Empirical Analysis of the Commute to Work Patterns of Males and Females in Two-Earner Households', *Urban Studies*, 2, 1986, pp119-29.

within the household; characteristics at the site of paid employment; the spatial distribution of paid employment; and the distribution or allocation of transport resources.

Patriarchal relations within the home, expressed partly through the greater role women play in domestic labour and child care, are often cited in explaining differences in men's and women's journeys to work. Researchers have debated whether these differences arise from women fitting employment around household responsibilities or whether specific intra-household factors, including household location and allocation of transport resources, weigh most heavily on women's work trips.[56] Most researchers have focused upon patriarchal relations within the workplace when explaining different travel patterns. These debates have centred on both the gendering and spatial separation of industrial sectors and considered whether processes of segregation limit women's access to transport resources, or alternatively that women's limited access to transport resources have facilitated and maintained industrial segregation.[57] Finally, some journey to work studies have examined ethnic and gender differences in travel, finding that these differences diminish along lines of gender when ethnic differences are taken into account.[58]

A final theme in feminist travel studies has been the conditions under which women travel and their use of public space. Although some of these studies have examined women's differential use of automobiles, most have been concerned with the factors which shape women's use of public transport and public space more generally.[59] The threat of male violence against women has been identified by many authors as acting to limit women's mobility and deter them from using public transport.[60] Much of

[56] For example, S Hanson & G Pratt, *Gender, Work, and Space*, Routledge, London, 1995.

[57] For example, G Guiliano, 'Commentary: Women and Employment', *Urban Geography*, 9(2), 1988, pp203-08; I Johnston-Anumonwo, 'The Journey to Work and Occupational Segregation', *Urban Geography*, 9(2), 1988, pp138-54; A Howe & K O'Connor, 'Travel to Work and Labour Force Participation of Men and Women in an Australian Metropolitan Area', *Professional Geographer*, 34(1), 1982, pp50-64; J Fagnani, 'Daily Commuting Time: The Stakes for Working Mothers in France', *Transportation Research Record*, 1135, 1987, pp26-30; P Villeneuve & D Rose, 'Gender and the Separation of Employment from Home in Metropolitan Montreal, 1971-1981', *Urban Geography*, 9(2), 1988, pp155-79; S Hanson & G Pratt, 'Job Search Strategies and the Occupational Segregation of Women', *Annals of the Association of American Geographers*, 81(2), 1991, pp229-53; K England, 'Suburban Pink Collar Ghettos: The Spatial Entrapment of Women', *Annals of the Association of American Geographers*, 83(2), 1993, pp225-42; S Hanson & G Pratt, 'On Suburban Pink Collar Ghettos: The Spatial Entrapment of Women by Kim England', *Annals of the Association of American Geographers*, 84(3), 1994, pp500-2.

[58] S McLafferty & V Preston, 'Gender, Race and Commuting Among Service Sector Workers', *Professional Geographer*, 43(1), 1991, pp1-15.

[59] V Scharff, *Taking the Wheel: Women and the Coming of the Motor Age*, Free Press, New York, 1991; J Wajcman, *Feminism Confronts Technology*, Polity Press, Cambridge, 1991, pp110-36.

[60] For example: Women and Transport Forum, 'Women on the Move: How Public is Public transport?', in C Kramarae (ed), *Technology and Women's Voices*, Routledge & Kegan Paul, New York, 1988, pp116-34; S Trench, T Oc & S Tiesdell, 'Safer Cities for Women: Perceived Risks and Planning Measures', *Town Planning Review*, 63(3), 1992, pp279-96.

this literature on mobility and safety has been concerned with analysing and changing those environmental features which allow violent acts to go unchecked.[61] The extent of violence against women has been contested by transport policy makers but their claims have led into debates over what constitutes violence and who determines a reportable act of violence.[62] According to Gill Valentine, patriarchal relations underpin and legitimate violence against women which in turn shapes women's understanding of the urban environment and their mobility.[63] Jo Little has commented on the way patriarchal relations within the State have reinforced women's vulnerability in public spaces, given the gendered outcomes of economic rationalist policy initiatives and funding allocations.[64]

Together the women and transport literature has explained women's mobility in terms of patriarchal relations operating within civil society, the economy, and the State. Patriarchal relations, like capitalist relations, it is argued, shape human consciousness so that women may act against their own interests. The feminist transport literature, like other empiricist feminist studies, is open to the criticism of universalising the experiences of women. The strongest criticisms have been articulated within the post-colonial literature by writers such as Gayatri Spivak and bell hooks.[65] They have argued that feminist positions, as outlined above, are from white, middle-class, western perspectives and this position continues to be valued over all others (non-white, working-class, developing countries).[66] This criticism has been acknow-ledged by feminists as they have debated how this problem should be addressed.

Implicit within another set of transport texts is an understanding of power in terms of the domination of individuals through bureaucratic institutions, especially the State, which instrumentalise and are shaped by rationality. Power in these texts is conceptualised in terms of the capacity of one party to force its will upon another. Drawing on Leslie Kilmartin, David Thorns, and Terry Burke, these transport studies

---

[61] For example: Matrix, *Making Space: Women and the Man Made Environment*, Pluto Press, London, 1984; S Ohlenschlager, 'Women also Travel', in S. Trench & T. Oc (eds), *Current Issues in Planning*, Gower, Aldershot, 1990, pp26-32; G Wekerle & C Whitzman, *Safer Cities: Guidelines for Planning, Design, and Management*, Van Nostrad Reinhold, New York, 1995.

[62] S Atkins, 'Women, Travel and Personal Security', in M Grieco, L Pickup & R Whipp (eds), *Gender, Transport and Employment*, Avebury, Aldershot, 1989, pp169-89; S Trench, T Oc, & S Tiesdell, 'Safer Cities for Women: Perceived Risks and Planning Measures', *Town Planning Review*, 63(3), 1992, pp279-96.

[63] G Valentine, 'Images of Danger: women's Sources of Information About the Spatial Distribution of Male Violence', *Area*, 24(1), 1992, pp22-29.

[64] J Little, *Gender in Planning and the Policy Process*, Pergamon, Oxford, 1994.

[65] Fincher & Jacobs, p23.

[66] L McDowell, 'Space, Place and Gender Relations: Part II. Identity, Difference, Feminist Geometries and Geographies', *Progress in Human Geography*, 13(3), 1993, pp305-18.

can be located within a Weberian theoretical frame.[67] At the heart of these studies has been a concern with the maximisation, under capitalism, of the State which imposes 'its' will upon, and consequently oppresses, the citizens it governs. Urban freeway construction in the 1960s has been examined in relation to the calculative procedures of transport bureaucracies and the inability of these bureaucracies to take account of the individuals and communities affected by their decisions and for whom they ostensibly plan.[68] Recent work on travel blending echoes these concerns as it seeks to address the impersonal controls that State transport departments have imposed on those who travel.[69] Travel blending enthusiasts propose that, rather than bureaucracies imposing on individuals transport experts should work with individuals, to discover the motives for their travel behaviour and devise ways to optimise their journeys.[70]

The theoretical positions reviewed above share two broad features in common. First, they each accept that truth is separable from and only exists beyond the operation of power. This possibility is interrogated in the next chapter as it is argued, following Foucault, that the production of knowledge which can claim the status of truth is fundamentally linked to the modality of power which operates within a given context. Second, but related to this first point, is the fact that the theorists discussed above each accept the ontological status of the phenomena (or, more accurately, the categories) they seek to analyse. These theorists not only assume the existence of power, freedom, the State, civil society, the individual, and the rule of law, but also they share a common conception of political power as they accept the language (of liberalism) through which political life is ordered. They each perceive the locus of power, the nature and operation of power, the subject targeted, and the interests served by power in similar ways. It is through such commonalities that these theoretical frameworks may be said to be underpinned by an understanding of power as juridical or sovereign.[71]

The State is identified as an important locus of power, as power is seen to be concentrated within, facilitated by, or legitimated through this site. The State is

---

[67] Kilmartin, et al, pp39-56.

[68] G Fellman, 'Neighbourhood Protest of an Urban Freeway', *Journal of the American Planning Association*, 35, 1969, pp118-22.

[69] E Ampt & A Rooney, 'Reducing the Impact of the Car - A Sustainable Approach: TravelSmart Adelaide', *Proceedings of the 22nd Australasian Transport Research Forum*, Transport Data Centre - NSW Department of Transport, Sydney, 1998, pp805-22; A Rooney, 'Transport Systems and Cities Viewed as Self Organising Systems', *Proceedings of the 22nd Australasian Transport Research Forum*, Transport Data Centre - NSW Department of Transport, Sydney, 1998, pp789-803.

[70] For a critique of travel blending programs, see D Ferretti & J Bonham, 'Travel Blending: Whither Regulation?', *Australian Geographical Studies*, 39(3), 2001, pp302-12.

discursively positioned as external to civil society and imposes upon society and the free individuals which comprise it. Civil society may be an arena of struggle but power is conceived of as a negative force which distorts the operation of that society. Power is always exercised in order to promote particular interests, whether that of the public, the bourgeoisie, or men. The nature of power is conceived as domination; it is repressive and extractive. It takes the form of the rule as it operates to prohibit and exclude particular choices or demand actions, objects, and obedience from the individual, thereby limiting individual 'freedom'. 'Freedom' is understood as a condition of being which cannot exist in the presence of power but only exists outside, or beyond the operation, of power.

The individual alone or as a member of a class, gender, or mobility group is the subject or target of the operation of power. As demonstrated above, neo-Marxist and feminist commentators have challenged the individual and/or the attributes of the individual constituted within liberal discourse. However, implicit in these texts is an understanding that the individual precedes the operation of power. Power is considered to distort both social relations and the consciousness of individuals. But for the perverse effects of power, social relations and individuals would be otherwise. Power acts upon individuals either by working upon consciousness to influence the individual's choices or by shaping consciousness and the actions, thoughts, and desires which flow from that consciousness, thereby making it possible for individuals to behave against their own interests.[72] This formulation of the individual as a being whose actions and consciousness are distorted by the operation of power is underpinned by a conceptualisation of an ideal individual and ideal social relations. It is this notion of an 'ideal' which leads Hindess to argue that the subject of some neo-Marxist and feminist texts is not so far removed from the individual of liberal theory.[73] The individual formed outside of relations of power would display different attributes, irrationality or rationality, while a society undistorted by power struggles would be a participatory democracy.

Foucault's work effectively challenges the ontological status of the categories through which contemporary political thought is ordered. This challenge has far reaching implications for the theoretical frameworks outlined above and for the field of transport more generally. The transport studies derived from different theoretical traditions necessarily reinscribes, implicitly or explicitly, the categories deployed

---

[71] Foucault, *Power/Knowledge*, p88.
[72] This is exemplified in the transport literature by Freund & Martin, pp5-8.
[73] Hindess, pp68-95.

within those theoretical frameworks. For example, feminist and neo-Marxist theorists share the liberal belief in the existence of the State and the constituent elements of the State (military, police, parliamentary executive, bureaucracy), although they may differ in their understanding of the role of the State. These same theorists have challenged the individual as posited in liberal discourses but they accept the existence of the individual and confer this individual with different qualities such as femininity or productivity.[74] In retaining the language of liberalism these radical theorists constrain their approach to the field of study, for example, how they investigate transport, and thus limit the radicalism of their agendas.

As researchers interrogate the ontological status of some categories, it is possible to broaden this mode of inquiry to a range of terms which are taken for granted. Transport theorists have not only taken up the language of liberalism unproblematically, but also they have assumed that language is a transparent medium through which the world can be known and represented more or less accurately. They have not reflected on the language they deploy, the effects of such language, nor that this language may actively assist in valuing some travel practices over others. The transport studies outlined above have all instrumentalised the dichotomous terms of modernism: public sphere/private sphere, independence/dependence, choice/captive, freedom/constraint, male/female, mind/body, automobile/non-automobile. Post-modern and feminist post-modern critiques of modernism have demonstrated how the linguistic logic of these binaries operate to value the first of each of these categories over the second.[75] Non-automobile travel is aligned with the devalued side of the dichotomy. Further, this binary logic effectively restricts thinking to the boundaries set by each dualism and consequently reproduces the socio-cultural perspectives and value systems through which the dichotomies have been constituted.[76] As long as these dichotomies are used in reflecting upon travel, transport theorists will be complicit in devaluing certain travel practices (such as walking and cycling) over others.

Following Foucault, it is argued that the categories outlined above do not have essential qualities, but that they provide a way of ordering both political thought and reflections upon urban movement which enables liberal government, as it is understood in the Foucauldian sense. The question of liberal government and the categories employed in liberal discourses shall be returned to in Chapter Three. The

---

[74] For a discussion of this essentialising tendency see Bastalich, *Politicising the Productive*; Brown, pp77-95.
[75] Grosz, pp92-103.
[76] I M Young, 'The Ideal of Community and the Politics of Difference', in L Nicholson (ed), *Feminism/*

problem in this context is the category 'power' and how it links to the production of knowledge.

In rejecting the notion that 'power' has any essential qualities it is possible to reject the understanding of power as domination. It opens the way to actively (re)constitute and broaden this category. Foucault argues for a conceptualisation of power as those human relations 'in which one wishes to direct the behaviour of another'.[77] Power then is not limited to particular sites or modes of operation; instead, power is immanent to society as it may exist wherever human relations exist. The exercise of power encompasses a diverse array of tactics deployed by individuals and agencies that are directed toward achieving desired outcomes. These many and varied tactics can be inserted into Foucault's typology of power (published posthumously), which characterises modalities of power according to the stability of the relations involved.[78]

According to Foucault, relations of power may be described as domination, strategic games of liberties and government. Domination or juridical power is outlined above and leaves those targeted with very little room to manoeuvre. Strategic games of liberties are those relations in which the outcomes are unstable and may be reversed.[79] Government includes those 'modes of action more or less considered or calculated', as those who seek to govern use reflection and calculation to structure the possible field of action of those they seek to govern.[80] If these different types of power could be placed on a spectrum, government would be situated between domination and strategic games of liberties.[81] Governmental power, according to Foucault, is the pre-eminent modality of power in contemporary societies.[82] This typology of power draws new links between the operation of power, the subject targeted by power and the production of knowledge. These links are explicated in the following chapter.

Postmodernism, Routledge, New York, 1990, pp300-23; McDowell, p308.

[77] M Foucault, 'The Ethic of Care for the Self as a Practice of Freedom', in J Bernauer & D Rasmussen (eds), *The Final Foucault*, MIT Press, Cambridge - Massachusettes, 1988, p11.

[78] Foucault, *The Final Foucault*, p19.

[79] Foucault, *The Final Foucault*, p18.

[80] M Foucault, 'The Subject and Power', *Critical Inquiry*, 8, 1982, p790.

[81] Foucault, *The Final Foucault*, p19.

[82] M Foucault, 'Governmentality', in G Burchell, C Gordon & P Miller (eds), *The Foucault Effect: Studies in Governmentality*, University of Chicago Press, Chicago, 1991, pp102-03.

Conclusion

Power is rarely the subject of reflection within the field of transport. However, the preceding discussion demonstrates that transport knowledge is informed by a specific conceptualisation of power as domination. Further, transport researchers may deploy different theoretical frameworks but they share understandings of key attributes of political power and use common categories for ordering political thought. As stated in the introduction, the current study is premised on the notion that the language and discursive strategies used in creating knowledge have effects, they delimit how the world can be perceived and consequently intervened upon. In accepting and instrumentalising the categories through which political thought is ordered, transport researchers both reinscribe that order and locate their research questions and the knowledge they produce in relation to that order. Knowledge about urban travel is historically located within a particular understanding of power and the political domain and this has effects on the knowledge produced. This claim draws one link between power and the production of knowledge about urban travel. The following chapter deploys Foucault's reconstituted category of power to explore these links further.

ON POWER, SUBJECTIVITY AND GOVERNMENT

The production of knowledge about urban travel has emerged within a particular historical context. It is a moment in which the exercise of political power is ordered through a range of categories including the State, civil society, the economy, and the individual. It was claimed in the previous chapter that this historical positioning of knowledge about urban travel has implications for the production of knowledge. The present chapter explores these implications in more detail. In particular, it explicates Foucault's reconceptualisation of the relation between knowledge and power as it interrogates the political categories which underpin and inform discourses on urban travel. It is argued that once the essential nature of these categories is challenged, an entirely new approach to the rise and proliferation of contemporary urban travel practices is opened up to investigation.

The first part of the chapter examines the category of the individual and the mechanisms through which individuals have been brought into effect and come to acknowledge themselves as individuals, specifically as travellers. The second part of the chapter examines the relationship between the formation of individual identities and the deployment of these identities in the government of populations and the government of travel. It commences with an analysis of the categories constituted within discourses on liberal government (such as government, economy, State, and society) and the implications of these categories for the government of the population. The discussion then proceeds to explore the relation between the government of populations, the production of knowledge, and the discursive formation of individual identities within fields of knowledge such as travel. Given these theoretical insights, the final section elaborates on the specific questions investigated within the present study and how these questions will be addressed in this thesis.

Power and Subjectivity: Making the Individual

A central category in both the production of knowledge about urban travel and the exercise of political power is the individual. As stated in the previous chapter, the individual is widely understood as a being who, at its innermost core and once all the

layers of socialisation are stripped away, is 'unified' and unique.[1] Contemporary urban travel theorists generally represent the relation between this individual and the exercise of power as a relation of domination.[2] Individuality and the freedom of the individual are perceived as being threatened and restricted through the operation of power. Urban travel theorists have imagined the relation between the individual and the production of knowledge in several ways. The individual may be a producer of knowledge, an object of knowledge, or target of knowledge, that is, a being to be educated or whose consciousness is shaped by knowledge. The individual in all these accounts is detached from knowledge: as an objective researcher, as one who provides information, as one who accepts or rejects the knowledge available. Foucault's reconceptualisation of power and its relationship to knowledge calls this individual into question.

Foucault provides a radically anti-essentialist approach to the formation of the individual by locating the individual at the very intersection of power and knowledge. He argues that it has been through the operation of a particular type of power, bio-power, that human bodies have come to be known and pronounced upon as individuals. This form of power falls into Foucault's typology as governmental power. Its operation, as explicated below, serves to separate bodies from each other and order them in relation to one another. These procedures of individuation and totalisation enable information to be gathered about singular bodies and knowledge created about populations. The production of knowledge about the attributes, actions and interactions of human bodies has made it possible to perceive bodies as individuals, to fix them in their individuality, and entice them to acknowledge themselves as individuals. Far from crushing the individual, the very possibility that human beings can think about themselves as individuals is itself the outcome of the relationship between power and knowledge. It is in this sense that Foucault regards power as productive and his work on bio-power explicates how relations of power and knowledge have brought the individual into effect.

The knowledge produced through different fields of study constitutes human beings as individuals at the same time as conferring identities upon those individuals, for example as workers, students, or parents. Following from this, the body that travels is simultaneously constituted as an individual and conferred with the identity of the

---

[1] S Hall, 'Introduction: Who Needs Identity?', in S Hall & P du Gay (eds), *Questions of Cultural Identity*, Sage, London, 1996, p1.
[2] A Rooney, 'Transport Systems and Cities Viewed as Self Organising Systems', *Proceedings of the 22nd Australasian Transport Research Forum*, Transport Data Centre – NSW Department of Transport, Sydney, 1998, pp789-803.

traveller through the production of knowledge about urban travel. This claim is not to deny the existence of people or their actions; rather, it is to argue that the processes of bringing those actions under scrutiny and interpreting them makes it possible to perceive human beings as particular types of individuals. The knowledge produced about different aspects of human bodies can then be used to elaborate techniques of power as policy makers, amongst others, attempt to guide the conduct of the population in diverse ways.

There are two important consequences of this anti-essentialist theorisation of the individual. First, the bodies brought under scrutiny by transport researchers are not 'natural' beings expressing their unique desires in travel. They are bodies already and continuously worked upon through relations of power and knowledge. Second, urban travel researchers do not stand outside of the conduct of travel and objectively observe that conduct. Rather, they are complicit in (re)inscribing the category of the individual as they elaborate a new identity for the individual, that of the traveller. Researchers actively distinguish which bodies and actions are to be included in, or excluded from, the study of travel. This process determines what can be known about urban travel, how journeys can be interpreted, and the different attributes that comprise the identities of different types of travellers. The knowledge produced about urban travel has implications for the tactics, strategies and plans developed and deployed by policy makers. The discussion now turns to those procedures through which bodies are individuated and how these processes might be applied to urban travel.

The Individuation and Totalisation of Bodies
Techniques of individuation and totalisation are also processes of objectification and subjectivisation, that is practices through which bodies become objects of study and are tied to particular identities, or subjectivities. Foucault traces out two distinct, but by no means exclusive, modes by which bio-power subjectivises, or makes subjects of, bodies: discipline, whereby bodies are worked upon to maximise their capacities, and bio-politics, which works upon the body as part of the human species.[3] Both of these forms of bio-power individuate bodies; however, they each have different modes of operation. The remainder of the discussion focuses upon discipline as, following Foucault, it is argued that discipline is fundamental to the formation of human beings who regulate themselves.[4] Self-regulation is essential to contemporary

---

[3] M Foucault, *The History of Sexuality Vol. 1*, Penguin, London, 1978, p139.
[4] M Foucault, 'Governmentality' (Translated by Colin Gordon), in G Burchell, C Gordon & P Miller (eds), *The*

travel practices and I am concerned to examine the role of discipline in creating self-regulating subjects of travel.

According to Foucault, disciplinary power formed first and

> centred on the body as a machine: its disciplining, the optimization of its capabilities, the extortion of its forces, the parallel increase of its usefulness and its docility, its integration into systems of efficient and economic controls.[5]

Discipline works through a multiplicity of minute, daily coercions which occur within a range of sites distributed throughout the population. Disciplinary power works upon bodies as objects, constituting them as individuals through methods of spatial distribution, temporal arrangement of activities, genesis or the accumulation of time, and the composition of forces.[6]

'Travel' in modern cities lends itself to a Foucauldian analysis, given the spatial organisation of travellers, the scrutiny and training of travelling bodies, and the practices of inscription which enable comparisons between and observations of travellers over time. These methods of individuation are outlined below together with some indication of how they might be applicable to urban travel.

'Discipline', argues Foucault, 'proceeds from the distribution of individuals in space'.[7] Spatial distribution involves the separation of bodies displaying similar characteristics into particular spaces. For example, hospitals, asylums, prisons, schools, factories, and streets are all spaces allocated to particular bodies. These spaces are then internally differentiated according to the specific characteristics of each body: hospital wards, graded class rooms, sections in prisons, and street spaces are allocated to bodies according to their distinguishing attributes. Further, each individual has its own place within the internally differentiated spaces. It is through this spatial distribution of bodies that those who work, learn, or travel can be compared with each other and arranged in places according to skill, proficiency, severity of disease, or speed of movement. The control of space, whether in the factory, school, hospital, or street, enables the surveillance of bodies and the accumulation of knowledge about those bodies so that they can be ranked or ordered hierarchically according to the context of work, education, disease, or travel in which

Foucault Effect: Studies in Governmentality, University of Chicago Press, Chicago, 1991, pp87-104.
[5] Foucault, *History of Sexuality*, p139.
[6] M Foucault, *Discipline and Punish: The Birth of the Prison*, Penguin, London, 1977, pp141-68.
[7] Foucault, *Discipline and Punish*, p141.

they are located. Bodies are not fixed in place but move through the levels or stages appropriate to their context; they circulate, exchanging places (from the footpath to the carriageway) according to skills acquired or deficiencies made evident.

Temporal control of activities is also fundamental to the operation of disciplinary power. On a broad scale, timetables serve to partition activities, creating an ever finer compartmentalisation of time. At an even more minute scale, detailed attention to actions such as the march of soldiers to the beat of a drum determines the duration of each individual movement involved in taking a step. The speed and efficiency of gestures are calculated through the relation of the body to the individual gesture; posture enables more efficient movement. Temporal control not only ensures against waste or loss of time but it also extracts 'ever more available moments and, from each moment, ever more useful forces'.[8] It has been possible to increase the efficiency of movements by identifying actions necessary to a task, breaking those actions into their component parts, and practising each component individually and in sequence. The capacities of the body necessary for each type of movement can be isolated, studied, compared across different bodies, and intervened upon to improve the efficiency of each action.

John Law's examination of Portuguese sea travel in the fifteenth century demonstrated the importance of training the body of the mariner to make it capable of using and/or accommodating the new technologies of travel such as navigational instruments.[9] The use of modern vehicles such as trains, trams, bicycles, and automobiles appear susceptible to a similar analysis. However, the travelling body of the nineteenth and twentieth centuries may be qualitatively different from the fifteenth-century sailor given the accumulation of knowledge beyond the tasks to be performed, to the actions which make up those tasks, the sequencing of those actions, the specific capacities necessary to each action, and the relationships between the body's capacities. The field of Psychometrics was established in the late 1800s as researchers isolated, studied, compared, and reported upon the capacities of the body, especially those necessary to interacting with machinery.[10] This knowledge could be used to intervene in the body, facilitating the training and development of the body's capacities to undertake tasks more efficiently and expand the range of tasks undertaken.

---

[8] Foucault, *Discipline and Punish*, p154.
[9] J Law, 'On the Methods of Long-Distance Control: Vessels, Navigation and the Portuguese Route to India', in J Law (ed), *Power, Action, Belief*, Routledge & Kegan Paul, London, 1986, pp234-63.

According to Foucault, training the body to act and move more efficiently brought into effect a new type of body, 'the natural body, the bearer of forces and the seat of duration...'.[11] This new body is not only invested with time through the temporal ordering of activities and the minute investment of time upon actions, but also the body is seen to reject spontaneously that which is incompatible. The body becomes an object of knowledge as its limits can be determined and new techniques applied to enable new movement. The studies of interactions between bodies and machines have detailed the limits of the body in operating machines and suggested interventions to make machinery more compatible with the body. The crash car dummy and the study of vehicle ergonomics detail the relationship between the natural body and the moving machine.[12] Georgine Clarsen's work demonstrates how gender was inserted into this relationship as different capacities were attributed to male and female bodies and changes in automobiles explained according to these differences.[13] However, the body is not simply a cell within the machinery of the school, the factory, the vehicle, or street; but it is found to be 'natural' and 'organic' as it automatically rejects those movements and actions which are excessively artificial.[14] Each body has its own limits making it unique within the overall range of bodies.

The third method by which disciplinary power constitutes the body as an individual is through the organisation of geneses; that is, through 'taking charge of individual existences' and organising the formation of the individual over time.[15] The 'seriation' of skills such as reading, drawing, and so forth involves dividing and ordering tasks hierarchically so that the body moves from simple to more complex tasks: as each task is mastered it serves as the basis for the next task. As the body is invested with skills through time, it accumulates time, and the acquisition of each new skill involves capitalising upon past skills. The anticipated shift from travelling as pedestrian to child cyclist to motorist is suggestive of such a 'seriation' of skills in the field of travel.[16] This accumulation and capitalisation reveals a sequential time, the development of the body through time which is the formation or genesis of the

[10] J Crary, *Suspensions of Perception*, MIT Press, Cambridge-Massachusetts, 1999, pp26-27.
[11] Foucault, *Discipline and Punish*, p155.
[12] For example: S Black, *Man and Motor Cars: An Ergonomic Study*, Secker & Warburg, London, 1966; B Peacock & W Karwowski (eds), 1993, *Automotive Ergonomics*, Taylor & Francis, Washington, DC, 1993.
[13] G Clarsen, ' The Dainty Female Toe' and the 'Brawny Male Arm': Conceptions of Bodies and Power in Automobile Technology', *Australian Feminist Studies*, 15(32), 2000, pp153-63.
[14] Foucault, *Discipline and Punish*, p156.
[15] Foucault, *Discipline and Punish*, p157.
[16] City of Salisbury cited in A McConnell, Salisbury State of the Environment Report, Unpublished Graduate Diploma Thesis, Urban and Regional Planning, University of South Australia, 1996, p31.

individual.[17] It is through exercise, the constant repetition of different tasks, that the body comes to master the tasks it is set, acquiring knowledge and exhibiting good behaviour over time.

The final disciplinary method through which bodies are constituted as individuals is through the composition of forces. The composition of forces involves locating bodies in relation to each other, within schools, factories, hospitals, and streets, and manipulating them toward a particular outcome. For example, workers are deployed in relation to each other within factories so that their individual labour produces an outcome greater than the sum of its constituent parts. The school bell, the work siren, the train whistle, bus timetable, and traffic light serve to synchronise, co-ordinate, compose, and combine individual forces. The forces of individual bodies are composed in such a way as to produce an efficient formation, whether in the form of a school, a factory, or 'platoon' of vehicles moving uniformly through a series of traffic lights.[18] And each of these formations is tactically arranged in relation to the others so as to increase the capacities of the whole. For example, the changes in traffic light timing or the increase in transit services are organised according to employment, shopping and educational routines. It is through these disciplinary techniques that the body is integrated into systems of efficient and economic controls.[19] The body is the object of these disciplinary methods and it is through these methods (spatial distribution, temporal control, genesis, and composition of forces) that the body comes to be constituted as an individual.

Disciplinary power does not act to reduce the forces of the body; rather, it seeks to multiply them, maximising, ordering, and utilising the capacities of the body: 'it seeks to bind them together in such a way as to multiply and use them'.[20] The individual is the outcome of disciplinary power and the target for the elaboration of further techniques of power. It is through the operation of these methods upon an otherwise unruly mass of humanity that bodies can be separated out from each other. These techniques make it possible to 'think' and 'see' the individual, thereby bringing the individual into effect. The type of individual which may be produced through these methods is not as important as the techniques themselves.

Disciplinary methods are so effective because the individuals they bring into effect are themselves vehicles through which such power operates. The individual is

---

[17] Foucault, *Disipline and Punish*, p160.
[18] A 'platoon' of vehicles describes a set of vehicles which move together through a series of traffic lights.
[19] Foucault, *History of Sexuality*, p139.

simultaneously the outcome of disciplinary techniques, the target for the elaboration of further techniques of power, and the vehicle through which such power operates. Disciplinary power does not operate externally upon the human mass exhorting obedience and exacting revenge; rather, it operates from within the population, bringing about internal order through constant, minute, and multifarious coercions. Individuals are themselves the vectors of coercion as they are the means through which Foucault's so-called 'general instruments of power' can operate. These instruments are hierarchical observation, normalising judgement, and examination.[21] Together, the general instruments of power ensure the efficacy of the disciplinary methods and tie individuals to their identity by means of objectification.

Hierarchical observation objectifies the individual as it makes the individual the object of scrutiny or study. It includes those techniques which make the individual available to observation and relies on such observation as a means of coercion. For example, spaces are arranged in such a way that each individual occupies a place and the gaps between each place are observable by their immediate supervisors – the gaps are as important as the places themselves. These techniques force individuals into full view and they induce effects of power as individuals behave in particular ways in response to the threat of observation. In contrast to the operation of sovereign power whereby the sovereign is in full view while the subjects are made invisible, here the subject is visible and the constant threat of observation becomes the principal mechanism of coercion.

Those who observe do not stand outside of the field in which they operate but, instead, are integral to that field, whether it be the factory, the school, the reformatory, the hospital, or some other site. Those in supervisory positions perform productive tasks at the same time that they observe, gather information, and report upon those in their charge: 'surveillance [is] an integral part of production and control'.[22] The contemporary hospital provides a useful example: the charge nurse on a ward writes reports, distributes drugs, and liases with medical staff at the same time as supervising registered nurses who in turn supervise trainee nurses, nursing assistants, and patients. But individuals are also subjected to scrutiny from those on the same level and those in senior positions are subjected to scrutiny from those below: the supervisors themselves are under constant supervision. Hierarchical observation enables the scrutiny of its objects (individuals) at very close range: the

---

[20] Foucault, *Discipline and Punish* p170.

[21] Foucault, *Discipline and Punish*, p170.

[22] H Dreyfus & P Rabinow, *Michel Foucault: Beyond Structuralism and Hermeutics*, Harvester - Wheatsheaf,

dispersion of monitors, such as foremen in a workplace or prefects in a school, are themselves watched by their immediate supervisors, thereby creating a close pyramidal structure of observation.

The threat of observation touches every individual within the location in which it operates: it is pervasive, enabling the continuous subtle coercion of all of those within its network. This threat is constantly present for users of street space. The street grid with its straight sight lines and uniform set-back of buildings allows for clear observation along the street.[23] It can be argued that a form of hierarchical observation operated through the nineteenth century, and has been maintained in the twentieth century, to produce the space of the street as a space of circulation. Indeed, it is precisely this threat that has been popularised by contemporary urban designers as a means of ensuring safety from personal attack in public spaces.[24] However, the street is a complicated site, as the spatial separation of travellers enables practices of coercion beyond the gaze. Those who use the street (whether for circulation or otherwise) may be kept in check as much by the physical threat to person and property posed by beasts and vehicles as by threat of observation.[25]

Hierarchical observation is linked to a series of techniques which coerce through normalising judgement. The observations made by supervisors of the behaviour of those in their charge are constantly judged as appropriate/inappropriate and rewarded or punished accordingly. Institutions from the army and workplace to the school and hospital subject those within them to a '...micro-penalty of time (lateness, absences, interruptions to tasks), of activity (inattention, negligence, lack of zeal), of behaviour (impoliteness, disobedience), of speech (idle chatter, insolence), of the body ('incorrect attitudes', irregular gestures, lack of cleanliness), of sexuality (impurity, indecency)'.[26] Punishments are not only ordered for infringements against the myriad and minute rules of the workplace, school, or street in which the individual is located, but also they are ordered for those who fail to conform, who fail to reach the standard or perform the duties expected. The vast array of micro punishments and rewards is not aimed at repression but at correction and improvement. Repeated exercise trains the body toward correct behaviour, while promotion into a higher

Brighton, 1982, p156.
[23] For example, R Home, *Of Planting and Planning*, E & FN Spon, London, 1997, pp55-56 .
[24] For example, O Newman, *Defensible Space*, Architectural Press, London, 1973.
[25] Lewis Mumford is one of many who have argued that the wealthy dominated the streets through the physical harm threatened by their horses and carriages. L Mumford, *The City in History*, Penguin, Harmondsworth, 1961, pp424-25. This notion of domination pervades Mumford's discussion of the motorist as 'King' attaining a sense of 'freedom and power' through their use of the vehicle. L Mumford, *The Highway and the City*, Secker & Warburg, London, 1964, pp176-77.
[26] Foucault, *Discipline and Punish*, p178.

grade, level, or rank inculcates correct behaviour. Motor vehicle licensing procedures might be tracked to identify which travel practices are rewarded or punished and how appropriate practices are inculcated in the travelling body.

The distribution of individuals into ranks or grades not only marks and hierarchises qualities and skills, but also functions as part of the system of rewards and punishments. These systems of reward and punishment do not work through law but normalisation. They work on an artificial order as well as through reference to the 'species' body - that which the 'normal' body is deemed capable of at a particular age or stage, and so on. Each individual is compared to and located in relation to the whole. The process of individuation is simultaneously a process of totalisation. The individual is differentiated from others, hierarchised according to his/her abilities, constrained to conform, and excluded if found to be beyond the limits of the normal. Individuals are the object of constant judgement; they are always judging and subject to judgement by others, positioning and being positioned in relation to a standard or norm which is itself calculated by reference to the behaviour of the whole. 'The normal is established as a principle of coercion' as all individuals are constantly classified, ranked, distributed, and valued according to their position in relation to the norm.[27] Coroners' reports, hospital records, individual accident histories maintained by insurance companies, motor vehicle registration, licensing files, and police and court files on traffic offences are all practices of inscription which are potential sources of comparison between travellers, enabling travelling bodies to be sorted and ranked in a variety of ways.

The examination brings together hierarchical observation and normalising judgement in the normalising gaze. Power and truth are combined in the ceremony of the examination when force is deployed in order to establish the truth *of* and *about* the individual. The body is brought into full view as the object of the examination, while those who administer the examination and determine its results do so from relative obscurity. The examination inverts the power relations between sovereign and subject as the subjugated body is made visible while the exercise of power is obscured:

> ...the examination is the technique by which power, instead of emitting the signs of its potency, instead of imposing its mark on its subjects, holds them in a mechanism of objectification...disciplinary power manifests its potency, essentially, by arranging objects. The examination

---

[27] Foucault, *Discipline and Punish*, p184.

is, as it were, the ceremony of this objectification.[28]

The disciplinary techniques which culminate in the examination establishes the individual objectively. The examination is a ritualised process of watching and judging that affirms the efficacy of those methods which bring the individual into effect and provides assurance that these methods are being applied.

The examination has been widely adapted and operates differently in different contexts. For example, the medical examination in the hospital ward involves different procedures from the school or driving test, but they each involve the exercise of power in search of the truth *about* the individual. Through the ritual of the examination, the individual can be qualified, classified, and/or punished.[29] The examiner scrutinises the performance of the body, ascribes it with an identity, pronounces upon it, names it, and locates it in relation to other bodies. The individual may resist such an identity but their attachment to that identity is determined externally by the pronouncements and responses of others to the performance of the body. The identity of the body is not an expression of an interior self; instead the observed performance is written on the body. The performance of the body is not an expression of an interiority of the subject, but rather, 'the inside is an operation of the outside'.[30] The documentation which arises from procedures such as examinations not only differentiates bodies from each other, but also fixes them in their individuality, tying them objectively to their identity.

The practices of inscription through which singular bodies are transformed into documentation have made a 'case' of each body. The body can be kept under constant observation and known in ever more detail as the processes of documentation enable their movements, activities, misdemeanours, and progress to be traced. For example, the procedures through which motorists are licensed and vehicle registrations maintained allows particular travellers to be tracked and their histories created. The documentation of bodies gives each its own history, thereby fabricating the modern individual. In contrast to the assumptions of transport theorists, the individual is not a natural phenomena, discovered and known in ever more detail from the eighteenth century onward. Rather, the modern individual is the outcome of certain intersections between power and knowledge. This individual, the

---

[28] Foucault, *Discipline and Punish*, p187.
[29] Foucault, *Discipline and Punish*, p184.
[30] Deleuze cited in M Lloyd, 'Foucault's Ethics and Politics: A Strategy for Feminism?', in M Lloyd & A Thacker (eds), *The Impact of Michel Foucault on the Social Sciences and Humanities*, MacMillan Press Ltd, Houndmills, 1997, p92.

humanist subject, is endowed with 'a soul, consciousness, guilt, remorse that can be worked upon by other agents'.[31] It is this human subject, the individual, which is incited to speak as the author of its own history.

The Subject and Self-Knowledge

Identities are both pressed upon the body and taken up by the body. Participation in procedures such as the examination involve human beings acknowledging, to varying degrees, the identities made available to them. For example, individuals come to identify themselves as particular types of travellers, 'motorists', through the rituals of the driving examination. The confessional, like the examination, is both a technique through which experts (including transport experts) gather information about the body and a mechanism through which 'individuals' acknowledge themselves as particular types of subject (such as a travelling subject). Adapted from Christian practices, the confessional draws forth the voice of the 'individual'. It combines the pastoral role of the priest with methods from the examination to enable the production of scientific knowledge of the human subject.[32] The relations of power which imbue the confessional do not operate to prohibit or repress the experiences of the subject. Rather, it is through the operation of power that this being is incited to speak of its experiences. Foucault argues that it is through the promise of freedom, available in the discovery of the truth about oneself, that the individual has been encouraged to confess.[33] Power, freedom, and truth are inextricably linked within the procedures through which knowledges (objective and subjective) are produced.

The procedures developed within the confessional, the type and uniformity of questions asked, the structuring of questions and responses, has made it possible for those who listen, the experts, to 'code and control the signifying discourse of the subject'.[34] The social survey developed through the nineteenth century and elaborated in the twentieth century is a variation of the confessional. Transport surveys and transport diaries have been adapted from the social survey. These techniques provide researchers with a means of capturing the voice of travellers as their paths are traced across the urban environment. In-depth interviews have also been used to investigate the transport experiences of particular groups of people, such as women and the elderly.[35]

---

[31] B Hindess, *Discourses of Power: from Hobbes to Foucault*, Blackwell, Oxford, 1996, p115.
[32] Foucault, *History of Sexuality*, p59.
[33] Foucault, *History of Sexuality*, p59.
[34] Dreyfus & Rabinow, p179.
[35] For example, S Hanson & G Pratt, *Gender, Work, and Space*, Routledge, London, 1995, pp82-92; R Dowling

Despite the belief, widely held amongst transport researchers, that surveys are objective data gathering methods and in-depth interviews capture subjective data, both of these techniques delimit how human beings can articulate their experiences of travel. The journey identified as having a beginning and ending, being conducted by particular means, and starting or finishing at particular times serve to delimit how the subject can speak about that movement. These techniques of codification and the researchers who deploy them are fundamentally implicated in the pronouncements 'individuals' *can* make about their travel.[36]   Researchers, constrained by the normative methods of their discipline, provide a more or less rigid framework for the subject to speak about their actions, experiences, and/or the meanings they attach to their experiences of travel.   The expert both frames and interprets the pronouncements made by the individual.

The process of gathering and interpreting information is not unidirectional. As social scientists provide a framework through which subjects, such as travelling subjects, speak about their experiences, they also provide a framework through which individuals may understand those experiences.   The research process incites individuals to speak of their journeys through particular categories and acknowledge themselves as travellers in particular ways. The question of the 'means' of travel used in making a journey (bus, train, motor vehicle, etc.) places sharp boundaries around certain aspects of the travel performance and marks them as significant. The expert therefore provides a way in which the traveller can think about and interpret the travel performance, as motorist, pedestrian, public transport, user and so forth. Further, the interpretations offered by the experts re-circulate back into the population. The statements people make about their travel experiences do not spring from a unique understanding of the world. These actions and interpretations of travel are delimited by the cultural context.   Experts assist in providing the range of meanings people can attach to their travel performances.

As individuals come to know themselves as particular kinds of subjects (such as travellers), they regulate themselves according to those subject positions, for example, the student who hands in assignments, the patient who takes the prescribed medication, the traveller who pauses at the Give Way sign or at the edge of the street

---

& A Gollner, 'Women and Transport: From Transport Disadvantage to Mobility Through the Motor Vehicle', *Proceedings of the 21st Australasian Transport Research Forum,* Transport Systems Centre, University of South Australia, Adelaide, 1997, pp337-54.

[36] In recognition of their role in framing responses, researchers such as Jean Duruz make explicit their own words in reporting the responses of interviewees. See for example, J Duruz, 'Romancing the Suburbs', in K Gibson & S

before crossing. This claim is not to argue that human beings acknowledge themselves and assume subjectivities unproblematically; they do of course resist their subjugation. However, this resistance does not come from a pre-cultural, essential self at the core of our beings. It is argued in the present study that these resistances arise from, are made possible by, and may be a necessary result of the multiplicity of discourses through which the body is objectified.

The body is subjugated within a range of discourses as each branch of knowledge seeks to know the body in a particular way. The fields of linguistics, economics, medicine, criminology and transport each objectify the speaking, productive, (un)healthy, criminal, and travelling body respectively, thereby creating new modes of identity or subjectivity. These different modes of objectification and subjectification clash and compete over the body, in turn disrupting any perfect or straightforward uptake of the subject positions made available to the body. The subjectivities available within competing discourses provide sites from which human beings can reflect upon and interrogate the different subject positions that may be pressed upon them. For example, the motorist might reflect upon this identity from the positions available within discourses on health, the environment, community, or economy. It is this possibility of slippage between and reflection upon different subject positions that enables, and perhaps even forces, resistance. The slippage between subject positions, the moments of reflection and instances of resistance that are enabled through clashing discourses, give effect to human agency and provide new ways of objectifying and subjectifying bodies.

The knowledge produced through the human sciences is not a truth about a *natural* body, but is knowledge of bodies already worked upon by power. The operation of power has made knowledge of bodies possible and the techniques of power elaborated through such knowledge enable the body to be objectified in new and different ways, thereby establishing new domains of knowledge. These knowledges and the procedures through which they have been produced may be referred to as discourses. The term 'discourse' is not confined to knowledge produced through scientific procedures, but in the current study this is the predominant way in which the term is used, especially when discussing knowledge of travel.

This thesis takes up Foucault's anti-essentialist theorisation of the formation of the subject and applies it to the study of urban travel. If the subject does not stand

Watson (eds), *Metropolis Now*, Pluto Press, Leichardt, 1994, pp17-32.

outside of the objectifying practices of the human sciences but is constituted through these practices, then the travelling subject must likewise be brought into effect through discourses on travel. Travel is not an activity which stands outside of society waiting to be discovered, investigated, and analysed. Researchers do not simply observe travel behaviours or examine travelling bodies. Rather, they actively constitute both practices and subjects of travel through their observations and the techniques of inscription which translate these observations into documentation.

The researcher participates in a continuous process of determining what should and should not be included in the study of travel. For example, the distinction between travel and transport is fundamental to contemporary studies of movement within the urban environment. The terms 'travel' and 'transport' are often elided within discourses on urban travel. However, the very fact that a field of study has been established which calls itself 'Transport' rather than 'Travel' suggests that different practices and possibilities are associated with each of these terms, as some travel practices can be included in the study of transport while others cannot. Transport researchers may challenge the inclusions and exclusions but to remain, and speak authoritatively, within the field of transport, researchers must regulate their work according to the objects of study, the inclusions and exclusions, established within their field.[37] In doing so, they actively reproduce the limits of their field. The decisions taken in the production of knowledge about travel delimit the knowledge possible about travel and consequently the tactics that might be deployed in governing travel.

This thesis challenges the study of travel, specifically urban travel, in three ways. First, it is evident, given the preceding discussion, that this research problematises the notion of the traveller as an individual whose travel practices are the outward expression of an inner self. Second, it questions the view that travel studies are mere observations of individual travel choices and that these studies can stand outside of relations of power to tell more or less precise stories about travel. Rather, it is argued that at a particular historical moment it becomes possible to objectify those practices which have come to be known as travel and this objectification involves the exercise of power. Finally, this study challenges the position that interests working within, through, or with the sanction of the State are sufficient to explain the widespread travel practices, including the usage of automobiles, in contemporary Australian cities.

---

[37] J Bonham & D Ferretti, 'Imagining the Street: From Road Networks to Cultural Boulevards', in E Stratford (ed), *Australian Cultural Geographies*, Oxford University Press, South Melbourne, 1999, pp109-30.

Following Foucault, this research not only challenges the essential nature of the individual, but also it challenges the essential nature of the 'State' and the modality of power exercised by the State. Rather than locating responsibility for present day travel practices within the State, it appears that the very truths created about travel and the travelling subject may explain the proliferation of particular types of travel practices in urban environments. It is these truths which underpin the tactics deployed by agencies within and beyond the State as a multiplicity of organisations seek to govern urban travel. The following section explores the relationship between the modern State and knowledge of the individual as it explores the government of populations in contemporary societies, including the government of their travel.

Subjectivity and Government

Knowledge of urban travel has been established and elaborated within the modern episteme and denotes a period through which the focus of inquiry has shifted firmly away from the study of God to the study of humanity.[38] This increasing reflection upon humanity was not only facilitated by the operation of power but, according to Foucault, it signalled a shift in the modality of power operating within the political domain, that is, a shift from juridical to governmental power.[39] Governmental power, to reiterate Foucault's typology, requires some level of reflection upon that which is to be governed in order to structure the field of action of those who are governed.[40] The exercise of governmental power at the level of the population therefore requires knowledge of the population and the attributes, actions, and interactions of the subjects who comprise the population.

Following from this, it may be argued that the knowledges produced about urban travel have enabled the elaboration of tactics to regulate the conduct of travel. As demonstrated in the previous section, this knowledge is not of 'natural' beings but subjects constituted within discourse. Further, and as argued in this section, the knowledge produced about human beings does not simply enable the State to gain ever tighter control 'over' the individual. Rather, this knowledge is produced within, and instrumentalised through, a range of sites as different agencies, both within and beyond the State, seek to regulate the conduct of travel. These attempts to regulate the conduct of urban travel relies upon the traveller's acknowledgment and self-

---

[38] M Foucault, *The Order of Things*, Routledge, London, 1970, ppxxii-iv.
[39] Foucault, *The Foucault Effect*, pp87-104.
[40] M Foucault, 'The Subject and Power', *Critical Inquiry*, 8, 1982, p790.

regulation as a particular kind of subject.

In order to comprehend the political situatedness of the subject of travel and discourses on urban travel, it is necessary to understand the increased importance of calculation to the exercise of power at the level of the population. Colin Gordon provides a comprehensive account of the circumstances which have enabled government to become the pre-eminent modality of power within the modern state.[41] The most important point to be noted in the current context is that practices of inscription were fundamental to this shift. The concern of the sixteenth-century administrative monarchies for maintaining and strengthening the State led to practices of inscription which made it possible to 'see' the population.[42] According to Foucault, 'seeing' the population facilitated a re-theorisation of how the strength of the State, specifically its wealth, was created and the role of and rationality for the sovereign in developing the wealth of the State.[43] Until the eighteenth century, the accumulation of wealth at the level of the state had been modelled on the family. The publication of Adam Smith's *The Wealth of Nations* at the end of the eighteenth century signalled a repositioning of the economy from the level of the family to the level of the population. The population was identified as the site of the economy, as the actions and interactions of the free individuals who comprised the population animated the economy. This reconceptualisation of the economy marked the inception of the first liberal rationality of government and facilitated a shift in the modality of power at the political level.

A rationality of government may be understood as a way of reflecting upon the 'nature of practices of government' and the nature of the reality to be governed – who can govern, what it is to govern, and who or what should be governed – which makes the activity of government both thinkable and practicable.[44] These reflections upon and the differing responses to questions of government have given rise to different rationalities of government, specifically liberalism and neo-liberalism.[45] In Foucault's schema, liberalism can be differentiated by its nineteenth- and twentieth-century incarnations: the former might be characterised as economic government and the latter as government of the social, or a welfare rationality of government.[46] In Australia, knowledge about urban travel emerged within the earlier phase of

---

[41] C Gordon, 'Governmental Rationality: An Introduction', in G Burchell, C Gordon & P Miller (eds), *The Foucault Effect: Studies in Governmentality*, University of Chicago Press, Chicago, 1991, pp1-51.
[42] Foucault, *The Foucault Effect*, pp100-01.
[43] Foucault, *The Foucault Effect*, p100.
[44] Gordon, p3.
[45] For example, M Dean, *Governmentality: Power and Rule in Modern Society*, Sage, London, 1999.
[46] For an explication of these forms see, Gordon, pp14-36.

liberalism but rapidly expanded with post-World War II welfarism.

Liberalism as a particular rationality of government is informed by the precepts of political economy and as such has the maximal economy as its guiding principal. In Foucault's view, liberalism may be approached as:

> a practice (*pratique*) a "way of doing" which is directed toward goals and which regulates itself by means of continuing reflection. Liberalism, then, is to be analyzed as a principle and method of rationalizing the exercise of government – a rationalization which obeys, and here lies its specificity, the guiding principle of the maximal economy.[47]

Liberalism, according to Foucault, '...is not a dream which clashes with reality and fails to insert itself there'.[48] Rather, it may be regarded as a problem space within which questions and practices of government can be reflected upon, exchanged, and circulated.[49] Liberalism is not an ideology but it is in effect 'an instrument for the criticism of reality' which is guided by the maximal economy.[50] Government according to the maximalisation of the economy includes both governing to expand the economy and governing economically.

As demonstrated with the categories of power and the individual, the language deployed within discourses on government cannot be assumed to describe in more or less precise terms the nature of reality. Following from this, categories such as economy, State, and society must also be held up to scrutiny. It is through examining the context and the way in which terms are used that the essential nature of these categories and their contents can be called into question. Each rationality of government is characterised by a common language which allows for discussions and debates on questions and practices of government. The way in which economy, society, and the State are constituted within liberal discourses also delimits how theorists reflect upon power; the sites in which power is located and the way in which it should be exercised. These shifting categories are instrumentalised within discourses on urban travel and consequently inform the knowledge produced and the tactics pursued in regulating the conduct of travel.

---

[47] M Foucault, 'History of Systems of Thought', *Philosophy and Social Criticism*, 8, 1979, p354.
[48] Foucault, *History of Sexuality*, p355.
[49] Gordon, p16.
[50] Foucault, *History of Sexuality*, p355.

Economy

The economy has been characterised as a natural domain which has its own laws and self-regulatory mechanisms. This domain, as indicated above, is a consequence of the myriad actions and interactions of the individuals which make up the population. The individual as the fundamental component of the population is identified within liberalism as the fundamental component of the economy. This individual is constituted within liberalism as an essential self, a being which exists prior to society and who, once all the layers of socialisation are stripped away, reveals a unique inner core - the true self. The individual, existing as it does prior to society, is located outside of society as a free agent making choices, including travel choices, according to his or her own desires and preferences. The total expression of these choices within a given population creates the economy and thereby the wealth of the nation. The population, the aggregate of individuals, is the site of the economy and the individual creates, as it animates, the economy. This conceptualisation of the economy as a self-regulating domain peopled by free individuals has been used by liberal theorists to delimit the tactics which might be employed by the State in maximising the economy.

State

The categories of the 'economy' and the 'individual' have been constituted within liberal discourses in terms of freedom while the State has been conceptualised as the site of power. In designating the State as the political domain, those (inter)actions which constitute the economic domain are naturalised as relations which exist beyond the operation of power (although they may be distorted by power). The activities of the State, in relation to the economy and the individual, have been reconceptualised within each new rationality of government. However, its central role has remained that of securing the operation of the economy and, consequently, the population, as the essential mechanism of the economy. In undertaking this role, the State must act, or govern, in the name of the truth.

Although the activity of government has been elided by liberal theorists with the State, it is an activity which pervades the social domain acting from a range of sites within rather than outside of society (e.g. churches, unions, families, professional associations, schools, public transport lobby groups). The special feature of the activity of government at the level of the State is that it targets the population of a State in seeking national outcomes. However, the task of government is too vast and expensive to be conducted from a single point. Government is conducted from an

array of sites including, in the case of transport, the school, research institutes and foundations, automobile associations, and road safety lobby groups.

These agencies work at the depths of the population where threats to the population and the effectiveness of tactics of government can be observed more closely. These organisations bring the sources and circumstances of such threats to the attention of the State as they open discussion of how and from which sites these threats should be addressed. Over the past hundred years, road safety organisations have sought to regulate the traveller at the same time as lobbying the State to ensure safe travel conditions. Road safety campaigns have been devised and implemented by coalitions of agencies both within and beyond the State in an effort to secure the well-being of the travelling subject. The lines between the State and civil society begin to blur in such an analysis of government.

The State is obliged to fulfil its role in securing and fostering the freedom of individuals by deploying appropriate tactics. The understanding of the individual as a free agent, a being which pre-exists society who is the author and agent of his or her own history and has the ability to choose alternative ways of acting, predisposes the State to act in particular ways. To act upon the free individual by prohibition would not only be an abuse of power, an infringement upon a free being, but may provoke political unrest. Certainly, the rule of law is utilised in modern states but it is not expected to crush or impose upon the individual. Rather, Gordon argues that the rule of law provides a means of security, reaching into the future and its elaboration within Lockean political jurisprudence guards against the individual, *ad hoc*, exceptional measures of the despot and removes the need to rely on the sovereign's ability to rule wisely.[51] The rule of law identifies the outer limits of acceptable behaviour rather than determining how the subject must behave.

Further, the legislative process in modern democracies offers an effective instrument for the government of free individuals as it allows for the participation of the governed in the elaboration of the law. The rule of law is formulated through reference to the truth and, as knowledge of that which is governed changes, so the legislative process allows for changes, adjustments, and 'fine tuning' of the laws. The rule of law is still operative within government but it has come to reflect the normative values produced by diffusely situated expert knowledge. The law itself is now based in the 'truth' about individual freedom.

---

[51] Gordon, p19.

Society

The rule of law is not the only or even the principle tactic deployed in securing the population and hence the maximal economy. The nature of the economy and the individuals (economic subjects) which people it demand that a raft of tactics be deployed which do not interfere with the natural operation of the economy nor the freedom of the individual. The dilemma of securing the economy and freedom of action without impeding either of them has been addressed within liberal discourses through reference to civil society. The term 'civil society', once understood as a political grouping, has been invested with new meaning. Society comprises the population and encompasses the relations between individuals. In contrast to the economy, society is characterised by the mutual sympathy of its constituents.[52] The population is the site of both the economy and society.

Knowing the 'nature' of society, the subjects which comprise it, the relations between its constituents, and the things which threaten it, makes it possible to structure the field of action of the population without interfering directly with the individual or the economy. Knowledge of society, the reflection upon that which is governed, is integral to governing society and, according to Foucault, this explains the proliferation of knowledges of human bodies and the rapid development of the human sciences. The discursive constitution of society not only provides the object of government, but also it is both the condition of possibility for the social sciences and their object of study.[53] It is society which enables government to operate on behalf of a collective interest, one which provides solidarity between warring interests of individual economic wills.

The population has to be thought or problematised in such ways as to make actions and interactions calculable, and to render programs for governing these activities and relations possible. The human sciences, and to some extent applied sciences such as engineering, have been fundamental to thinking about human beings, behaviours, and interactions in ways which make them knowable, calculable, and therefore governable. For example, before it is possible to govern urban travel, it is necessary to know travel in such a way that it can be rendered calculable.

---

[52] Gordon, p22.
[53] A Barry, T Osborne & N Rose (eds), *Foucault and Political Reason: Liberalism, neo-Liberalism and Rationalities of Government,,* UCL Press, London, 1996, p9.

Processes of inscription have allowed a variety of phenomena to be enumerated, described, measured, and thereby rendered calculable. As Nicholas Rose puts it:

> knowledge here takes a very physical form; it requires the transcription of such phenomena as a birth, a death, a marriage, an illness, the number of persons living in this or that house, their types of work, their diet, wealth or poverty, into material upon which political calculation can work. Calculation, that is to say, depends upon processes of 'inscription', which translate the world into material traces: written reports, drawings, maps, charts and, pre-eminently numbers.[54]

The characteristics, actions, and interactions of bodies, their births, deaths, illnesses, speech, wealth, labour, household arrangements, family relations, and travel could be disentangled and ordered through the variety of disciplines which have emerged.

These processes of inscription pre-dated the nineteenth century but it was not until the beginning of that century, at the intersection with the formulation of the first liberal rationality of government, that the production of knowledge about human bodies underwent rapid expansion.[55] Rendering the population calculable has made it possible to identify and theorise regularities within the population, such as tracing patterns of movement. Expert knowledge has also made it possible to: determine threats to the population including obstructions to, oversupply of and dangerous practices in movement; reflect upon the interventions appropriate to ameliorating these problems, such as altering the conditions under which people travel; and to identify the sites through which the population might be governed, such as the family, the school, the vehicle registration and licensing departments of the State.

The various disciplines of the social sciences examine threats to the freedom and free interactions of individuals. As they do this, they simultaneously constitute the freedoms available to the subjects of their discourses. Freedom, like other categories, has no essential nature but is discursively constituted within different fields of knowledge. Travel has long been constituted within western societies as a kind of freedom. Rather than taking this notion of freedom for granted, it seems more productive to examine discourses on urban travel for the way in which they constitute freedom and what freedoms are available to which travellers.

Governing the subject

---

[54] N Rose, *Governing the Soul: The Shaping of the Private Self,* Routledge, London, 1990, p6.
[55] Foucault, *History of Sexuality,* pp135-45.

The subjectivities constituted within the human sciences are deployed in the policies, programs, strategies, and calculations of agencies both within and beyond the State as they regulate the conduct of the population. The effectiveness of the tactics used relies on the extent to which the subjects targeted regulate themselves according to their own identities. For example, the boundaries of the relation between the lecturer and student may be broadly delimited by the rules of the University but the lecturer does not often resort to these instruments of extraction and prohibition in obtaining student work. The lecturer provides the framework for (or structures the field of) the student's actions and the student's compliance with the lecturer's expectations will vary according to the extent to which they assume the subjectivity of student. The rewards available in assuming this subjectivity go beyond passing the subject and gaining a degree. They include access to a wider range of employment opportunities, increased income earning potential, and a closer fit with definitions of the citizen and the range of attendant benefits this brings. In the field of travel, structuring the subject's possible field of action can be taken quite literally as the width and alignment of streets, timing of traffic lights, street surfacing, and markings which delimit how the traveller might make the journey. These tactics are more or less successful depending upon the extent to which the traveller takes up the identity of the traveller and self-regulates according to that identity.

Techniques of inscription and the knowledges they produce have been condemned by Weber, because he argues the free individual is gradually crushed through the rise and domination of technologies which increasingly rationalise human behaviour and attempt to make it predictable.[56] Andrew Barry, Thomas Osborne, and Nicholas Rose reject this opposition between the subject and all-knowing experts or bureaucracies, arguing instead that 'subjectivity is itself a matter of the technologizing of humans'.[57] The individual and the subjectivities they perform have been constituted through and elaborated by techniques of power and knowledge. The capacities of the body, gestures, speech, and movement have been worked upon through the process of knowing the body. In this sense, knowledge is not of a 'natural' body but a body worked on by power.

The human subject is not imposed upon by relations of power and knowledge but is the outcome of these relations, and it is through these relations that ways of being and behaving are elaborated and multiplied. It is through the production of knowledge that identities are attached to bodies as individual bodies, are known 'objectively'

---

[56] L Kilmartin, D Thorns & T Burke, *Social Theory and the Australian City*, Allen & Unwin, Sydney, 1985, p40.
[57] Barry, Osborne, & Rose, p13.

and come to know and regulate themselves as particular types of subjects. At a particular historical moment it becomes possible to know oneself as a traveller. The final section of this chapter brings together the many questions Foucault's work raises for the field of urban travel and outlines how these questions will be addressed in the present study.

Power, Subjectivity, and the Government of Urban Travel

To reiterate, this thesis problematises the moment at which, and the procedures through which, particular human actions have been inserted into discourse as practices of travel. In addressing this problem, it will be possible to identify how these practices have been ordered and the privileging effects associated with this ordering of movement. I have rejected those explanations of urban travel which rely on notions of progress. Modernist assumptions of progress have served to construct technological innovations as inevitable, evolutionary, and ultimately beyond question. However, technological innovations are firmly tied to and delimited by the social and cultural context in which they emerge and as such they are laden with the values and morality of that context. I have also rejected as insufficient those explanations of urban travel which place responsibility for present day practices with an oppressive bureaucracy or unitary interests which operate through or are legitimised by the State. Rather, this study applies Foucault's insights on the relation between power and knowledge to an examination of the emergence and reproduction of contemporary urban travel practices.

The principle I have adhered to in the current study is to suspect the use of language. As Foucault's work on government exemplifies, language is not a transparent medium through which we can know and reflect the truth about the world; instead, we simultaneously constitute what can be signified by a word as we deploy the word. The disjuncture between the sign and the signified enables slippage, blurring, and ultimately changes in what can be signified by particular signs. Following from this, the most obvious and apparently neutral or natural phenomena such as the terms 'travel' and 'transport' should not be taken for granted. If current travel practices are bound up with how we 'think' and therefore 'know' our movement within urban environments, then we should be suspicious of terms such as travel and transport, the divisions between them and the elision of these words. It is necessary to consider what practices can be included in these terms and how these signs weigh upon our practices.

The questions for this study then do not include 'whose' interests are served by particular travel practices or 'who' is included/excluded in the study of travel, although these issues are important. Rather, the questions to be examined include: what practices can be included as travel and what are the discursive procedures through which these inclusions/exclusions have been made? How are these travel practices, the bodies which perform them, and the spaces of their performance classified, ordered, and hierarchised? What are the privileging effects of this ordering of travel, travelling bodies, and travel spaces? How do travellers come to acknowledge and regulate themselves as particular kinds of travelling subjects? What tactics have been deployed by which agencies in seeking to target and structure the field of action of travellers?

I have used the City of Adelaide in South Australia as a case study for an investigation of changes in practices of travel and their relationship to procedures of knowing travel. Although the findings of this research might be constructively applied to other contemporary urban environments and are intended to tell a story about travel beyond the City of Adelaide, these findings, the theoretical assumptions which underpin them, and the methods used should not be taken up unproblematically. The procedures used and knowledges created about urban travel within Adelaide will have commonalities with discourses produced and instrumentalised in other cities because, borrowing from Edward Said, discourses on travel also travel.[58] However, as discourses are taken up, modified, and elaborated within different places, the outcomes will vary according to their locational specificity.

This study examines texts produced about the spaces and practices of travel within the city of Adelaide from its foundation in the 1830s through to the 1980s. In examining these documents, I am not concerned with providing a more 'accurate' history of urban travel nor in discovering inherent truths about urban travel. Rather, I am interested in the sites in which these travel documents have been produced, how they have been produced, the ways in which travel has been spoken about, and the interventions (or tactics) these discourses have enabled within the space and upon the actions of travel. I have looked for continuities, but especially discontinuities, in the sites which produce texts about travel, the procedures of inscription through which travel has been known, and the stories told about travel. I have also looked for gaps and silences within these texts, the statements made and never repeated, the

---

[58] E Said, *The World, the Text and the Critic*, Faber & Faber, London, 1984, pp226-27.

resistances identified, the categories created to be excluded, and the classifications discarded or never introduced.

The first step in addressing urban travel in Adelaide has been to explore the historical conditions under which the body became available for study as an object of travel. This task involves an examination of the power-knowledge relations through which particular spaces (e.g. streets, roads) have been constituted and contested as appropriate/exclusive sites of travel. These power-knowledge relations simultaneously delineate those social actions and interactions which may be included in/excluded from travel and spaces of travel. The differentiation of travel from non-travel practices, together with the differentiation of travel practices themselves, has implications for the internal division of street space and the individuation of travellers through their spatial separation. As travel and non-travel practices are separated out, it becomes possible to 'observe' the performance of travel and the travelling body, thereby enabling travel itself to be rationalised.

The second task in this study involves examining how observations of travel performances have been made within the Adelaide context, the way in which travel has been rationalised, and the consequences of these rationalisations for the ongoing study of travel. A variety of sites (both physical places and discursive spaces) both within and beyond the State have objectified travel and the travelling body, transforming travel practices into physical traces such as numbers, maps, and diagrams. This study seeks to identify the sites in which travel was documented to determine when and how movement within the urban environment came into view as a distinct object of study. The diversity of sites and practices of inscription not only render travel knowable but also they provide different ways of objectivising travel and the travelling body.

The travel texts produced within different sites will be analysed in order to establish the ways in which they objectify travel and the body that travels. This analysis involves examining data gathering techniques and the procedures of documentation utilised in knowing travel, the innovations in these techniques/procedures, and their consequences for rationalising travel. For example, travel texts surfaced within newspapers, local government reports, parliamentary debates and probably many other places. These sites can act as spaces to gather, sort, classify, and re-circulate the population's chatter about travel. Other agencies have produced knowledges about travel through procedures of inscription established, elaborated, or adopted for their own particular purposes. For example, transport and insurance companies, local

governments, and hospitals are likely sites for movement to be brought under scrutiny as records were required within these agencies on accidents, licensing of activities, and hospital admissions respectively. The degree of authority attached to the texts produced through all of these sites varies according to the procedures they adhere to in creating and reporting what is said about travel. Texts produced in all of these sites will be analysed in terms of how they have produced travel knowledge and what has been said and silenced.

The way in which travel is known has implications for how travel can be rationalised, which itself has consequences for the ongoing production of knowledge and problematisation of travel. The current study explores the uptake of travel 'problems' and the objectification of the travelling body within various disciplines, including town planning, psychology, and medicine. It traces whether and how the body has been investigated and worked upon, or disciplined, at a micro scale to optimise its capabilities, capacities, and efficiency in movement. Further, I examine how both observations and interventions might have worked to bring the traveller to acknowledge and regulate him/herself as a travelling subject. The rationalisation of travel not only delineates the knowledges possible but will set boundaries for the problematisation of travel, what can be a problem or potential problem, what information can be gathered about these problems, and how these problems can be addressed. These problematisations of travel enable further elaborations of travel knowledge and multiply out the disciplines and sub-disciplines which might take up, or be created through, the objectification of travel. This study examines how the problematics of travel have been objectified by different disciplines, multiplying the ways in which we can know travel and the travelling body.

These investigations of the logic, knowledge, and problematisations of travel are embedded within the tactics deployed by agencies seeking to govern the travelling subject. This project provides examples throughout the discussion on the different tactics (programs, policies, strategies) deployed within Adelaide at different historical moments to guide the conduct of the traveller. The final part of this study examines the feminist discourse on urban travel to reveal how researchers themselves, even those with quite radical agendas, have been constrained to understand travel in particular ways and the effects of these constraints on disrupting dominant discourses on travel and dominant travel practices.

Conclusion
Many authors have addressed questions of urban travel out of a concern about the

uneven social outcomes of predominant travel practices and the troubling environmental impacts of those practices. However, in spite of all the accumulated knowledge and all the discussions of the social and environmental risks associated with dominant travel practices, particularly the usage of motorised vehicles, these travel practices have continued to expand. Liberal, neo-Marxist and feminist accounts of travel have provided important insights into the forces which shape contemporary urban travel. However, they all instrumentalise similar conceptualisations of power and fail to question the categories they deploy in their respective theorisations of urban travel, such as the individual, the State, economy, society, and, above all, travel. These commonalities may well constrain how we can think about travel and the consequent interventions which might be made to disrupt dominant travel practices. The following study applies the insights of Michel Foucault to indicate one way in which a diverse array of relations might coalesce to establish and maintain the predominance of particular travel practices.

4

SPEED: ORDERING THE STREET OF TRANSPORT

The present day division, regulation, and use of urban streets as sites for the circulation of traffic should not be taken for granted. Numerous studies exist that describe or seek to explain the changes in the spatial ordering and utilisation of city streets over time.[1] Indeed, paintings and photographs, hawkers' licenses, local government regulations, diary entries, and newspaper articles are all testimony to the diverse array of activities accommodated on Adelaide's streets through the nineteenth and early twentieth centuries. The streets of Adelaide, like those of many other cities, served as a place to meet and socialise, rest or promenade, dry washing, beat carpets, break in horses, play, express political opinions, and gather in celebration. The streets also had specific economic roles, providing employment to scavengers, serving as an extended workshop for blacksmiths and carpenters, and a place of trade for hawkers.[2] From the moment the streets of Adelaide were established through to the early twentieth century, they were gradually transformed from a site which hosted an array of activities into a site of movement or, as Richard Sennett describes it, circulation.[3]

According to Andrew Brown-May, this transformation of the street has been attributed both negatively and positively to the motor vehicle. However, he argues it might be located more appropriately within broader processes of the spatialisation of social relations.[4] Since at least the eighteenth century, particular spaces have been discursively constituted and contested as the most appropriate place for particular social relations. Everything has been accorded a place: the factory and office are dedicated to relations of employment, the home is the site of familial relations, the church is devoted to relations of spiritual care, and so forth.[5] Those bodies that have not fitted neatly into the ordering of socio-spatial relations, those bodies designated

---

[1] For example, J Jacobs, *The Death and Life of Great American Cities*, Penguin Books, Harmondsworth, 1961; S Anderson (ed), *On Streets*, MIT Press, Cambridge, Mass, 1978; R De Jong, 'The Recapture of the Street', in E de Boer (ed), *Transport Sociology: Social Aspects of Transport Planning*, Pergamon Press, Britain, 1986, pp77-91; A Brown-May, *Highways of Civilisation and Common Sense: Street Regulation and the Transformation of Social Space in Nineteenth and Early Twentieth Century Melbourne*, Urban Research Program Working Paper No. 49, Australian National University, Canberra, 1995.

[2] Scavengers or 'orderlies' were employed by the council to collect horse dung from the central streets. P Morton, *After Light, A History of the City of Adelaide and its Council 1878-1928*, Wakefield Press, Kent Town, 1996, p210

[3] R Sennett, *Flesh and Stone: The Body and the City in Western Civilization*, Faber and Faber, London, 1994, pp255-81.

[4] Brown-May, p3.

[5] M Foucault, 1986, 'Of Other Spaces', *diacritics*, 16(1), 1986, pp22-27.

as deviant (the disabled, destitute, orphaned, and indigenous populations), have been inserted into formal relations of ward/carer and assigned their own particular place.[6] These social and spatial relations are both located within and give effect to contemporary urban landscapes.

The process of laying out, or ordering, streets has served to frame the urban population and their relations.[7] Techniques of inscription such as naming, numbering, and recording allotments, buildings, and streets have made it possible to trace and situate members (or non-members) of the population. Streets both frame and separate the urban inhabitants. Each street acts as a gap, like the aisle between desks in a classroom, which divides and distinguishes 'places' from each other. The street is that 'vacant' space which is marked out by, but also assists in maintaining, the arrangement of places designated for specific types of social relations. The street itself, as gap, is not bereft of human interactions, but over time has been gradually specified as the site for particular relations of movement.

As each set of social relations has been allocated a space, the 'public' and 'private' spheres have been brought into effect. This public/private dichotomy was in process in England well before the establishment of the City of Adelaide but it was inscribed and elaborated in the newly founded colony. The streets in Adelaide, like those in numerous other urban centres, have been constituted and contested as particular types of 'public' spaces: places appropriate to circulation. It is argued in the present study that the production of the street as a site of circulation has both enabled and been reinscribed by the production of knowledge about urban transport.

This chapter examines how those narrow strips of land, which effectively create as they demarcate spaces, have been inserted into discourse as 'streets' and inscribed onto the landscape to form the urban grid that is now Adelaide. The chapter commences with a discussion of the discursive mechanisms through which the streets of Adelaide were intervened upon and given effect as sites of circulation. Elaborating the work of Sennett and Brown-May, it is argued that discourses on health and morality were important in constituting the streets of Adelaide as spaces of movement. However, it appears that the minute changes explained and effected through these discourses were not invoked in the ordering of that movement. This chapter explores the increasing importance of economic discourses through the latter

---

[6] Foucault, *Diacritics*, pp22-27; B Gleeson, 'The Social Space of Disability in Colonial Melbourne', in N Fyfe (ed), *Images of the Street: Planning, Identity and Control in Public Space*, Routledge, London, 1998, pp92-110.
[7] See also Deleuze's discussion of the diagram cited in T Osborne & N Rose, 'Governing Cities: Notes on the

part of the nineteenth century and the implications of the 'economic use of time' for the ordering of movement upon the street.

Making Streets to Make Healthy, Upright Citizens

The City of Adelaide was established in 1836 on land named by the indigenous occupants, the Kaurna, as Tandanya. Tandanya is located on a broad plain defined by the coastline in the west and bounded on its other sides by an almost complete semi-circle of hills. This openly wooded plain, criss-crossed by seasonal waterways, was densely written over with the names and daily activities of the Kaurna peoples.[8] The paths that had been formed, together with the open vegetation, facilitated relatively easy access to the interior by the early surveyors and the new non-indigenous occupants.[9] Paths created by the Kaurna were often widened into roads by the new settlers, thereby creating a hybrid landscape.[10] It is a mistake to assume that this re-ordering of Kaurna lands was a straightforward process or that it has been concluded. Although this 'progressive' story of settlement is a popular one, the ordering of the landscape is a continuous operation and in recent times has taken a new turn as old names and different (often unsettling) stories are being actively (re)inserted into place.

Adelaide was founded as the capital of the colony of South Australia toward the end of a long era of British colonial town *planting*. The arboreal metaphors which pervade colonial texts shall be returned to later in the chapter; at this point I am particularly concerned with the features that characterised British colonial town plans in the period 1600-1840. Despite the debate over the authorship of the Adelaide plan, the city's design and settlement processes include all the features of the Grand Model for colonial towns outlined in the 1670s.[11] In accord with this model, Adelaide was set out, first on paper and then onto the land itself, with greenbelts, squares, reservations for institutions of government and exchange, wide streets arranged into geometric (grid) form, and standard sized rectangular plots of land for sale to private investors. Over time, a range of discourses have been invoked to explain the various features of the Adelaide plan and the intentions of its author (whether he was Light or

Spatialisation of Virtue', *Envrionment and Planning D: Society and Space*, 17, 1999, pp738-39.

[8] R Amery, *Warrabarna Kaurna: Reclaiming Aboriginal Languages from Written Historical Sources: Kaurna Case Study*, PhD Thesis, University of Adelaide, Adelaide, 1998.

[9] P Clarke, 'Adelaide as an Aboriginal Landscape', *Aboriginal History*, 15(1/2), 1991, pp58-60.

[10] Clarke, pp59-60.

[11] For debates on the authorship of the plan see: D Johnson & D Langmead, *The Adelaide City Plan*, Wakefield Press, Adelaide, 1986; D Langmead, *Accidental Architect: Kingston, George Strickland 1807-1880*, Crossing Press, Darlington, 1994; R Bunker, 'The Foundation and Laying Out of Adelaide', *Planning Perspectives*, 13, 1998, pp243-255; R Home, *Of Planting and Planning*, E & FN Spon, London, 1997, p8.

Kingston). True meanings and original intent are not at issue here. Rather, the concern is to identify the discourses invoked at different moments to explain these features and the practices, interventions, and tactics enabled through these discourses.

The 'greenbelt' (soon known as the 'parklands') which surrounded the new settlement formed a boundary between townlands and farmlands and the organisation of space which gave effect to these different cultural landscapes. This wide border of land also provided a site for the colony's deviant figures. The insane and destitute asylums, the aboriginal mission, cemetery, and gaol were all established within this area in the early years of settlement.[12] These marginal figures generally occupied the outer edges of the greenbelt along with the Council's slaughterhouse, sewage disposal reserve, and rubbish tip. The more respectable institutions such as the houses of parliament and government, the University, the botanical gardens, and the museum also shared the greenbelt. However, these markers of 'civilised' life lined the inner edges of the 'parklands', specifically along North Terrace, and eventually out-competed rival uses.[13]

The new settlement was cut into the land in two sections and the Karrawirraparri, a seasonal waterway, served to separate the town into its northern and southern parts. That portion of Adelaide located south of the river was divided into four quadrants, each with a public square in its centre. A fifth square was located at the very centre of the city. Planting of the greenbelt and the squares began in the 1850s and was rationalised on the basis of its aesthetic and health giving effects.[14] 'These squares', claimed George Stevenson in 1874, were 'intended as a kind of lungs to the city – breathing spaces'.[15]

The human circulatory (cardio-vascular) system served as a metaphor for urban settlements, including Adelaide, as the health of the city and citizenry were woven together. Circulation of fresh air was understood to play a key role in the prevention of miasma and, according to Sennett, it was the principal that underpinned a raft of urban interventions from the eighteenth century onward.[16] These interventions were not confined to public squares and gardens, but perhaps more importantly, also

---

[12] Morton, pp149-155; R Foster, 'The Aborigines' Location in Adelaide: South Australia's First "Mission" to the Aborigines', *Journal of the Anthropological Society of South Australia,* 16(1), 1992, pp11-37; C Nance, 'The Destitute in Early Colonial South Australia', *Journal of the Historical Society of South Australia,* 7, 1980, pp46-61.

[13] For debates over the removal of the lunatic asylum from the parklands and the relocation of the cemetery see, SAP, *Debates,* 1st Parliament, 3rd Session, 1859, columns 553-4, 596.

[14] T Worsnop, *Worsnop's History of the City of Adelaide,* J Williams, Adelaide, 1878, p121.

[15] SAP, *Debates,* 7th Parliament, 3rd Session, 1874, column 1872 (George Stevenson MHA).

[16] Sennett, p265.

included the streets. Sennett describes numerous municipal regulations and practices which came into effect through the 1700s to ensure cleanliness of the streets and circulation of air, water and waste products through the city.[17] For example, some of the measures introduced included paving and cleaning streets, laying sewers, altering overhead guttering, and making street gutters more effective.

These circulatory principals were also adhered to in the new settlement of Adelaide. From its inception, the Adelaide City Council began to create a raft of by-laws aimed at securing the health of the urban population. Street maintenance activities included filling in pot holes, sweeping pavements, keeping surfaces clear, and drains free from obstruction.[18] These measures ensured water did not collect in pools where it could mix with rotting vegetable matter, animal manure and urine to aid the spread of dangerous gases. Both public and private streets, ways, passages, and yard spaces were targeted by these regulations and maintenance measures.

Inspectors of Nuisances were employed to enforce the regulations[19] and they were supported in their work by the municipality's inhabitants whose olfactory senses had been well trained to detect dangerous odours.[20] The Inspector's reports were filled with excerpts such as the following:

> Hindley Street. Peacock Buildings – Water closet and dust bins in a bad state the persons living in the vicinity complain of the stench arising from this place.

> Hindley Street. Wiseman's Oyster Shop - A large quantity of oyster shells are thrown down by the side of the house which obstructs the foot-path and from which an offensive smell arises.

> Currie Street. Edwards Butcher – Near the Flag Staff. This person throws offal into the street in large quantities, the back of the premises in a dreadful condition from which an awful stench arises, the people in the immediate neighbourhood very much complain about it.[21]

---

[17] Sennett, pp263-65.

[18] ACC, *By-Laws*, 1874, Nos. 31, 42, 43; South Australia, 'Ordinance No 19, 1844', *Acts and Ordinances of the Governor and Council of South Australia*, 1844, Section XLI; Mortlock Library of South Australia: JD Allen, Diaries 1851-7, 5028 (L).

[19] Adelaide City Council Archives: Report of Committee Appointed to Enquire into the Duties of the Inspectors of Nuisances, 1858, ECR/0059 BD3D:01, NU 1858, 0730.

[20] For discussion of how the body has been trained in the sense of smell see A Corbin, *The Foul and the Fragrant*, Papermac, London, 1986.

[21] ACCA: Reports of Inspectors of Nuisances, 1849-1850, ECR/0038 BD2:01.

The replacement of cesspits with an underground sewage network was commenced in Adelaide in the 1880s and went some way to addressing the problems of waste disposal and the smells associated with existing disposal practices.

The dimensions of the streets, specifically their width, length, and regularity, also played a role in the health of the population as they enabled the circulation of air. The Colonization Commissioners advised the city's first surveyor general, William Light, to 'make the streets of ample width, and arrange them with reference to the convenience of the inhabitants, and the beauty and salubrity [sic] of the town'.[22] Certainly, the dimensions of streets were discussed in relation to the 'convenient'[23] passage of travellers, but the authority to pronounce upon the street was contested as health professionals objectified the street within public health discourses. The grid layout of Adelaide with its wide, long, straight roads allowed air to circulate freely, carrying away fetid gases. Private streets, alleys, courts, and passage-ways were quickly cut into the newly laid out town allotments and in 1880 by-laws appeared to regulate the formation of both private and public ways within towns. These thoroughfares were required to be of a minimum width and open in at least two places to ensure light penetrated to the street and air could circulate.[24]

However, the dimensions and alignment of the street were found to exacerbate the circulation of some unwanted elements such as dust. The dust, stirred both by the wind and the activities upon the street, was a source of discomfort well before medical researchers identified it as a source of ill health. Dust particles mixed with dried manure, rather than malodorous air, were eventually found to assist in the spread of tuberculosis.[25] The dust nuisance was initially addressed through street watering but this practice was found inadequate and debates about dust control were drawn into discussions of street surfacing through the late 1890s and early 1900s. Covering the streets with tar paving would not only improve the durability of the street, but also it was argued, it would hold the dust in check.[26] However, tar had the tendency to become sticky in Adelaide's hot summers, and it was not until bitumen was introduced in the 1920s that the problems of street durability and dust were considered to be resolved.

---

[22] Cited in Bunker, p247.
[23] Convenience is a term frequently used but never defined.
[24] South Australia, 'Municipal Corporations Act, 1880, No 190', *Acts of the Parliament of South Australia*, 1880, Part VII, Sections 102, 117, 118, 125.
[25] Morton, p210.
[26] ACC, *Mayoral Report 1890-91*, p 80-81; ACC, *Mayoral Report 1895-96*, p87; ACC, *Mayoral Report 1899-1900*, pp114-15; ACC, *Annual Report 1908*, p33; ACC, *Annual Report 1912*, p9.

The construction and maintenance of streets were not only for the circulation of air, water, and waste, but also for people. Once marked out, some of Adelaide's streets were divided into 'footway' and 'carriageway' following the practice adopted in many European cities.[27] This division was rationalised in architectural texts of the 1600s in terms of a 'natural hierarchy' whereby humans took precedence over beasts in the spaces they occupied on the streets.[28] The separation of humans and animals in 1840s Adelaide was understood within the discursive framework of human health and safety. The footway ensured the urban population a space to move that was free from contamination by mud and manure and safe from the unpredictable actions of animals.[29] Amongst the earliest regulations passed within the new colony were ordinances which allowed fences, or similar structures, to be erected along the footpath to keep carts, carriages, and animals from these spaces.[30]

Colonial ordinances and, later, Adelaide City Council by-laws discursively linked objects to street spaces as they listed out all those things (carts, carriages, animals, people, barrels, boxes, and other articles) which might, or might not be placed, ridden, dragged, pushed, or driven upon the streets.[31] The common factor through all of these lists was that the footway was to remain the preserve of human beings. The division between footway and carriageway ensured the reservation of a space exclusive to people but these regulations did not exclude people from using the carriageway. This latter space continued to be blurred through its utilisation by hawkers, scavengers, prostitutes, bookmakers, animals, conveyances, and people in the process of walking, waiting, and socialising.

Safety upon Adelaide's streets, securing the wellbeing of the street user against external threats, was problematised within the press, parliament, insurance agencies, and local governments.

> During the dark of the moon, it would be desirable that the Police
> Magistrate should give the necessary directions that lamps should be
> hung convenient to the large drains that intersect the thoroughfares.
> Scarcely a night passes without some accident, many of them of a very

---

[27] South Australia, 'Ordinance No 11, 1849', *Acts of and Ordinances of South Australia*, 1849, p34; ACCA: Reports of the Committee of Streets, Sewers and Bridges, 1852, ECR/0030 BD2B:01. See also references to this division in Worsnop, p85.

[28] A Palladio, *The Four Books of Architecture* (reprint of English Edition 1737), Dover Publications, London, 1964, p60. Gutman argues to the contrary, that early divisions of the street saw the centre of the street dedicated to pedestrians and the margins to beasts and vehicles. R Gutman, 'The Street Generation', in S Anderson (ed), *On Streets*, MIT Press, Cambridge – Mass, 1978, pp248-64.

[29] J Blacket, *History of South Australia: A Romantic and Successful Experiment in Colonisation*, Hussey & Gillingham Ltd, Adelaide, 1911, pp160-61.

[30] South Australia, 'Ordinance No 11, 1849', *Acts of and Ordinances of South Australia*, 1849, p34

[31] ACC, *By-Laws*, 1874, No 17.

serious nature. In the gulph [*sic*] at the corner of the Union Bank, no less than five different persons stuck fast in the course of one hour on Saturday evening last, and they each escaped with the loss or destruction of some part of their dress.[32]

Adelaide City Council enacted by-laws to address the personal safety of the diverse collection of people that used the streets. Speeds of animal-drawn vehicles were restricted as they travelled over foot crossings, around corners, and in busy streets where they moved amid other street users.[33] Advertising signs and other obstructions to footways and streets were brought under scrutiny while controls on cellar openings and other 'hazards' were also rationalised through preventing harm to the individual.[34] The street was scrutinised by individual citizens and agencies for all those sites, activities, and objects that could undermine the health and wellbeing of urban dwellers in their use of the street.[35] The nineteenth-century street user was targeted as an object of health and safety. The interventions to alter the spaces of and conduct upon the street sought to secure the conditions which enhanced the health and wellbeing of the population.

The street, as one of many urban spaces, was also an object of scrutiny in discourses on morality and a site in which the street user was targeted as a moral being. The characteristics of streets and the activities upon them were identified and reported by social commentators, politicians, newspaper editors, and social campaigners. It was through the circulation of speeches, articles, letters, books and pamphlets that streets bearing particular characteristics were identified as sites (or likely sites) of immoral activity and home to the individuals who performed immoral acts. This ongoing discourse also provided a space in which human behaviours were observed, detailed, and sorted according to their appropriateness to the space of the street. This process of sorting and dividing street behaviours simultaneously constituted which performances were appropriate/inappropriate within different urban spaces. The practices of urban dwellers upon the street were used to locate them as moral subjects and designate particular types of streets as potential sites of (im)morality.

The physical nature of the street, its location in relation to similar/dissimilar streets, its width, length, the odours, the amount of light which penetrated to its surface, the condition of that surface, the buildings which lined it, and the activities upon it did not simply impact upon the health of the inhabitants but also served as an indicator of

---

[32] *Adelaide Independent*, 5 August 1841, p4. See also *Register*, 28 June 1855, p3; ACC, *By-Laws*, 1874, No 28.
[33] ACC, *By-Laws*, 1871, No 49; ACC, *By-Laws*, 1874, Nos 38, 39, 40, 52.
[34] ACC, *By-Laws*, 1874, Nos 17, 41.

the morality or potential morality of those inhabitants. Narrow, shadowed, poorly maintained, closed ended streets lent themselves to immoral activities and it was in these places that the lower classes resided. The workers' streets were found on the margins, 'off' and 'behind', the wide, bright, streets of the middle-classes. These streets were not open to surveillance. They were sought out by the nineteenth-century commentators such as John Freeman, Stanley James, and representatives of the various Colonial Board's of Health who observed and reported upon street conditions in the cities of Melbourne, Sydney, and Adelaide.[36] Following Lynette Finch, it may be argued that these latter streets were used by middle-class observers to locate themselves and their readership physically within the city and morally in relation to the lower classes.[37]

The discussions in South Australia's press and parliament over 'standing' in Grenfell street provided a forum through which to contest the appropriateness of particular activities both upon the streets and within certain streets. In the face of tote shop closures, the bookmakers, and the gambling crowds they attracted, congregated in the western end of Grenfell Street and outside the Stock Exchange (but off the street) on race days. The Police Act, 1869, and The Move-On by-law instituted by the Adelaide City Council in the 1860s to move prostitutes and other undesirables off the streets, were found ineffective in the face of the large gatherings in Grenfell Street. A Street Obstruction Bill was introduced in 1904 to amend the Police Act and thereby address the 'problem' that plagued Grenfell Street.[38]

The second clause of the bill made standing in any 'public place', including the street, illegal.[39] Politicians were largely agreed on the intent of the second clause to abolish the 'evil' of betting crowds:

> People congregated almost daily in that street and their loitering was a source of great inconvenience and annoyance to business minded people and pedestrians...the crowds constituted a serious nuisance and affected business...preventing people from entering [business] premises.[40]

[35] ACC, *By-Laws*, 1874, Nos 25, 28.
[36] 'The Register' cited in ACC, 'Report on Housing of the Poor', *Mayoral Report 1899-1900*, pp 92-6; J Freeman, *Lights and Shadows of Melbourne Life*, Sampson Low, Marston, Searle and Rivington, London, 1888; J Stanley James, *The Vagabond Papers*, Hyland House, Melbourne, 1983. For similar observations of English cities and street life see, F Engels, *The Condition of the Working Class in England*, Panther, London, 1969; H Mayhew, *London Labour and the London Poor*, Cass, London, 1967.
[37] L Finch, *The Classing Gaze*, Allen & Unwin, St Leonards, 1993, pp5-13.
[38] SAP, *Debates*, 17th Parliament, 3rd Session, 1904, p255 (Beaumont Moulden, MLC).
[39] SAP, *Debates*, 1904, p255 (Joseph Vardon, Commissioner for Public Works).
[40] SAP, *Debates*, 1904, p255 (Beaumont Moulden MLC).

The Commissioner of Public Works noted 'the crowds which assembled in Grenfell street were' not only 'a serious nuisance to business people', but also they were 'often an obstruction'. The crowds did not halt passage along the street; rather, they disrupted it as tramcars, pedestrians, wagon drivers, and others were required to 'thread their way' through the throng.

James Howe MLC agreed that the use of public streets by betting crowds was a 'serious evil', but he argued that to make standing in the street illegal ignored those people who:

> might stand in the street for perfectly legitimate business. They might be waiting for a tramcar or engaging in a quiet conversation. He entirely objected to them being subjected to police supervision. It was interference with the liberty of the subject.[41]

The street was not only an appropriate place for travel or gaining access to business but, according to Howe, it was also suitable for 'quiet' conversation and specific types of waiting.

Howe was not opposed to betting, but claimed that the appropriate place for it was the race course not the street. Others simply sought to remove the practice from the principal streets. As Louis von Doussa commented to parliament, he:

> was not sure whether the crowds would not be driven to other places, but some good would result if people of that character were to a large extent hidden from publicity.[42]

Betting might be removed to those streets where other illegal or morally dubious activities could be found. James and Freeman had discovered that in the narrow, dimly lit lanes of Melbourne and Sydney people occupied themselves with inappropriate behaviours such as gossip, sleep, alcohol consumption, and transacting illegal business from prostitution to selling stolen goods. It appears that betting, framed as a widespread but morally dubious practice, would be best located in streets with like activities, thereby leaving the principal streets to those undoubtedly moral activities.

The grid layout of Adelaide's streets not only provided for convenient movement by the new citizenry but also, as buildings were erected and uniformly aligned,[43] the

---

[41] SAP, Debates, 1904, p255 (James H Howe MLC).
[42] SAP, *Debates*, 1904, p256 (Louis Von Doussa MLC).

long wide streets enabled the city's inhabitants to maintain a watch over the space of the street and the activities which took place upon it.[44] This surveillance assisted in establishing and maintaining the moral order of the middle-class British colonisers. However, the practices appropriate to the public spaces of the streets and the city's squares were subject to on-going contestation. The quiet conversation described by Howe or the gathering of people in discussion were challenged through the early decades of the 1900s:

> For one thing the circular bench around the big Morton Bay tree close to the Captain Sturt statue might well be shifted and its occupants dispersed. This is really no place for a deputation's super-parliament or for idlers lying about the lawns, especially in the summer months, some of them in stockinged feet or attired in shabby raiment.[45]

The tree and seating in question were subsequently removed from Victoria Square. Building owners in Adelaide, like their counterparts in Melbourne, installed spikes on window ledges to prevent people using them as places to rest and socialise. The exclusivity of the street as a site of circulation has been the source of continuous resistance, but, as Brown-May points out, at the turn of the century the street corner became 'negatively associated with obstruction, deviancy, and the congregation of larrikins, disreputable crowds, or lower-class vendors'.[46] Circulation became one of the few appropriate uses of the street.

The street was scrutinised by individuals and agencies for all those sites, activities, and objects that might erode the mental hygiene and physical propensities of urban dwellers. The objects which threatened the urban population went beyond pot-holes, cellar openings, and furious drivers to include people who lingered, loitered, remained stationery, or otherwise wasted time. The street user was targeted through the language of morality as interventions into the spaces of, and conduct upon the street, were couched in terms of 'good' and 'evil'. The list of activities identified as 'evil' is often linked to middle-class morality and the interests of capitalism. The nineteenth-century problematisation of idleness is popularly associated with the 'protestant work ethic'; an ideology which promotes hard work as benefiting the worker's soul and which ultimately serves the interests of capitalism.

---

[43] South Australia, 'Ordinance No 19, 1844', *Acts and Ordinances of the Governor and Council of South Australia*, 1844, Section LIX. This ordinance prohibited any building from encroaching or projecting onto the footway of the street and any such existing building could not be rebuilt in like manner.

[44] J Brine, 'Diagrams of Utilitarianism: the Panopticon and the City of Adelaide', in R Freestone (ed), *The Australian Planner: Proceedings of the Planning History Conference held in the School of Town Planning 13 March 1993*, University of NSW, Sydney, 1993, pp11-16.

[45] *Mail*, 21 May 1921, p1.

[46] Brown-May, p10.

The work of Anson Rabinbach complicates this explanation as he examines the nineteenth century study of 'labour power' and the relation between the body as/and the machine.[47] Through the 1800s scientists began to imagine the world in terms of frenetic and chaotic energy. This energy, including the forces contained within the body, could be harnessed into productive pursuits. Labour power, the productive forces of human beings, might serve the interests of capitalist or socialist relations of production but economic theorists, including Marx, were agreed that this productive capacity should not be wasted. Idleness, loitering, chatting, sleeping during daylight hours were identified as activities which wasted precious productive energies and such blatant wastage was not to be tolerated. By the turn of the century, wasting human resources, like other forms of waste, were being eradicated from public spaces such as the street.

Myriad shifts and changes in the arrangement of the nineteenth-century street were rationalised in terms of health, public safety, and morality. The deployment of these discourses assisted in producing the street as a site of circulation, thereby bringing the urban journey into effect. The journey became an object of study beyond the operation of individual tram, omnibus, and cab services. It was possible to *see* the journey: where people moved on the space of the road, how they travelled, and at what times of the day they made their journeys.

The removal of non-travel activities enabled attention to be focused more closely on the way in which journeys were conducted. Spaces, objects, and conduct were linked together in documents created and received (e.g. correspondence) by Adelaide City Council throughout the nineteenth century. Carriages plying for hire were required to keep to the left and allow other carriages to pass, while furious driving along the streets, over foot crossings, and around corners was a constant source of complaint. Speed limits were to be observed by all travellers at certain times and in particular places. However, these were the only regulations that served to guide the conduct of the traveller.[48] The gradual exclusion of non-travel activities from the street, and the alteration of the streetscape in relation to discourses on health, safety, and morality, facilitated changes in the conduct of the journey. Some opportunities were surely lost

---

[47] A Rabinbach, *The Human Motor: Energy, Fatigue, and the Origins of Modernity*, University of California Press, Berkley, 1992.
[48] ACC, *By-Laws*, 1874, No 47, Clause 20.

but others were gained. It became possible to travel along the street without having to deviate around cellar openings, signs, pot holes, manure, and so forth: the traveller could expect clear passage. The journey could be performed in new ways, and over time the street was divided and separated to establish a new order in human circulation.

The ordering of street spaces which emerged to facilitate circulation cannot be considered a necessary outcome of discourses on health and morality. Certainly the separation of the footway from the street was discussed in terms of the threat to health, hygiene, and safety posed by horses and bullocks, but this separation was not yet exclusive. Integral to the finer division and regulation of street space which brought order to the movement was a discourse on economy and efficiency.

The Street Economy and the Economical Street

At the same time that interventions into street spaces were rationalised in terms of health and morality, so too their economic role was observed, reported upon, and contested. However, it was not until later in the nineteenth century that discourses on the economy became prominent in the internal organisation of Adelaide's streets. Struggles over Adelaide's five public squares illustrate the increasing authority of economic discourses in the internal organisation of the urban street. In early diagrams of the city, the squares were sometimes indicated simply as blank spaces. There were no markings to distinguish or differentiate the internal spaces of the squares nor the activities of those spaces. This representation of the city's squares sharpens the multiple and diverse ways in which these spaces might have been arranged. As stated above, funds were set aside in the early 1850s for planting out the squares, together with one of the terraces which bordered the city, North Terrace. The planting began the process of demarcating the internal arrangement of the squares. Gardens were established in the centre of the squares and generally fenced off to keep out horses and other grazing animals.[49] The fence served to mark out a strip of land between the building allotments and the gardens, thereby facilitating the use of this strip for movement.[50]

Victoria Square differed from the other squares in that it was initially divided by an

---

[49] A Riddle, 'Adelaide's Parklands', in B Dickey (ed), *William Shakespeare's Adelaide 1860-1930*, Association of Professional Historians, Adelaide, 1992, pp106-25.
[50] Mortlock Library of South Australia, Pictorial Collection, B22415, B691, B14968, B13403.

east-west road running through its centre.[51] Proposals were made in the 1850s, 1870s, and 1880s to cut a north-south road through Victoria Square for the 'convenience' of the public. It was argued by some that if a road were cut through Victoria Square the other squares would suffer the same fate:

> if they altered Victoria-Square in this way, why not do the same for the others? People had an equal right to ask for business convenience that they should be allowed to go through Hindmarsh, Light, Hurtle and Whitmore squares...But would that be beautifying the city? It was the breaking of the long streets with squares and laying them out properly that really beautified places.[52]

The precise location of Victoria Square was defended in terms of health:

> if, as had been said, planting trees had a beneficial effect upon the health of the inhabitants it was much better that the plantation should be in the centre of the city than at one corner.[53]

On the first two attempts to alter Victoria Square, discourses on health, safety, and aesthetics were deployed and the square remained intact. But in the 1880s the convenience of cutting through the squares was explained in specifically economic terms:

> There is no square in London that I can call to mind which is so situated as to block business...I know, however, of no square on the Middlesex or Surrey side which blockades business as Victoria-Square does.[54]

Within this text, obstruction was not related to its danger to the health of the city and its population; on the contrary practices associated with health obstructed economic circulation. This claim does not deny the notion of the healthy city; rather, it privileges economic circulation and overlays physical health with a concern for economic 'health'. Practices associated with health, morality, and the economy continued to support each other as they each re-inscribed the principle of circulation; however, in their reordering, the economy emerged as dominant.

---

[51] A Klenke, 'For Show or Comfort? A History of Victoria Square', *Journal of Historical Society of South Australia*, 28, 2000, pp97-104.

[52] SAP, *Debates*, 7th Parliament, 3rd Session, 1874, column 2052 (Alexander Hay MLC).

[53] SAP, *Debates*, 1874, column 1872 (George Stevenson MHA).

[54] SAP, *Select Committee of the Legislative Council: Report on the Victoria-Square Thoroughfare Bill*, Parl Paper 159, 1883, p13 (WD Furze).

The example of Victoria Square is especially significant for the different constructions it offers of the economic role of the street. Property owners around Victoria Square objected to cutting a road through the square on the basis of losing business, thereby leading to a decline in property values:

> I might as well ask you why people have offices in the principal streets...It is simply because there is a constant stream of traffic, and it is where people congregate.[55]

The street offered access to businesses both visually and physically and as much to passing traffic as to people waiting, standing, or gathered in discussion. The street was a site of economic activity in view of the many businesses conducted upon it.

In contrast, those arguing for the road to be cut through Victoria Square claimed it would stimulate business in the southern portion of the city and be of great convenience to those who used King William Street, particularly businesses. According to Thomas Worsnop (Town Clerk) the main reason for the proposed road was:

> ...to give greater facilities to traffic, and to connect the two portions of King William-Street, north and south, so that property holders and shopkeepers in the south part of the street may reap similar benefits to those in the northern part of the street.[56]

Travelling through rather than around the square may have reduced travelling times by a mere minute or two but it also reduced the amount of human energy expended in the process of travel. This surplus energy could be channelled into other tasks, an issue taken up again in Chapter Five.

Worsnop's statement also indicates a slippage from the street as a site of economic activity to the street *connecting* points of economic activity. The contest over the appropriate economic role of the street spanned several decades across the turn of the century. Through this time practices were introduced which tended to hinder the economic activity upon the street and enhance the role of the street in connecting activities. When bacteria was established as a cause of disease, some food vendors were prohibited from operating in the streets.[57] Retailers with shop fronts complained of the benefits which accrued to the street vendors as they could sell their wares

---

[55] SAP, *Victoria-Square Thoroughfare Bill*, p15 (CA Reinecke).
[56] SAP, *Victoria-Square Thoroughfare Bill*, p10 (T Worsnop).

without bearing the same overheads associated with keeping a store.[58] In 1913, Adelaide City Council passed a by-law which prohibited street vendors from remaining stationery in the street unless they were making a sale, otherwise they were required to circulate through the streets.[59] Council later changed this policy in favour of hawkers stands, similar to the standing areas designated for carriages plying for hire.[60] Stands were eventually abandoned in favour of permanent vending booths built on the footpaths. This measure not only shifted hawkers off the roadway but probably assisted in the decline of street vending.

A struggle over the garaging of motor vehicles in the streets also occurred at this time. In the nineteenth century, stands had been allocated in certain streets for horse drawn vehicles to wait. Through the early 1900s and the advent of the motor vehicle, motorists began 'garaging' their vehicles along the streets. Business owners complained that this activity served to blockade visual and physical access to their premises.[61] However, by 1917 motorists were allowed to stand their vehicles along the street kerb for not more than 20 minutes and by 1921 the Adelaide City Council had provided 14 stands at which motorists could park their vehicles indefinitely.[62] Parked vehicles may have obstructed access to businesses but their location at the edge of the streets facilitated passage through the centre of the street, that is, it ensured movement through the town from one point to another. The margins of the street were taken over by parking spaces as visual and physical access to buildings and hawkers diminished in the overall importance of the economy of the street. The street as a site of economic circulation was no longer concerned with economic exchange within the street but exchange between specialist locations. The journey *through* the street, rather than access *from* the street, began to emerge as the dominant economic concern.

Micro changes in the street, its spatial organisation and the appropriate conduct of its users, sharpened the positioning of individual streets as part of a broader urban framework. The extent and arrangement of the streets delimited the urban environment (the metropolis) and the urban economy. The shift in the economic role of the street was made complete with the functionalist view of the city as modernist planners inscribed the urban street as primarily a site for travel. The work of British

---

[57] Morton, p210.
[58] SAP, *Debates*, 20th Parliament, 1st Session, 1910, p566 (Edward Lucas, MLC).
[59] ACC, *Annual Report 1913*, p27.
[60] ACC, *Annual Report 1915*, p28.
[61] ACCA: Parking and Traffic Control File, Motor Cars Standing in Streets, 1923.
[62] ACC, *Annual Report 1919*, p26; ACC, *Annual Report 1921*, p15

urbanist Raymond Unwin exemplifies the ordering of road and street functions in urban discourses at the beginning of the twentieth century:

> Roads are primarily highways for traffic. They serve also a secondary purpose in affording sites for buildings. They should be considered in relation to both these functions, and in the order of their relative importance.[63]

Importantly, this ordering serves as a preface to a specific spatial ordering of the urban environment. Unwin goes on to argue:

> For the roads in a town to satisfy properly their primary function of highways, they must be so designed as to provide generally for easy access from any point in the town to any other. But they should provide, in addition, special facilities for the ebb and flow of particular tides of traffic, such as that from the outskirts to the centre and back again which daily takes place in most large cities, or that across the town from a residential district to a quarter occupied by works, factories, or other places of employment, or to important railway stations, harbours, and other centres of industry.[64]

The use of the road or street primarily as a place of movement was linked to the specialisation of sites for particular activities such as housing, industry, and commerce. The urban specialisation inscribed by Unwin resonates with the economic specialisation recommended by economists from Adam Smith in the eighteenth century to Unwin's contemporary, Adna Weber.[65] Movement between sites (points in the urban landscape) was identified by these commentators as fundamental to the development and differentiation of urban areas and hence the urban economy: urban movement and spatial specialisation were mutually constitutive.[66]

Travel within the city was discursively constituted as a process of shifting between specific locations or ports, *trans-port*. Travel was reduced to the set of practices involved in shifting bodies or objects from one point to another. The role of the urban street was to facilitate economic activity by facilitating circulation between places of production, consumption, and exchange. Elaborating on Gordon, urban

---

[63] R Unwin, *Town Planning in Practice*, T Fisher Unwin, London, 1909, p235.
[64] Unwin, p235.
[65] A Weber, *The Growth of Cities in the Nineteenth Century: A Study in Statistics*, Macmillan, New York, 1899, pp183, 470-74. Richard Sennett provides an elaboration of the relation between changes in urbanisation and economic processes. Sennett argues that when urbanists of the eighteenth century drew plans for cities meant to operate on circulatory principles, Adam Smith made legible and credible the economic activities which fitted those cities (p273).
[66] Paul Rabinow argues Hausmann's boulevards signalled the changing economic organisation of the city and the street in nineteenth-century Paris. P Rabinow, *French Modern: norms and forms of the social environment*, MIT

circulation served to expand the wealth of the urban population by both securing the operation of the market *and* by ensuring the market operated efficiently. The journey, whether to the shop, the bank, or the factory, could be made efficiently and this would in turn secure the economical operation of the city. According to an article in the SA Motor magazine, 'The ideal [road] system appears to be one by which traffic would be conducted by the shortest and most inexpensive route to its destination'.[67] Locating streets within an urban economic network facilitated new interventions at the micro level of the street.

The street was increasingly objectified as a space of economical movement. It was scrutinised for those sites, activities, and objects which impeded or facilitated the exchange of people and goods between locations. Street space in early twentieth-century Adelaide was intervened upon to secure the conditions for the economical journey and the street user was targeted as an economical traveller, a subject whose journeys were between two points and were conducted as economically as possible. It is this economical traveller that is the subject of discourses on urban transport and the object of strategies which seek to guide the conduct of the urban journey.

Ordering the Economical Street

It was through the deployment of *time* that movement upon the street (human, animal, and mechanical) was minutely ordered into a series of efficient practices. Throughout the nineteenth century time had become increasingly significant to everyday life, specifically in the synchronisation and regulation of that life.[68] Foucault demonstrates in *Discipline and Punish* that from the eighteenth century 'time' became central to organising individual activities and combining and aligning the activities within populations and across territories.[69] Economists such as David Ricardo and Karl Marx theorised the role of labour time in the calculation of value and, in particular, surplus value.[70] Time had economic consequences: the more rapid the process of production, consumption, and exchange, the greater the rate of capital accumulation. In terms of travel, *time* underpinned the economical journey as it was each individual's *time* that was spent and saved in the journey between two locations.

Press,Cambridge, Mass., 1989, pp76-78.
[67] *South Australian Motor,* August 1913, 1(3), p68.
[68] For discussion of the gradual regulation of life in nineteenth-century Australia through the use of time see G Davison, *The Unforgiving Minute: How Australians Learned to Tell the Time*, Oxford University Press, Melbourne, 1993.
[69] Foucault, *Discipline and Punish*, pp135-69.
[70] For discussion of Ricardo's labour theory of value see ECK Gonner, 1895, *Ricardo's Political Economy*, George Bell & Sons, London, 1895. On surplus value see K Marx, *Capital, Vol. 1*, Progress Publishers, USSR, 1954.

Measuring the rate of motion in relation to time, that is, determining speed, was therefore central to calculating the economy of the journey. It was around the speed of travel that the space of the street began to be closely differentiated and regulated during the twentieth century. Speed was central to producing the street as a site of economical travel – a space of transport.

The growing volume and range of conveyances which appeared around the turn of the century was indicative of the growing importance of speed.[71] These vehicles, together with the greater physical area they required, shifted attention from the problem of obstruction to that of congestion. Congestion had attracted attention as early as the 1870s when rail and tram companies sought permission to travel along the city's streets. The proprietors assured members of parliament that vehicles would travel at four miles per hour in the congested city streets to ensure the safety of people and their property.[72] As congestion was problematised, the body, once again, served as a metaphor for the city and its operation. The city (like the body) was threatened by the suffusion (oversupply) of traffic (blood) which could lead to dysfunction. Obstruction could halt or impede circulation, whereas the congestion of traffic threatened to make the flow chaotic. Through the interplay of these two circulatory problems the regulations and practices which ensured movement were entwined with regulations and practices aimed at bringing order into movement. The emerging category of speed was both central to and dependent upon the ordering of urban travel; speed maintained order, while order maintained speed. Travellers were gradually differentiated, ordered, and allocated road space according to the speed of their travel.

Planning and the Efficient Street
The newly emerging discipline of Town and Country Planning took the street as one of its objects of study and sites of intervention. Charles Reade drew upon urbanists such as Barnett, Taylor, and Unwin in designing the streets of Adelaide's garden suburb 'Colonel Light Gardens'. Reade divided urban roads into a hierarchy according to the speed and potential orderliness of travel. Roads were differentiated by width, alignment, role, and location.[73] Major or *arterial* roads were the widest

---

[71] S Kern, *The culture of time and space 1880-1920*, Harvard University Press, Cambridge, Mass, 1983.
[72] SAP, *Adelaide, Glenelg and Suburban Railway Bill*, Parl Paper 106, 1871, pp2, 3 (evidence - Benjamin Boothby, Henry Mais); SAP, *Select Committee Appointed to Report on the Adelaide and Suburban Tramways Bill, Report and Minutes of Evidence*, Parl Paper 49, 1876, pp 3, 4 (Edmund Wright, William Buik, William Milne).
[73] SAP, *Government Town Planner: Report on Planning and Development of Towns and Cities in South Australia*, Parl Paper 63, 1919, Part IV, Plates 38, 47.

and these would carry fast and through traffic to disparate localities across the urban landscape. The narrower roads within a locality would carry slower moving, deviating traffic as they provided access to individual building sites.[74]

Streets within an area were differentiated according to the activities located along them and their width varied accordingly. Precincts with shops and civic buildings would be wider than residential streets as the former were observed and anticipated to 'generate' greater activity than the latter. Some decades later formulae would be devised for town planners to calculate and forecast the amount of traffic likely to be generated by different types of activities.[75] Through the early twentieth century, the width and alignment of the road no longer simply signified health, morality, or class but were used in constituting the road hierarchy. These factors have been so successful in guiding the conduct of the economical traveller that they have been 'rediscovered' within contemporary traffic calming literature as the visual cues which inform the driver of the appropriate travel speed on any given street.[76]

Internal street spaces were to be arranged in relation to the speed of travel and the travellers' potential for slowing or disrupting the movement of other traffic by, for example, turning/changing direction, or moving across the general direction of travel. Unwin explained this arrangement in his text *Town Planning Practice*:

> For our most important and busiest highways we may well take a hint from the main railway lines, where central tracks are provided for the through expresses, and outside tracks for the slow stopping trains. This system has been largely adopted in continental cities, where on the main roads and boulevards multiple tracks have been provided. Through traffic in such a system is not impeded by vehicles stopping, turning, entering, or leaving the track, only by those which have to pass right across it; and the number of points at which these crossings can take place may be restricted. In many of these roads special tracks are provided for tramways, for riding, and for cycling, in addition to those for the ordinary fast and slow traffic of vehicles.[77]

More complicated arrangements were required where roads intersected:

---

[74] SAP, *Planning and Development of Towns and Cities in South Australia*, Plates 41, 47.
[75] R Mitchell & C Rapkin, *Urban Traffic: A Function of Land Use*, Greenwood Press, Connecticut, 1954.
[76] S Sarkar, N Nederveen & A Pols, 'Renewed Commitment to Traffic Calming and Pedestrian Safety',
Transportation Research Record, 1578, 1998, pp15-17; C Hass-Klau, I Nold, G Bodker & G Crampton, *Civilised Streets: A Guide to Traffic Calming*, Environment and Transport Planning, Brighton, 1992, Chapter 2; C Jervis, *Traffic Calming in Unley*, Honours Thesis, University of South Australia, Adelaide, 2000, pp51-65.
[77] Unwin, p241.

Monsieur Eugene Henard, in "Etudes sur les Transformations de Paris," suggests that for really busy centres, where many roads converge, the most convenient arrangement is to have a round space with the traffic circulating in one direction. Vehicles coming from any one road can fall in with the line of traffic, circulate with it, and fall out again when they reach whichever of the other roads they wish to pass down. With a view to assisting pedestrians to cross such a circulating space, M. Henard suggests that subways should be provided from all the footpaths leading to a space in the centre where the passengers in like manner could sort themselves and depart along the subway to whichever of the streets they might wish to reach. This would not, of course, prevent their crossing above ground when the condition of road traffic would allow. [78]

Speed and order of travel are interwoven throughout Unwin's discussion indicating their mutually reinforcing relation.

In an article on 'The Scientific Control of Traffic', the Automobile Association of South Australia argued in favour of Monsieur Henard's 'rotary system' (attributing it though to an American) claiming:

It is obvious that the present 'block' system is far from satisfactory. Holding up traffic in one direction in order to permit of the movement of that going in the cross direction involves a waste of time which ill assorts with the modern desire for speed, while it also demands the employment of extra police for its due control. [79]

The speedy journey could be ensured through the differential allocation of road space according to the direction of movement; order would ensure speedy travel. Further, the article suggested:

A very important point in traffic regulation is that slow-moving traffic should be compelled to keep as near the kerb as possible, while faster traffic should keep to the left wherever space is available, and so leave the road open for still faster moving vehicles. [80]

[78] Unwin, p241.
[79] *South Australian Motor*, May 1914, 2(5), p133.
[80] *South Australian Motor*, May 1914, 2(5), p134; State Records Office: Police Department of South Australia, Correspondence, GRG Series 2, 1932/738, 1935/363, 1937/479, 788, 921, 970.

Order would ensure continuous movement and hence a speedier journey, while the journey itself was ordered according to speed.

The long standing division and allocation of street spaces between humans and beasts was elaborated and altered through the late nineteenth and early twentieth century. Spaces, objects (bodies, beasts, articles, vehicles), and conduct upon the street were linked together in subtly different ways as they were objectified and ordered in relation to speed. This ordering occurred through planning and engineering discourses as well as texts produced by State agencies and local councils. The lists reprinted in the Adelaide City Council's by-laws that linked objects to spaces, as discussed above, were gradually arranged into a new order. By 1906, those objects which either did not move or were not involved in the process of movement (articles such as casks, barrels, boxes) were separated out and excluded from the Council's new by-law definitions.[81] Only those objects involved in moving human beings or goods were translated from observation, separated into categories, and inscribed into the by-law definitions.

The category of 'Horses' took into account horses, geldings, mares, rigs, foals, colts, fillies, donkeys, asses, and mules, while 'Bicycles' included bicycles, tricycles, velocipedes, and similar human propelled machines.[82] Carriages comprised 'any coach, carriage, drag, carrette, omnibus, minibus, chariot, fly, car, cabriolet, hackney carriage, gig, brougham, hansom, landau, sulky, dogcart, waggonette, or other carriage'.[83] Carts included 'any cart, wagon, van, dray, truck, handcart, wheelbarrow, handbarrow, or other cart'.[84] Both carriages and carts were brought under the category of vehicles but they were differentiated according to the 'natural hierarchy' whereby carriages were for humans and carts for goods. Trams and trains were excluded from the Council's lists as they ran on fixed rails, rights-of-way, which were not considered to be part of the street. As new phenomena were observed upon the streets they were brought into the council's classificatory system. This novel way of objectifying and classifying urban phenomena by movement held new possibilities for the production of knowledge about and interventions into the conduct of the population.

The spaces of the street were discursively linked to the bodies, beasts, bicycles, and vehicles observed upon the street and both were increasingly arranged according to

---

[81] ACC, *By-Laws*, 1906, pp2-3.
[82] ACC, *By-Laws*, 1906, p2.
[83] ACC, *By-Laws*, 1906, p2.

the speed and orderliness of travel. The redefining and renaming of street spaces occurred simultaneously with the regulation of movement within each of those spaces: space and conduct became mutually reinforcing. The street was divided along its length from the margins to the centre with the various 'tracks' or 'lanes' being designated according to how quickly one travelled.[85] The footpaths marked out by architects in the sixteenth century as privileged spaces for human beings had been transformed as they were transplanted from one context to another. The footpaths of nineteenth-century Adelaide, like those in eighteenth-century London, were rationalised as sites free from contaminants and safe from beasts. By the twentieth century the footpath was marginalised within the order of travel.

In the early 1910s, the Adelaide City Council invoked the Move-On clause to shift people waiting for a tram from the street onto the footpath.[86] This clause was invoked to ensure motor vehicles could move in a direct and continous line along the street rather than threading their way through the crowds.[87] The footpath was no longer specifically a site of safety but it was being transformed, through the deployment of economic discourses on efficiency, into a site which *contained* foot passengers (amongst others) and prevented them interrupting vehicle movements. The relation between the footpath and the centre of the street was altered so that the carriageway became the privileged site of circulation and it regulated the footpath rather than vice-versa. The footpath accommodated the slowest and least efficient of all travellers, foot passengers (a term replaced by the word pedestrian). The function of the footpath was blurred by its multiple roles as a site of travel, access to buildings, the location of hawkers (and later vending stalls and petrol pumps), and so forth.

Spaces within the street and their relation to each other were redefined as they were written into or out of Council regulations. Foot crossings, that part of 'any street as is in line with any footway or footpath, and as has been paved, tardressed, or asphalted as a crossing for the convenience of foot passengers',[88] disappeared into the paving of the carriageway. The 'edging' of the footway merged into the kerbing and both these phenomena marked the boundary between carriageway and footway. The kerb was designated as a space for vehicles to stand, park, or wait. The near side of the road became the left lane providing a place for slow, stopping, and deviating

---

[84] ACC, *By-Laws*, 1906, p2.
[85] ACC, *Annual Report 1916*, p41.
[86] ACC, *Annual Report 1911*, p57; ACC, *Annual Report 1912*, p41; ACC, *Annual Report 1913*, p27.
[87] ACC, *Annual Report 1911*, p57.
[88] ACC, *By-Laws*, 1906, p3.

vehicles. Street junctions and corners became intersections whereby vehicular traffic met and negotiated passage. The centre of the road was to be privileged for fast, *through* traffic. Through the first half of the twentieth century, the internal area of the street was discursively differentiated and physically intervened upon according to the object (body, beast, bicycle, or vehicle) of movement and the rate at which such movement was, or might be, conducted.

The Adelaide City Council's Street Traffic Committee, established in 1924, was amongst the increasing number of organisations that gathered information, wrote reports and made recommendations on the conduct of traffic within the city's streets. The characteristics and practices of those people and things involved in movement were scrutinised, catalogued, and gradually ordered into a hierarchical relation from the slowest and least orderly to the fastest and most orderly. This order was translated back onto the streets through minute and multifarious interventions such as painted lines, traffic indicators, traffic lights, road studs, traffic constables, footway signs, and so forth. The pedestrian and the motor vehicle were generally set in opposition as the two extremes of the order of urban movement. The motor vehicle as the fastest and therefore most economical mode of travel necessarily took precedence in the allocation of street space and the conduct of the journey. The pedestrian, as the slowest and least orderly traveller, was required to *give way* to faster, more orderly travellers.

Travellers were not only categorised and ordered according to speed of travel but also speed itself was a mechanism of order:

> it is not suggested that all vehicles should be allowed to travel as fast as possible, it is undoubtedly true that a very large proportion of accidents are due to the carelessness of pedestrians, who would not run the risks they do if they knew the traffic was moving at a rapid rate.[89]

In the twentieth century the contest over street space was being transformed from a struggle between uses to a 'conflict' between travellers. This conflict shall be returned to in Chapter Five.

---

[89] *South Australian Motor*, October 1913, 1(5), p100.

Constructing Efficient Streets

Engineers began problematising road surfacing and construction with reference to the characteristics of the new motorised vehicles and in particular their speed.[90] The quality of the footpath that had occupied architects in earlier centuries was set aside by the engineers as they studied the quality of the 'carriageway'. The speed of modern vehicles created new issues for the road engineer:

> We shall have no difficulty in getting the motor vehicles, but we have a long way to go before we shall learn how to make the roads....Roadmaking in Australia, up to the present has been too long of traditional and rule of thumb methods, but now that fast driver motor, heavy traffic, is coming upon the roads, it is necessary to give the scientific problems connected therewith closer attention.[91]

Engineering practices once associated with health were spoken of in relation to ensuring fast, continuous, and thereby economical travel.

Drainage of roads and filling in pot-holes were no longer measures to ensure against disease and secure safety. These measures also provided the smooth hard surface necessary for fast travel:

> Drainage of a road has a controlling influence upon the upkeep of the surface and the economical general maintenance...If pools of water are permitted to lie about a roadway, they will soon soften the foundations and thereby cause the surface to break up.[92]

Practices such as ensuring the seam of road patches ran at an angle to oncoming traffic, and changing the road drainage system from spoon drains to culverts or pipes, were introduced to enable continuous speed of travel.[93] The physical characteristics of the road were studied through reference to the economic conduct of travel and interventions within the street targeted the economical traveller in the conduct of his/her journey.

The traffic census also began to take account of speed and volume of traffic. Traditionally the traffic census involved seasonal counts of the number and type of vehicles travelling past a particular point in the road within a twelve or fourteen hour period.[94] Type of vehicle was used as an indicator of its weight, as each category of

---

[90] H Cardew, 'Roads and Road Making in England', *The Australasian Engineer*, 19(69), 1922, pp14-16.

[91] Cardew, p14.

[92] *South Australian Motor*, October 1914, 2(10), p303.

[93] *South Australian Motor*, August 1913, 1(3), p68; *South Australian Motor*, November 1913, 1(6), p163.

[94] For example: SAP, '*Local Government Department, Second Annual Report, 1918-19*', Parl Paper 20, 1919,

vehicle was designated a tonnage co-efficient; for example, single-horse light vehicles, three-horse heavy vehicles, and motor vehicles had co-efficients of 0.4, 2.5, and 2.5 tons respectively.[95] Data on the type and incidence of vehicles was used in calculating total tonnage and consequently the likely wear and tear upon the road. This information served to differentiate main, or heavily trafficked, roads from district roads. Roads with heavy traffic, in terms of the total tonnage over those roads, were surfaced with more expensive materials and received extra funding subsidies from the Colonial, State (after Federation), and Commonwealth governments to cover the higher costs.[96] Through the 1920s road construction was not only concerned with weight and number of vehicles, but also it became increasingly concerned with speed of vehicles. Census data taken through this time continued to gather information on number and type of vehicles, but this latter classification also indicated potential speed of travel as well as the total tonnage borne by the road.

Local governments debated the various attributes of modern vehicles and their role in breaking up the surface of roads. Speed was considered a significant factor, especially when combined with: pneumatic tyres proximity of the vehicle undercarriage to the road, and the weight of the vehicle.[97] In his report 'Road Systems in America and England', the Engineer of Roads and Bridges provided Parliament with details of tests being conducted on road surfaces which determined their capability in withstanding the weight and speed of the newly emerging forms of travel.[98] His conclusion was that bituminous concrete was the most suitable road surface for modern traffic and road reconstruction programs were implemented in the light of these and similar findings. It was apparent by the end of the 1920s that these surfaces were not suitable for non-motorised forms of transport such as wagons and carts, as these latter were said to cut up the new roads with their iron tyres and heavy loads.[99]

> We must scrap all our pre-conceived ideas of road making for horses
> and slow moving vehicles with iron tyres, and construct our roads for

p14; SAP, *Local Government Department, Eighth Annual Report, 1924-25*, Parl Paper 37, 1925, p.8; SAP, *Highways and Local Government Department, Tenth Annual Report, 1926-27*, Parl Paper 37, 1927, p22.

[95] SAP, *Local Government Department, Second Annual Report, 1918-19*, p14.

[96] SAP, *Local Government Department, First Annual Report, 1917-18*, Parl Paper 20, p7; SAP, *Highways and Local Government Department, Tenth Annual Report, 1926-27*, pp3-4, 9-11.

[97] ACC, *Annual Report 1912*, pp47-49; ACC, *Annual Report 1914*, pp38-41. See also papers from the Third International Congress on Road Making, reported in *South Australian Motor*, July 1913, 1(2), p35. These papers were forwarded by the Automobile Association to relevant state and local government departments.

[98] SAP, *Engineer of Roads and Bridges: Report on Road Systems in America and England*, Parl Paper 65, 1922.

[99] SAP, *Royal Commission on Traffic Control: First Progress Report, Motor Bus Traffic*, Parl Paper 56, 1926, p65 (evidence - D Fleming)

fast driven heavy traffic on solid rubber shod wheels.[100]

Modern roads were meant for modern vehicles and this eventually precluded their use by wagons, carts, and similar vehicles.

From the Colonial Frontier to Modern Circulation

The ordering of travel coincided with a shift in the mix of the South Australian economy. Through the nineteenth century South Australia's economy was firmly based in agriculture. Those secondary industries which did exist supplied the local population with textiles, clothing, footwear, and agricultural implements and machinery.[101] By the mid 1920s the handful of industrialists in the state began to work with various politicians and bureaucrats to industrialise South Australia's economy. Although this process was interrupted by the depression, various strategies had been put in place to attract capital to the state. This shift from an agrarian to an industrial economy, together with the depression which interrupted it, resonated through discussions of transport related travel.

Prior to the depression, rail networks had been represented as of central importance to the expansion of the colonial economy. The railroads which emerged late in the period of European colonisation were important in expanding and deepening the reach of the colonisers. Indeed, the non-urban road network was also represented in these terms. The principal rationale for the road system was to act as a means of expanding the use of the rail system:

> The provision of good roads with consequent cheapening of cost of transport has created a great stimulus to production, and instead of being in competition with the railways, has resulted in increased business in long distance haulage over the railways.[102]

Within the macro-political sphere the road network was constructed as expanding upon rather than competing with the existing rail network. However, throughout the early decades of the twentieth century there existed a gradually increasing number of people calling for the replacement of the railways by a road system. The 1929 depression provided the space for this argument to circulate more widely, as the decline in the agrarian economy was linked to a decline in the rail and tram

---

[100] Cardew, p16.

[101] D Rich, 'Tom's Vision? Playford and Industrialisation', in B O'Neil, J Raftery & K Round (eds), *Playford's South Australia*, Association of Professional Historians Inc, Adelaide, 1996, pp91-116.

[102] SAP, *Report on Road Systems in America and England*, p5.

networks. The frontier discourse which represented transport, but especially rail transport, as opening up the country to economic development was associated with political opportunism and consequent indebtedness.[103] Patronage on the tramways fell as unemployment rose, tram and rail workers were being retrenched, and their wages or hours cut while the government refused to outlay money on track extensions.

The impact of the depression on the tram and rail networks was contrasted with the re-emerging car industry, which was identified as a source of wealth, employment, and optimism.[104] The automobile industry collapsed with the onset of the depression but by mid-1930 contracts were being signed by local manufacturers such as Holden's and T J Richards and Sons with American companies General Motors and Ford. These contracts saw a re-emergence of the industry and it was identified as a source of employment and wealth.[105] Motor vehicle manufacturing was described in optimistic terms as a growing industrial sector; not only did road transport facilitate economic development, it also could be an industrial sector *in itself.* Road transport could transform South Australia's economy from an agricultural to an industrial base. Economic wellbeing could be assured *in situ* from an urban base; it did not require the continuous expansion of agriculture into unknown frontiers. The outward expansion of the transport system no longer forced nor directed the growth of the economy. Transport nourished and served the economy from within, being vital to and mutually determinative of the shape and condition of the economy. But transport also served the economic functioning of the state by operating economically. Road transport no longer existed to expand the frontiers of the rail network; instead, the road network served circulation within the economy.

Employment and economic growth was the basis upon which workers were represented as participating in the new phenomena of motor transport. General Motors advertisements encouraged their wealthy customers to purchase cars as a means of fostering employment and economic growth for Australians. These workers were employed both in car manufacturing and in the industries which supported the car industry. The motor vehicle was no longer simply a source of

---

[103] For example, *Advertiser*, 23 June 1930, p15.

[104] For example: *Advertiser*, 29 May 1930, p11; *Advertiser*, 15 July 1930, p16.

[105] Production Statistics tabled in parliament in 1920s-30s indicate that within its first eight years the motor vehicle industry, which included repair, manufacture, and assembly of motor vehicles, had increased its workforce from a few hundred in 1920 to more than 6,000 in 1928. In the first year of the depression, that figure fell to 700 and did not reach beyond 5000 until 1936. SAOGS, *Statistical Register of the State of South Australia, 1926-27, Part V Production*, Parl Paper 3, 1928, p112; SAOGS, *Statistical Register of the State of South Australia, 1934-35, Part V Production*, Parl Paper 3, 1936, p114.

leisure, recreation, and sport for the wealthy, but also provided employment. The linking of the worker with the upper classes through motor vehicle advertising and articles represents common ground between the classes at a moment of class antagonism. The automobile was no longer simply a recreation vehicle for the wealthy or a machine which threatened the lives of road users, but it had become a means of employment for Australian workers. Workers were constructed as having a stake in the emerging form of transport.[106] Thus the economic conditions of the 1930s can be seen to have provided an economic basis for the privileging of some forms of transport over others.

The metaphors of the different transport networks are indicative of the ways in which these networks were seen to function economically. The arboreal metaphors of colonial town *planting*, which envisaged the spread of Europeans across the globe in terms of the seeding and growth of plants, were also utilised in relation to railway travel. The railway metaphors of *trunk* lines and *branches* represented the railways as spreading from a central point into unknown frontiers and creating an ever finer network of European colonies across the landscape.[107] The principal categories used in classifying roads were 'main' and 'district' but terms such as 'branch' and 'trunk' were also common. From the 1930s onward, the roadway and road transport were unhitched from the arboreal metaphors of the railways. As the urban economy expanded and highway engineers focused their attention on the urban area, terms such as 'trunk roads' and 'branches' were replaced by urban 'arterials'.[108] Road networks and road transport were dissociated from the frontiers of the colonial economy and made integral to circulation within the modern industrial economy.

Conclusion

In effect, the street has been transformed over time from a site for a diverse range of activities to one of transport. Knowledge produced about health and morality brought into effect particular practices which constituted the street as a site of circulation. In doing so, travel became the privileged use of the street but travellers were not necessarily ordered nor privileged. At the turn of the century urban health and morality were overlaid with an economic discourse which inscribed practices of circulation and specialisation onto the urban landscape. The transformation of the street from a site of economic activity to one which facilitated economic activity was

---

[106] For example: *Advertiser*, 19 June 1930, p12; *Advertiser*, 10 July 1930, p11.
[107] Kern, pp230-40.
[108] SAP, *Highways and Local Government Department, Tenth Annual Report*, pp10-13; SAP, *Highways and*

formalised in the texts of the modern town planning movement which emerged at the turn of the century. Not only was the street to facilitate economic activity, but also it facilitated the economic functioning of urban centres and regions as it linked sites of specialist activity. The growing importance of time to the regulation and coordination of urban life translated in the twentieth century to a concern for rapid travel. The speed of movement became an indicator of efficiency and contributed to the economic functioning of cities and regions.

Urban specialisation assisted in shaping the journeys which could be made through the urban environment. As the role of the journey was specified as moving between localities, from point A to B, so urban travel became *transportised*. The rationale for urban movement was to transport oneself from one point to another in order to undertake the activities at those points. This rationale held in question all those travel practices which feel outside, or could not be subsumed within, the category of transport. It is the transport rationalisation of urban travel which predominate in the twentieth-century literature on urban travel. This understanding of travel has the effect of devaluing: the journey itself as something to be minimised given that it simply serves other activities; other meanings of urban travel; and the spaces in which travel takes place.

In identifying the locations between which travel takes place, it became possible to measure the journey and determine the most economical journey; all travel regardless of its purpose could be economic. The economic journey is one which transports people from one point to another using the least amount of time. The economic journey is central to ordering urban travel as the street is produced as a site which enables fast, through movement. The streets could be divided and allocated to travellers according to the speed and consequently the economy with which they travelled. Those who travel, subjects of travel, began to be sorted into a hierarchy from the slowest to the fastest, with road space and priority of way being allocated according to one's place in the hierarchy.

The privileging of automobiles upon the street was not the result of a conspiracy by capital (manufacturing/oil/rubber) or car owners to promote car usage, though their interests are certainly served. The proliferation of motor vehicles is not the result of 'progress' or a 'natural' human desire for speed or to exert the least amount of energy. Rather, the privileging of motor vehicles is the effect of the emergence of a

---

Local Government Department, Twenty Second Annual Report 1938-39, Parl Paper 37, p8-11.

series of mutually reinforcing discourses and the practices and subjectivities they produced. In particular, speed was a necessary condition for motor vehicles to gain priority on South Australia's urban roads. Speed rather than automobiles *per se* was privileged; however, the automobile as the fastest vehicle on the road enabled the journey of the motorist to take priority over other travellers. This ordering of urban travel has been resisted through to the present day, but opposition was perhaps most widely and overtly expressed from the 1910s to the 1930s. The following chapter examines this opposition and the disciplining of bodies to the new order of speed.

SAFETY: MAKING THE SELF-REGULATING TRAVELLER

Speed pervaded all aspects of modern life and the modern city. Within the factory, time and motion studies were integral to the scientific management of production. Speed also permeated sport, recreation, art, and entertainment. Land, air, and water speed records were constantly made and broken. Swimmers, pedestrians (walkers and runners - later athletes), horse and bicycle riders, motor car drivers, and aviators challenged themselves and each other to achieve ever faster times.[1] The lives of the men, and sometimes women, who set these records were acclaimed in the daily newspapers. Local motoring enthusiasts could emulate their heroes at the race meetings and speed trials staged on South Australia's country roads.[2] Sculptors such as Boccioni, Futurist writers like Marinetti and Leblanc, painters such as Leger and Flight, and the emerging cinematographers attempted to capture movement and speed in their respective fields.[3] Australian women artists, notably Dorrit Black, Ethel Spowers, and Evelyn Syme, also addressed speed as they grappled with modernity, machinery, and movement.[4]

Chapter Four traces the mechanisms through which economists, planners, and engineers inscribed speed onto the urban streets. The present Chapter examines the travelling body and the fundamental place of speed in shaping both the body of the modern traveller and the relation between the body, the street, and the new vehicle technologies. It is argued that the reordering of street space, to facilitate the speedy journey, was accompanied by and enabled through new interventions upon the body. The modern traveller was incited to move quickly; however, economical travel could not be achieved by random or chaotic actions. Unruly movement would waste the precious energies of the body and create inefficiencies in the conduct of the journey. Further, unruly behaviour on the part of one traveller would have adverse impacts

---

[1] The League of SA Wheelman had a regular column in the *Observer* newspaper that reported on cycling races and cycle tours in the State. The Observer also reported on the sport of Pedestrianism which later became 'Athletics'. See for example: *Observer* 1896, p932, p1035, p1084, *Observer*, 1901 p894. See also 'Round the World in Fifty Minutes', *Observer*, 18 July 1896, p17; 'Cycling in England', *Observer*, 5 September 1896, p96; 'Anatomy of the Bicycle', *Observer*, 19 September 1896, p33; 'Record Balloon Voyage', *Observer*, 1899, p81; *Advertiser*, 18 January 1930, p5; 'Amy Johnson's record breaking flight', *Advertiser*, 7 June 1930, p11.
[2] SAP, *Debates*, 23rd Parliament, 1st Session, 1918, p397 (Edward Anstey, Commissioner of Crown Lands).
[3] S Kern, *The Culture of Time and Space 1880-1918*, Harvard University Press, Cambridge - Mass, 1983, pp116-23; S Coppel, *Linocuts of the Machine Age: Claude Flight and the Grosvener School*, Scholar Press, Aldershot, 1995.
[4] S Coppel, pp150-86; H Topliss, *Modernism and Feminism: Australian Women Artists 1900-1940*, Craftsmand House, NSW, 1996, pp143-53.

upon the efficient movement of all travellers; a fact demonstrated by the rising road toll. To harness the full potential of rapid travel, it was necessary to order the street, the movement of vehicles, and the actions of the travelling body. This Chapter begins to trace the multiplicity of mechanisms through which (and sites from which) the body of the urban traveller was (and continues to be) drilled in the modern art of economical, efficient, and safe travel.

The first part of the chapter outlines how initial resistance to the use of the motor vehicle and the ordering of streets to secure economical movement was quickly subsumed under the problem of safe travel. The discussion then turns to the debates and tactics deployed in addressing the issue of safety. The motorist was targeted through speed restrictions but these laws were soon elaborated into a raft of instruments aimed at developing the character, capacities, and competencies of those who were in charge of, or interacted with, motor vehicles. The second part of the chapter examines the safe pedestrian and the measures which disciplined and induced self-regulation in the pedestrian. The final section considers the ordering of space to ensure safe travel and how the motorist and the pedestrian were incited to regulate their behaviour according to this order.

The texts analysed in this chapter have been produced through four different forums. Parliamentary debates, reports, and papers are sites into which a range of knowledges, from the legal and scientific through to the chatter of the population, are brought together, sorted, and re-circulated. Newspapers bring together a similar range of knowledges as parliamentary debates but they are subject to different types of controls. The newsletters of automobile, housewives, safety, and education associations have been used to capture the exchanges within and across particular interest groups. These sources demonstrate how 'expert' discourses are taken up, circulated amongst, and formulated into programs of action by groups within the population. Interest groups also serve as sites in, or through, which 'expert' knowledges are produced as they fund, initiate, or undertake research. Finally, medical and psychology journals have been examined for the way in which experts within these fields have objectified and problematised the travelling body.

The Problem of Safety

The motor vehicle was the fastest vehicle available to 'private' citizens and the use of the streets by motor vehicle drivers was beyond question as a basic right of all citizens. Those who challenged the presence of motor vehicles upon the streets risked

being silenced through ridicule. The motor vehicle, it was frequently proclaimed, was 'here to stay', it was 'the coming means of locomotion'; only those afraid of technological progress or bent on hampering the economic development of the state would question its use.[5] The economic imperative of speed had secured the place of the rapid journey, and hence the motor vehicle, within the modern city.

Like their mechanical predecessors (trains, trams, and bicycles), automobiles, lorries, and motor cycles were lauded for their speed and consequently their 'saving', or reduction in expenditure, of time. Charles Tucker reported to Parliament in 1904 that:

> A gentleman drove him down to Glenelg the other day, and they did the journey in one-fourth or one-sixth of the time it took in an ordinary vehicle.[6]

The time previously spent in travel could now be devoted to other activities as speed facilitated the extraction of ever more activities from time.

However, as demonstrated in Chapter Four, speed was impossible if the road was littered with people, horses, bullocks, wagons, and bicycles straying in any direction or simply standing still. The physical characteristics of cars and lorries made it difficult, if not impossible, to manoeuvre around objects upon the road except at very low speeds. The optimum conditions for motor vehicles to travel rapidly were identified as wide, straight, uncluttered roads. South Australia's roads contrasted favourably with England's roads according to these criteria: 'Here we have wide, straight roads; in England the roads are narrow and crooked, and the traffic tenfold what it is here'.[7] The broad, straight streets of the City of Adelaide met the requirements for speedy travel, while their division into multiple lanes each dedicated to different speeds of travel aimed to maintain the streets as uncluttered, uninterrupted space.

Council by-laws and State traffic legislation assisted in firming and entrenching the street order based upon speed as they began to delimit how and where individuals might conduct their journeys. The new laws created new offenders as old travel practices became unacceptable in the re-ordering of street space. The proliferation of

[5] SAP, *Debates*, 17th Parliament, 3rd Session, 1904, pp862, 948 (Thomas Price MHA, Hugh Dixson MHA); SAP, *Debates*, 19 Parliament, 2nd Session, 1907, p608, (John J Duncan MLC); SAP, *Debates*, 1907, p946 (Frederick Coneybeer MHA).
[6] SAP, *Debates*, 1904, p861 (Charles Tucker MHA).
[7] SAP, *Debates*, 1904, p862 (Thomas Price MHA).

traffic, traffic regulations, and traffic offences provoked comment from the Police Commissioner as he observed the improvement, or otherwise, of traffic order in his annual reports to parliament.[8] Breaches against the Motor Vehicles Act and City by-laws, which included offences committed by all types of travellers, increased yearly. In 1915, 508 breaches of the Motor Vehicles Act were recorded and by 1930 this had risen more than ten fold to 5,901 prosecutions.[9] A traffic court was established in 1928 to deal solely with traffic-related offences while a Street Offences Committee brought the conduct of street users under closer scrutiny.[10] Breaches of the City Council's traffic by-laws were published in the Police Commissioner's Reports under a general classification of offences against Corporation By-laws. The total number of breaches of Corporation By-laws in 1916 was reported at 50 cases; by 1930, when traffic offences were being listed separately, 7,709 traffic cases were recorded.[11] Pedestrian offences constituted a little over 25% of these cases and included walking against the signal (of the traffic constable), failing to keep to the left of the footpath, and jay-walking.

The South Australian population was not entirely enamoured of the new travel technology nor the rigid differentiation of street space required for the speedy journey. Sir John Downer voiced his objections to the motor car and its attendant noise and disruption in parliament:

> Indeed, they ought to ask not only how much the owners of the infernal machines should pay, but whether the nuisance should be stood at all by the authorities.[12]

Adelaide's citizens did not follow the British example of establishing pedestrian leagues nor did many letters of outright condemnation appear in newspapers.[13] Resistance to the automobile in South Australia is made visible through the numerous and ongoing complaints of motorists in parliamentary records, newspapers, and the newsletters of the Automobile Association. Walter Hamilton MHA, a keen

---

[8] For example: SAP, *Commissioner of Police, Report for the Year Ended 30th June - 1916*, Parl Paper 88, 1916, p1; SAP, *Commissioner of Police, Report for the Year Ended 30th June - 20*, Parl Paper 65, 1920, p1; SAP *Commissioner of Police, Report for the Year Ended 30th June - 1926*, Parl Paper 53, 1926, pp14-16.
[9] SAP, *Commissioner of Police, Report -1916*, p5; SAP, *Commissioner of Police, Report for the Year Ended 30th June - 1930*, South Australia, *Parliamentary Papers*, Parl Paper 53, 1930, p24.
[10] SRO: Police Department of South Australia, Correspondence, GRG 5, Series 2, 1928/227; 1929/740.
[11] SAP, *Commissioner of Police, Report - 1916*, p5; SAP, *Commissioner of Police, Report - 1930*, p18.
[12] SAP, *Debates*, 1907, p609 (Sir John Downer MLC).
[13] *Advertiser*, 15 December 1923, p5; *Advertiser*, 17 December 1923, p8; *Advertiser*, 18 December 1923, p6; *Advertiser*, 8 January 1930, p6.

advocate of the motor vehicle, commented in 1917 that '...there is still a very strong, unreasonable prejudice against motor vehicles'.[14]

Motorists read the actions of other road users as an affront to their 'right' to conduct their journey as quickly as possible and they were vocal in their indignation. This affront generally took the form of pedestrians and wagon drivers (in particular) refusing to cede ground to, or hurry their pace for, an approaching motor vehicle. The Commissioner for Public Works was prompted to comment in Parliament that:

> ...he had been much impressed, on country roads particularly, with the fact that people would not take notice of the warning given by drivers. They appeared to say, 'I have the right to the road, and you can blow as much as you like'. Those people deserved a little bump sometimes.[15]

Members of the Parliamentary Select Committee appointed to investigate the Road Traffic Act of 1934 detailed the unruly behaviour of all travellers, but especially those who travelled on foot:

> Pedestrians in daylight wander about the streets and 'jay-walk' and cross at any and every part of the street; they "dare" motorists to run them down, by dawdling across in front of them and ignoring warning signals.[16]

The by-law against jay-walking, enacted in 1921 to facilitate the passage of motorists,[17] was commonly ignored by pedestrians not only through lack of practice or in ignorance of the law, but also, it seems, in resistance to it. A crackdown on jay-walkers in 1930 had netted almost 2000 wayward pedestrians.[18]

Dissension to the ordering of the street was often explained in terms of every citizen's right to occupy street space. Pedestrians, wagon drivers, horse riders, children at play, and adults in discussion refused to stand aside for the new vehicles whose owners sought to make rapid progress along the street:

> The pedestrian has the primary claim to be considered, not only because he forms the vast majority, but also because he is powerless to avert

---

[14] SAP, *Debates*, 22nd Parliament, 3rd Session, 1917, p456 (Walter Hamilton MHA).

[15] SAP, *Debates*, 19 Parliament, 3 Session, 1908, p691 (Thomas Price, Commissioner of Public Works).

[16] SAP, *Honorary Committee Appointed to Report upon The Road Traffic Act 1934, Report and Recommendations*, Parl Paper 20, 1936, p17.

[17] ACC, 'By-Law XXXIV, Part XIV', *Government Gazette*, 8 December 1921, p1369.

[18] SAP, *Commissioner of Police, Report - 1930*, p18.

disaster so long as the motor driver regards the road as his special preserve.[19]

Passage along the street was not blocked by these other street users but it was certainly slowed in a contest over who should 'give ground' or 'go around' whom.

Opponents of the automobile usually drew attention to the dark side of speed:

> People who used motor cars and cycles developed a mania for fast travelling, and lost all consideration for others...the Prime Minister of England, Mr Balfour, one of the most intelligent men in Great Britain, became affected as soon as he got into his car, and engaged in scorching to such an extent that he had been fined for furious driving.[20]

The motor vehicle may have threatened the mental disposition of the driver, but the most frequent and forceful claim against the new travel technologies and the speedy journey was the threat they posed to public safety. Automobiles were the principle source of complaint but bicycles, electric tramways, motor cycles, lorries, and buses were also implicated in the rising rate of injuries and deaths.

South Australian Hospital Returns classified vehicle related hospital admissions under 'External Causes' until 1915 when accident admissions became numerous enough to warrant their own discreet classification, Traumatism by other Crushing (vehicle, railways, etc.). In 1915, 41 cases of Traumatism by other Crushing were recorded, and this figure rose from 70 cases in 1920 to 443 cases by 1925.[21] Hospital administrators began complaining about the number of vehicle accident victims that filled the wards and casualty departments to the cost of places and attention to other patients.[22] Medical practitioners discussed how best to treat and reconstruct the bodies and faces of those maimed in vehicle collisions.[23] South Australian Returns on Causes of Death also included vehicle related deaths under the broader classification of Traumatism by Other Crushing. In 1915, these deaths were recorded

---

[19] 'Daily Mail' cited in SAP, *Debates*, 21st Parliament, 3rd Session, 1913, pp915-16 (Hermann Homburg, Attorney General).

[20] SAP, *Debates*, 1904, p863 (William Rounsevell MHA).

[21] Compiled from: SAOGS, *Satistical Register of South Australia, 1915-16: Part VII, Religious, Educational and Charitable Institutions*, Parl Paper 3, 1916, Table 47; SAOGS, *Satistical Register of South Australia, 1920-21: Part VII, Religious, Educational and Charitable Institutions*, Parl Paper 3, 1921, Table 33; SAOGS, *Satistical Register of South Australia, 1925-26: Part VII, Religious, Educational and Charitable Institutions*, Parl Paper 3, 1926, Table 29.

[22] *Advertiser*, 15 July 1930, p16; Letter to *Medical Journal of Australia*, 28 August 1937, p368.

[23] For example: Author not stated, 'Traffic Accidents and the Medical Profession', *Medical Journal of Australia*, 27 March 1937, p481; C Straith, 'Management of Facial Injuries Caused by Motor Accidents', *Journal of the American Medical Association*, 108(2), 1937, p101; AMA Moore, 'Motoring Accidents', *The Lancet*, Vol. II, 1937, pp1153-54.

at 52 persons (47 males, 5 females), but the figure rose to 112 persons in 1928 before levelling off to an average of 100 deaths per year throughout the 1930s.[24] Automobile accidents accounted for more than half of all vehicle related deaths, with males constituting roughly 70% of the victims.

The police and coroner bore responsibility for gathering accident data in the legal process of determining the cause of the accident and attributing blame.[25] Police collected information for each accident which included: the mode(s) of travel involved; the actions by each party immediately preceding the collision; the locality, street, and position on the street in which it occurred; the nature and condition of the road; the time of day; the month of the year; the weather conditions; the property damage incurred; the number of persons killed or injured; and the age of those killed or injured. This data lent itself to wider usage as it could be aggregated to find: the total number of accidents; the regularity of accidents between different modes of travel (e.g. pedestrian and tram, pedestrian and motor vehicle, tram and motor vehicle); the number of deaths and injuries; total costs to property; parties most frequently attributed with blame; and frequency of accidents in each locality, street, and position upon the street.[26]

Aggregated crash data could be used to trace patterns in where and when accidents occurred, who was most likely to cause the accident, and what errors were usually made by the responsible party. Maps were produced of vehicle accidents in the City of Adelaide.[27] Streets with high accident frequencies were marked out as danger zones, and the number of accidents in every location along every street was identified together with those sites where fatalities had occurred. The accident data initially gathered by police for legal purposes (and insurance companies for compensation purposes) provided the basis for further interventions into the division of street space and the conduct of the traveller.

---

[24] Compiled from: SAP, *Registrar General: Annual Report - Births, Deaths and Marriages for the Year Ended 1915*, Parl Paper 19, 1916a, p8; SAP, *Registrar General: Annual Report - Births, Deaths and Marriages for the Year Ended 1915, Appendices*, Parl Paper 19A, 1916b, pp14-5; SAOGS, *Statistical Register of South Australia, 1929-30: Part II, Vital Statistics*, Parl Paper 3, 1930, Table 38; SAP, *Report upon The Road Traffic Act 1934*, p35; SAP, *Commissioner of Police, Report for the Year Ended 30th June – 1937*, Parl Paper 53, 1937, Appendix A.

[25] For example: SRO: Coroner, *Statistics 1932*, GRG 5, Series 44, 1932; SRO: GRG 5, Series 2, 1927/1309. From 1927, the police supplied 'Returns of Street Accidents' to the Government Statistician on a six monthly basis.

[26] SAP, *Commissioner of Police, Report - 1930*, pp23-24; SAP, *Commissioner of Police, Report for the Year Ended 30th June – 1931*, Parl Paper 53, 1931, p26; SAP, *Report upon The Road Traffic Act 1934*, Tables 1-16.

[27] SAP, *Commissioner of Police, Report - 1930*, Appendix G.

The problem of safety was vigorously deployed by the motor vehicle's detractors as they challenged the new travel technology. However, this problem also raised concerns for advocates of the motor car. The economic conduct of travel was serving to undermine the wellbeing, and would ultimately undermine the wealth, of the population. Both proponents and critics of motor vehicles created a chorus on the problem of safety saturating debate over street space and its usage. Safety 'drowned out' any other grounds of discussion on the motor vehicle such as its value and excesses, the claims it made upon street space, the division of space to facilitate its operation, the effects of this arrangement of space, and the limits of the use of vehicles. The contestation of motor vehicle usage was gradually confined to debates over safe travel conduct and the measures required to achieve such safety. Prohibiting vehicles in certain streets, at certain times or altogether, was only occasionally suggested, indicating either widespread acceptance of the motor vehicle or the impossibility of speaking against it. Solutions to the problem of safety focused upon regulating motor vehicle speeds but how this should occur was fiercely contested. Creating order upon the street and disciplining all travellers to that order was another way of addressing the safety problem.

The remainder of this chapter examines the production and circulation of discourses on safety within the South Australian context. It is argued that the problematisation of safe movement and the techniques of documentation used by agencies within (police, coroner, public hospitals) and beyond (employers, insurance companies) the State provided opportunities for elaborating newly emerging knowledges of the body. The engineer and planner were joined by the medical researcher and psychologist as they each objectified the travelling body in different, but mutually reinforcing, ways. The knowledge produced about travel has facilitated the development of a raft of practices, tactics, programs, and strategies aimed at disciplining the body to be a self-regulating traveller. It seems the subjectification of the travelling body (that is the uptake of the identity of the traveller) has been so effective because it has occurred through so many disciplines and disciplinary techniques.

Limits to Speed - Limits to Safety

Speed of movement had long been identified as one of the main threats that animals (whether hitched to a vehicle or not) posed to public safety. Horse-drawn vehicles (and horse riders) had been subjected to speed regulations from 1868 with different

limits applying within different contexts.[28] Speed limits were not set for open country roads, but a limit of six miles per hour applied to busy city streets and certain sections of the street, particularly corners, foot crossings, and intersections. Questions of safety and the appropriate speed of travel re-emerged with the introduction of each new conveyance upon the streets. As pointed out in Chapter Four, rail and tram service providers had to assure members of parliament that their vehicles would slow down to four miles per hour (walking pace) upon entering the city's streets.[29] Twenty years later, with the introduction of bicycles into the city streets, safety and speed were being reprioritised. Regulations brought in to restrict bicycle speeds were identified as an impediment to modern life.[30] Discussions regarding motor vehicles continued to focus debate on the relation between speed and safety. However, they also signal a discontinuity with the past as the peculiarities of motor vehicles provoked an elaboration of, and introduced new dimensions into, these debates.

Despite the uneven application of speed limits across European cities, there was ongoing agreement in South Australia that a point existed at which speed was injurious to the population, the economy, and society. Louis von Doussa MLC, an advocate of state regulations on speed, argued in Parliament that:

> He did not want to interfere with the accomplishment of long distances in short periods of time but they should guard against the thoughtless people who, when they caused an accident through their own carelessness, never stopped to enquire concerning the injury.[31]

However, it proved difficult to determine the precise point at which speed turned from efficiency to menace. Through the many years of discussion a common group of criteria were utilised in determining appropriate motor vehicle speeds.

Some of these criteria were initially drawn from the experience of horse travel. The *context* of the journey was of primary importance: the 'intensity' of activities along the street - whether fields, houses, shops and businesses; the number of people who used the street - level of congestion; the location of the traveller upon the street - junctions, corners, foot crossings. The advent of the motor vehicle produced an addition to this contextual criteria, namely, the nature of the street: its width,

---

[28] SAP, *City of Adelaide By-Laws*, Parl Paper 142, 1868.
[29] SAP, *Adelaide, Glenelg and Suburban Railway Bill*, Parl Paper 106, pp2, 3 (Benjamin Boothby, Henry Mais); SAP, *Select Committee Appointed to Report on the Adelaide and Suburban Tramways Bill: Report and Minutes of Evidence*, Parl Paper 49, 1876, pp 3, 4 (evidence - Edmund Wright, William Buik, William Milne); SAP, *Debates*, 1874, columns 1944-45.
[30] SAP, *Debates*, 14th Parliament, 3rd Session, 1895, columns 2368-72.
[31] SAP, *Debates*, 1904, p477 (Louis von Doussa MLC).

alignment, surface material, and the number of junctions and foot crossings along its length.

The nature of the *vehicle* was also found to have a bearing upon what constituted an appropriate speed: of significance were its size and engine capacity, braking system, and the possible degree of driver control. Drivers had 'full' control over the mechanical 'beast' but they had only partial control over the horse and bullock as both driver and beast pitted their wills against the other.[32] The Automobile Association conducted tests to compare the rates of deceleration and stopping times achieved by motor vehicles and horse drawn vehicles in different conditions. These tests found motor vehicles achieved faster rates of deceleration and stopping times than horses, and the Association used this information both to argue for the greater safety of motor cars and to lobby for increased speed limits.[33]

Motor vehicles were initially subjected to maximum speeds generally higher than those applied to horses: 12 miles/hour in busy streets (reducing to 4 miles/hour on busy evenings), 6 miles/hour (walking pace) around corners, while in the country they could travel up to 25 miles/hour on open roads.[34] Once speed limits were set, they required the development of techniques and devices to determine speeds on the open road thus enabling the policing of travellers.[35] The speed limits set in South Australia were challenged as too restrictive even before they were put in place. The Automobile Association argued that lowering speeds made motor vehicles more dangerous as 'The motor vehicle was built for high speed, and therefore control was about as perfect as it could be'.[36] To slow traffic would reduce the motorist's control and the vehicle's manoeuvrability.[37] However, South Australian, British, and Continental experience of motor accidents provided a forceful argument against the abolition of speed limits altogether.

The problem turned upon putting in place regulations which preserved the safety of the public but did not impose such 'unreasonable' limitations upon the speedy traveller as to completely undermine the utility of the new travel technologies:

---

[32] SAP, *Debates*, 1904, pp946-47 (Frederick Coneybeer MHA, Hugh Dixson MHA).
[33] *South Australian Motor*, September 1913, 1(4), p 99; SAP, *Debates*, 1904, p947 (Hugh Dixson MHA).
[34] South Australia, 'The Motor Vehicles Act, 1907, No 938', *Acts of the Parliament of South Australia*, 1907, Ninth Schedule.
[35] SAP, *Select Committee of the House of Assembly: Report on the Motor Vehicles Bill 1918*, Parl Paper 77, 1918, pp6-7 (John Gunson).
[36] *South Australian Motor*, July 1914, 2(7), p202.
[37] *South Australian Motor*, September 1913, 1(4), p99.

> From perusing the newspapers I see that it is suggested that the speed of
> motor-cars be limited to a uniform rate of 12 miles an hour, not only in
> the principal streets, but in all the streets of Adelaide. I am afraid if such
> a course is adopted other corporations will follow suit in and about
> Adelaide, and the consequence will be the motor-cars will be made
> practically useless.[38]

The very value of the motor vehicle lay in its ability to accomplish journeys rapidly and impediments to its speed would, it was claimed, impose upon its usefulness in any number of ways.

The speeds attained by motor vehicles fitted the logic of the economic journey. John Gunson from the British Medical Association (South Australian Branch) commented to the 1918 Select Committee on the Motor Vehicles Bill, 'It is a waste of time to drive at a slow speed, and it is not economical'.[39] Gunson's concern for economy lay in both the amount and therefore cost of petrol consumed at different speeds but, like many others he relied on the motor vehicle for rapid travel between his medical duties:

> The motor was useful to the business and professional man, because it
> was a quick means of transit, and if the pace of motors was limited by
> law, what was the advantage of the motor?[40]

As early as 1907, the automobile was being constructed as a necessity of modern life rather than a luxury.[41] At the same time that motor vehicles were being represented in the daily newspapers as vehicles of recreation, leisure, hobby interest, and sport, they were being discussed in parliament as fundamental to the efficient operation of the economy.[42] The motor vehicle according to Gunson, amongst others, was not a toy for the amusement of the wealthy but it was important for professional men, the lawyer, the businessman, and the medical practitioner in carrying out their work as efficiently and economically as practicable.[43] The motor vehicle was not confined to use by the upper classes. It was identified as serving the working lives of members of the growing middle classes and, importantly, it served the public not only in enhancing the efficiency of business, but, instrumentalising health discourses, in

---

[38] SAP, *Debates*, 1904, p862, (S S Ralli cited by Thomas Price MHA).

[39] SAP, *Report on the Motor Vehicles Bill 1918*, p8 (John Gunson).

[40] SAP, *Debates*, 1904, p946 (Frederick Coneybeer MHA).

[41] SAP, *Debates*, 1907, p608 (John J Duncan MLC).

[42] Georgine Clarsen discusses how the construction of the motor vehicle and motoring as a hobby assisted in making interaction with machinery acceptable to the middle-classes. This type of interaction between body and machine had previously been the preserve of the working class. G Clarsen, 'The "Dainty female Toe" and the "Brawny Male Arm": Conceptions of Bodies and Power in Automobile Technology', Australian Feminist Studies, 15(2), 2000, pp153-63.

potentially saving lives as medical men could reach their patients in a timely manner.[44]

The rapid progress of the journey was linked to the progress of the city more generally as Peter Allen argued in Parliament:

> If they were going to regulate the rate of speed so that the slowest individual in the city could get out of the way of motors, the State would never progress.[45]

At the same moment that the speedy journey was tied to the progress of the city, slow travel practices were simultaneously linked to stagnation and waste. The recurring theme in the debates on speed limits, like the debates on road construction and maintenance, was the various ways in which rapid travel secured and enhanced the economy. Impediments to speed would undermine the industrial sectors being created through the new travel technologies (bicycles and motor vehicles), while rapid travel not only served the operation of the state's economy but also ensured the city and state operated economically. Slow travel and the slow traveller were constructed as an impediment to the economy through precisely the same criteria as the motor vehicle was perceived as a boon: the size of the industries associated with horse and foot travel was small and the speed of operation of the economy was slow, resulting in the slow accumulation of capital and the uneconomical, or wasteful, use of time. Speed, it was frequently conceded, had to be limited, but such limitations should not undermine economical travel or the operation of the city or the state's economy. It was on the basis of the economic importance of speed that limits edged higher until by 1921 they were set at 20 miles/hour in the municipalities and 30 miles/hour outside municipal boundaries.[46]

The protracted discussions over appropriate speed limits were entwined with debates on which sphere of government should impose these limits, local councils or the central parliament. Local governments were initially vested with the authority to make traffic regulations, including setting speed limits, in 1903. Despite the subsequent centralisation of this authority under the Motor Traffic Act, councils maintained their right to adopt local restrictions according to the conditions within

---

[43] For example, SAP, *Debates*, 23rd Parliament, 3rd Session, 1920, p835 (Walter Hamilton MHA).

[44] SAP, *Debates*, 1917, p457 (David James MHA).

[45] SAP, *Debates*, 1904, 2 November, p863 (Peter Allen MHA).

[46] South Australia, 'Motor Vehicles Act, 1921, No 1480', *Acts of the Parliament of South Australia*, 1921, Part III, Clause 20.

their areas.[47] Council-imposed limits of 6 miles/hour were not uncommon and motorists complained that such low speeds did not *force* the people who congregated on or travelled slowly along the road to get out of their way:

> At present people know a motorist has to slow down to six miles an hour and they do not trouble to make way, whereas if he was travelling at a fair speed people would stand aside to let him pass.[48]

Local speed limits might be read as a strategy deployed by opponents of the motor vehicle (travellers and non-travellers) to maintain their claim upon street space. Re-locating the task of speed regulation to the central government was rationalised on the basis of ensuring state-wide uniformity in speeds, thereby preventing confusion amongst motorists.[49] However, this centralisation might also be interpreted as an attempt to foil local resistance to the speedy traveller.

Corporation practices in limiting speeds prompted Gunson to provide a checklist to the 1918 Select Committee on the Motor Vehicles Bill. This checklist set out some '...considerations which should be borne in mind before local authorities apply to the Local Government Board for (reduced) speed limits'.[50] Gunson's list aimed at making speed limits a last rather than a first resort. Further, he suggested that the imposition of any speed limit 'Must be "with a view to the safety of public"'.[51] Over time, public safety became the *only* grounds upon which the speed of travel was or could be challenged. The economic imperative of speed functioned within the discourse on safety to set the boundaries of possible safety practices: there were not only limits upon speed but also *limits to safety*. It was not possible within the logic of the economic journey to implement certain safety measures, such as requiring vehicles to travel at walking pace. Safety mechanisms such as limiting speed had to be in sympathy with the overall intent of the economic journey.

The Motorist: Character and Capacity

Speed laws targeted the traveller as a juridical subject by acting to proscribe particular rates of movement. But speed, it was argued, could only be dangerous where orderly movement was not observed either upon the street or within the body of the traveller. For many years, representatives of the Automobile Association

---

[47] SAP, *Debates*, 1904, p476 (John G Bice MLC).
[48] SAP, *House of Assembly Select Committee on the Motor Vehicles Bill 1918*, p26 (Peter Cushion)
[49] SAP, *Debates*, 1904, pp476, 860 (Louis von Doussa MLC)
[50] SAP, *Report on the Motor Vehicles Bill 1918*, p11 (John Gunson)
[51] SAP, *Report on the Motor Vehicles Bill 1918*, p11 (John Gunson)

campaigned for the abolition of speed limits, arguing that motorists should regulate their own speed of travel.[52] The Association was not alone in its claim that the critical factor in public safety was not speed but the interaction of the motorists with their vehicle and the context within (environmental conditions under) which they were travelling.[53] Motorists who drove in accordance with the street conditions and with attention to the nature of their vehicle would automatically adjust their travel speed to ensure the safety of themselves, their vehicle, and (by default) the public.[54] The motorist constituted within the Automobile Association's text was more in line with Adam Smith's economic subject. The actions of this self-interested subject were informed by a concern for their own self-preservation which would ultimately prove commensurate with the public interest.

According to the Association, those who did not drive in accordance with their context or vehicle should be charged with 'furious driving'. The precise practices that comprised furious, reckless, and careless motoring were yet to be detailed. The contextual factors that were being used to ascertain appropriate speed limits were also being applied to determine *where* and *when* a driver should adjust their travel to avoid recklessness. However, precisely how that conduct should alter was more difficult to decide. Behaviour which appeared careless to the observer within a given context might be 'reasonable' for the competent motorist, while apparently cautious drivers might actually be driving beyond their capabilities in the same situation. The personal attributes individual drivers should/should not possess, the variability in driving practices, and the threat to safety posed by different drivers were all matters yet to be explored.

Further, the appropriate conduct of other street users, whose behaviour impacted upon the motorist, was openly contested, making it difficult to determine what constituted safe travel practices. There was no established order of safe travel against which individual travel conduct, of the motorist, pedestrian, or any other traveller, could be positioned as more or less safe. The gradual accumulation and analysis of accident records made it possible to identify, sort, classify, and order travel practices (and the traveller who performed them) according to safety and this process simultaneously produced the spatial ordering of the safe street. It was through the

---

[52] SAP, *Royal Commission on Traffic Control: Third and Final Report*, Parl Paper 56, 1928, p5 (evidence WH Christophers - Secretary of the Automobile Association)

[53] SAP, *Royal Commission on Traffic Control: Third and Final Report*, p5 (evidence - WH Christophers); SAP, *Report on the Motor Vehicles Bill 1918*, p26 (Peter Cushion); SAP, *Debates*, 1920, pp833-4 (Angas Parsons MHA).

[54] For example, SAP, *Report on the Motor Vehicles Bill 1918*, p14, p18, & p23 (evidence - Harold Fisher, Richard Duncan, Arthur Laughton - Secretary of the Automobile Association).

establishment of the order of safety that the motorist, along with other travellers, could become self-regulating.

Character

As early as 1907, some travellers were deemed unsuitable to take charge of a motor vehicle as they were unable to regulate their own driving practices and would therefore create a threat to public safety. It was these extreme cases that were targeted by the resort to law; for the first time 'private' citizens were required to register their vehicles and obtain a licence to use a vehicle on the public streets. A register of motor vehicles was established which listed the particulars of every vehicle in the state together with the unique registration number allocated to each vehicle.[55] These practices of inscription, copied from procedures for hire vehicles, were applied to 'private' vehicles, thus making it possible to identify and trace motorists involved in accidents or offending against traffic laws. The Registrar of Motor Vehicles also issued driver's licences and maintained a register of every motor vehicle licence holder in the state.[56] The division between those who should and should not drive a vehicle was initially based upon morality. Some proof of moral standing was necessary to determine whether a person should drive and whether they should continue to drive. An individual's moral disposition was assessed according to a person's age and deference to the law.

For the first two decades of the twentieth century, age and morality were the only criteria for holding a driver's licence. Age conditions were first applied to 'private' travellers in 1907 when the age for obtaining a driver's licence was set at 14 for motor cycles and 17 for motor cars.[57] The age of licensure was contested on the grounds that children, particularly boys, took too many risks, that they lacked the moral judgement over their actions, to drive safely on public roads. Police Seargant Daniel Reiley submitted to the 1918 Select Committee on the Motor Vehicles Bill that:

> A person of the age of 18 is young enough to drive a motor vehicle.
> Anybody under that age is unable to see danger, and is apt to take risks.
> I favour raising the age for motor cycle licences to 16 years. We cannot
> put old heads on young shoulders. Boys of 14 take risks in racing about
> the streets.[58]

---

[55] 'The Motor Vehicles Act, 1907', Clause 7 (a) & (b)
[56] SAP, *Debates*, 1920, p1224 (John Bice MLC)
[57] 'The Motor Vehicles Act, 1907', Clause 12 (a)
[58] SAP, *Report on the Motor Vehicles Bill 1918*, p34 (Daniel Reiley)

The Registrar of Motor Vehicles argued in a similar vein that:

> The ages as prescribed in the Act are, in my opinion, quite young enough. Boys under those ages seldom see any danger and have no fear, and they cannot reasonably be expected to use the same judgement as older persons. In my opinion, a boy of 14 years of age on a motor cycle is more often than not a common danger to the public.[59]

The age limit did not go unchallenged, as others argued age was not a necessary indicator of competence. Indeed, according to some reports, the younger a person was when they learned to drive, the greater competence they would ultimately achieve.[60] However, parents intervened in this debate through their requests to the Registrar of Motor Vehicles to refuse their sons driving licences.[61] Discourses on childhood and parental responsibilities were instrumentalised in determining who should and should not drive. The point at which the child was deemed sufficiently responsible for their own travel conduct was marked by their right to obtain a driver's licence so that licence holding could symbolise the shift from childhood to adulthood.

Apart from age, the only other grounds upon which the Registrar of Motor Vehicles could refuse a driver's licence was the applicant's past driving record.[62] Offences were inscribed on the back of the motorist's licence, providing a driving record which could be called upon in court to support or challenge the cancellation of an individual's licence. Which offences, serious or minor, should be inscribed on the driver's licence, and what constituted serious and minor offences, were subject to lengthy discussions. For example, exceeding the speed limit (past stationery tram cars, around corners, along busy streets) was regarded by motoring representatives as a perfectly understandable action: conducting one's travel efficiently and economically. To others, speed endangered life and therefore constituted a serious crime.

The relationship between the conduct of travel, the morality of the traveller, and the right to travel underpinned the debate over traffic offences. Were travel offences indicative of 'bad character'? Did 'bad character' imply one would not conduct

---

[59] SAP, *Report on the Motor Vehicles Bill 1918*, p2 (Francis Wells)
[60] SAP, *Report on the Motor Vehicles Bill 1918*, p13 & p18 (Harold Fisher, Richard Duncan). See also Mihailovski-Oralnikof cited in *Psychological Abstracts*, vol. 9. 1935, Entries 2431, 268.
[61] SAP, *Report on the Motor Vehicles Bill 1918*, p2 (Francis Wells).
[62] SAP, *Report on the Motor Vehicles Bill 1918*, p2 (Francis Wells).

one's travel appropriately? Did the answer to these questions imply the right to refuse or cancel a driver's licence? The position taken by the Automobile Association representative, Arthur Laughton, suggests that motor driving offences were not deemed by the Association as reflecting one's moral disposition. Laughton argued that only serious offences (which included failing to stop at the scene of an accident, furious and reckless driving but did not include excessive speed) should be inscribed on a driver's licence and motorists who committed such serious offences should be issued with a 'clean' licence each year.[63] Taking up the second question, some commentators sought to stop 'bad characters' obtaining licences in the first instance. The Chief Secretary argued in parliament that the regulations applied to cabmen to prove good character should also apply to private motorists as a means of '...shut[ting] out scoundrels and reckless drivers'.[64] The Registrar and Police Sargeant Reiley were agreed on the need for stricter licensing laws as persons of bad character, determined by their criminal record, might use motor vehicles to indulge in criminal activities.[65]

Children, individuals with an under-developed sense of morality, and offenders, those who lacked morality, were considered either unable or unworthy of holding a driver's licence. These eligibility criteria had been previously applied to applicants wanting to drive vehicles plying for public hire but they had never been applied to the 'private' citizen.

Capacity

Moral disposition or 'character', according to the Registrar of Motor Vehicles, was insufficient to ensure motorists drove in accordance with public safety. There were some drivers who simply did not have the physical and/or mental capacity to be safe drivers. The Registrar explained to the 1918 Select Committee that under the existing licensing laws he was obliged to issue a licence to anyone who applied regardless of their mental or physical abilities.[66] The Registrar, Parliamentary Draughtsman, and Sergeant in charge of Traffic (the only three people called to give evidence to the Committee who had no or very limited experience in driving motor cars), complained that a man who had missing limbs, failing eyesight, was blind, or only partially sane

---

[63] SAP, *Report on the Motor Vehicles Bill 1918*, p15 (Arthur Laughton).
[64] SAP, *Debates,* 1907, p613 (Andrew Kirkpatrick, Chief Secretary).
[65] SAP, *Report on the Motor Vehicles Bill 1918*, p2 & p34 (Francis Wells, Daniel Reiley).
[66] SAP, *Report on the Motor Vehicles Bill 1918*, p2 (Francis Wells).

could acquire a driver's licence and such people may prove a threat to public safety when driving a motor vehicle.[67]

> Not long ago a motor cyclist with one leg and a withered arm, and carrying a crutch, was riding through the streets of Adelaide to the danger of the public and to himself. When the police stopped him he had no licence, but within half an hour he had one issued to him; but he was still a danger to the public.[68]

Eyesight (acuity of vision and ability to distinguish colours) and hearing were deemed the most significant physical attributes of the driver.[69] Tests developed through nineteenth- century experiments in pyschometry were instrumentalised within the transport sector to distinguish between those who should and should not drive public vehicles.[70] These tests of capacities were applied to both tramway and railway men in New South Wales.[71] In South Australia, it appears they were applied initially only to railway workers as each employee was required to provide

> ...a certificate on the prescribed form from a registered medical practitioner that he is free from bodily and mental infirmity, and from the authorised medical officer that his sight and hearing are up to the standard requirements of the service.[72]

By 1921, the Registrar of Motor Vehicles could require any 'private' citizen applying for a motor vehicle licence who appeared to be suffering a serious physical incapacity to prove their ability to drive.[73] Until the mid-1930s the onus was upon the Registrar to detect infirmities in the applicants. Driving licence applications introduced in 1936 required the applicant to identify their own disabilities and disclose these to the Registrar.[74] Although the incapacity did not automatically disqualify a person from driving, it provided the Registrar with grounds to invoke qualification tests.

The physical capacities identified as necessary for driving, the techniques used to determine those capacities, and the measures used to test the competence of the driver began to invest the division between those who did/did not have the right to

---

[67] SAP, *Report on the Motor Vehicles Bill 1918*, p2 & p33 (Francis Wells, Daniel Reiley).

[68] SAP, *Report on the Motor Vehicles Bill 1918*, p33 (Daniel Reiley).

[69] Author not stated, 'The Safety of the Travelling Public', *Medical Journal of Australia*, 15 April 1916, p327.

[70] G Miles & D Vincent, 'The Institute's Tests for Motor Drivers', *The Human Factor*, vol. VIII, (7-8), 1934, pp245-57. For a fascinating account of the development and elaboration of these and similar tests see J Crary, *Suspensions of Perception: Attention, Spectacle and Modern Culture*, MIT Press, Cambridge, 1999.

[71] Author not stated, *Medical Journal of Australia*, 15 April 1916, p327.

[72] SAP, *Railway Commissioner's Regulation No.21*, Parl Paper 50, 1908, p1.

[73] 'Motor Vehicles Act 1921', Clause 16.

[74] SAP, *Report upon the Road Traffic Act 1934*, p36.

drive with a scientific basis. The 'right to drive' was being underpinned by scientific knowledge of which bodies had the capacity to drive effectively. This shift in practices provides an example of the juridical subject, the citizen with rights, being established through the rationality of science. The tests of capacity which underpinned competency were very gradually elaborated to the rest of the population as, for the first time, one's rights as a citizen in travel were delimited by one's physical and mental condition in relation to the norm.

Everyone had the right to travel, but the means by which an individual travelled was no longer a 'natural' right granted by virtue of their existence (that is, as a juridical subject established in nature), nor was it merely a choice according to an individual's ability to pay (their position as an economic subject).[75] An individual was established as a subject in law, a citizen with rights, through science, and by the early twentieth century the extent of an individual's rights in travel were also established scientifically. Those who had full physical and mental capacities were granted full rights in travel, that, is they had the right to travel by whatever means were available to them, while those who had diminished abilities underwent qualification tests, special training, or were subject to diminished rights in travel. The individual's choices in travel, their position as an economic subject, were (continues to be) mediated or underpinned by their status as a subject in law and this latter was (is) itself determined through the authority of science.

The moment of testing the 'private' traveller was a critical disjuncture with past practices of determining who could and could not travel, never before had an individual's rights as a citizen in travel been mediated by the capacity of their body to perform specific actions. The motorist epitomises liberal individualism but not because the motorist has complete freedom of choice in their travel. Rather, the motorist's position as an economic subject, the individual freely choosing in the market of travel, is first determined by their position as a citizen, a subject in law which is itself established by scientific methods of testing. The motorist has not become the privileged traveller through their class position but through the authority of science. Motorists have been issued with a driver's licence on the basis of their capacity to be competent and therefore safe drivers; that is, their position in the relation to the norm. The responsibility motorists take for their own travel and the safe conduct of that travel has been rewarded through the priority accorded to them

---

[75] Exceptions being those persons incarcerated for madness or crime and children, whose rights to travel were gradually diminished.

in their use of the street. This priority operates to regulate all other travellers and is conferred upon the motorist as 'freedom'.

The Motoring Body: Capacity to Competence

As motor vehicle usage became more widespread and the number of road crashes increased, the precise skills necessary to driving and the capacities which underpinned these skills became the subject of closer investigation.[76] Studies into motor vehicle collisions drew from and converged with the growing literature on accidents in contemporary society. The increase in accidents was not isolated to the roads but was part of a much bigger problem of safety and modern technology. Industrial machinery, domestic appliances, electricity, and motor vehicles were all hazards of modern life. Workmen's compensation and compulsory motor vehicle insurance were introduced as measures to protect the victims of others' negligence.[77] National Safety First Councils were established in the United States, Britain, and Australia to examine and advise upon safety problems in the workplace, the home, the school, and the street. Researchers working at the National Institute of Industrial Psychology, established in Britain in the early 1900s, undertook research into workplace accidents and circulated their findings through the Institute's own journal *The Human Factor*.[78] Numerous studies were made into industrial accidents because their frequency and the circumstances which gave rise to them undermined the efficiency and profitability of the machinery and mass production technologies. The body that interacted with machinery was gradually brought under scrutiny.

Through the growing research into accidents (motor vehicle and otherwise), researchers claimed to have discovered patterns in their occurrence and the types of people subject to them.[79] Accident proneness, the special liability of certain individuals to incur accidents, attracted interest from health professionals. Studies of

---

[76] SAP, *Report on the Motor Vehicles Bill 1918*, p22; Miles & Vincent, *The Human Factor*, pp245-57.

[77] for example, DG Robertson, 'Observations on Industrial Medicine in Australia and Other Countries' Paper Presented to the Australasian Medical Congress, 1924, reported in *The Medical Journal of Australia*, 24 May 1924, pp310-11; Author not stated, 'Worker's Compensation Insurance Practices in NSW', *Medical Journal of Australia*, 4 April 1931, pp424-25; Honorary Committee Appointed to Report upon The Road Traffic Act 1934, pp11-13.

[78] *The Human Factor* was first published in 1922 and the work of Institute researchers was eventually brought to the attention of medical researchers. G E Little, 'Letters', *British Medical Journal*, 21 April 1934, pp730-31.

[79] For example see articles published in the *Medical Journal of Australia*. Author not stated, 'The Human Factor in Industry', *Medical Journal of Australia*, 3 November 1923, pp469-70; Author not stated, 'Carbon Monoxide Poisoning', *Medical Journal of Australia*, 3 November 1923, pp470-71; Author not stated, 'Accidents in Industry', *Medical Journal of Australia*, 13 September 1924, pp277-78; P L Hipsley, 'Fracture of the Skull in Children', *Medical Journal of Australia*, 3 January 1925, pp5-9; B Harrison, 'Electrical Accidents', *Medical Journal of Australia*, 24 September 1927, pp439-45; Author not stated, 'Accidents to Minors', *Medical Journal of Australia*, 20 September 1930, pp401-2; C Warren, 'Effects of Noise on the Nervous System', *Medical Journal of Australia*, 9 January 1932, pp49-50.

individuals frequently involved in accidents sought to identify those characteristics the accident prone might hold in common. Convulsions, speed of muscular movements, neuro-muscular co-ordination, intelligence, temperament, and attention span were all identified as conditions and capabilities which warranted further investigation as potential sources of accident proneness.[80] Investigations into industrial accidents, especially those in the transport sector, held particular significance for the 'private' motorist and the public citizens who were subjected to their driving.

Industrial psychologists working in the transport sector (railways, tramways, road freight and road passenger services) used employee accident records compiled and kept by employers to compare groups of drivers and make longitudinal studies of individual drivers.[81] Analysis of employee files helped determine the effectiveness of entry tests in eliminating 'accident prone' workers from the transport sector. Testing procedures could then be revised, elaborated, or discarded according to the findings of these studies.[82] Driver tests did not stop at the elimination of 'unfit' applicants. The capacities of the transport worker were trained to the tasks of driving before they could qualify as competent drivers.[83] In South Australia, a prospective tram driver was required to '...have a certificate to the effect that he has trained and has passed the examination for Motorman'.[84] This training, or discipline as Russell Booth put it in 1911, was expected to make the actions involved in driving into automatic habits of the body, thereby leaving the '...brain free to deal with any sudden emergency'.[85] Accident statistics demonstrated that the rate of traffic accidents amongst transport sector workers was declining at the same time that it was increasing amongst the general population.[86] This data strengthened the case for those advocating licence tests and driver training for 'private' citizens.

Advocates of driving tests were concerned that motorists should not only prove they possessed the physical and mental capacities necessary to driving, but also that these capacities were sufficiently trained in the tasks of driving to ensure they were not a threat to public safety. The skills necessary to be a competent driver initially included starting and maintaining vehicle movement, turning and stopping the vehicle, and

---

[80] Author not stated, 'Accidents and the Human Factor', *Medical Journal of Australia*, 24 April 1937, pp635-36.
[81] Miles & Vincent, *The Human Factor*, pp245-57.
[82] Miles & Vincent, *The Human Factor*, p246.
[83] SAP, *Report on the Motor Vehicles Bill 1918*, p22 (Albert Ford).
[84] Municipal Tramways Trust, 'Rules and Regulations', *Government Gazette*, 12 June 1912, p430.
[85] SRO: Municipal Tramways Trust, *Proceedings of the Australasian Tramways Officers Association Third Conference*, GRG 22, Series 19, p155,.
[86] *Psychological Abstracts*, vol. 8, 1934, Entry 2236; Little, pp730-31.

changing gears.[87] Taking each of these essential skills individually, it was possible to trace back into the body the precise muscles, movements, and sensory organs involved in the performance of every action. The driving test assumed the ability to start the vehicle engine: regardless of the vehicle, this required the presence of an arm but the type of vehicle (built in ignition or crank) would determine whether fine or gross motor skills of the fingers, hands, or arm were required.[88] The tests also assumed the ability to make the vehicle move: control over acceleration and deceleration required the presence of at least one leg, while muscular strength and neuro-muscular co-ordination enabled the driver to determine and apply varying amounts of pressure to the brake and accelerator pedals. Drivers also needed the ability to change gears, that is, the ability to detect changes in the engine (sound, vibration) which indicated the need to move to a higher or lower gear, and the physical capacity to change gears which, depending on the vehicle, required the presence of an arm and leg, the strength to grip and manipulate the gear lever, and the ability to co-ordinate the movement of the arm and leg through a gear change. Further, drivers must have the ability to identify and respond to changing conditions, based upon sensorial attention[89]: the capacity of the sensory organs (eyes, ears) and nervous system to detect external stimuli and changes in external conditions, as well as the ability to co-ordinate these messages from the sensory organs with limb movements.

The specific capacities necessary to accomplish the tasks involved in driving (sight, hearing, and presence of limbs) were slowly elaborated to include other abilities as the body of the traveller was explored in ever more detail. A study by Dr R H Pauleine, reported in the *Education Gazette*, found the competent motorist comprised additional physiological and psychological criteria such as quick reflexes and long attention span.[90] Each of these attributes could be tested for speed and/or accuracy with motorists being categorised according to the results of the tests. In a letter to the *British Medical Journal,* E Graham Little, an advocate of compulsory testing for all motorists, reported on tests undertaken by motor vehicle drivers:

> ...to ascertain the accuracy, speed, and uniformity of speed, of responses to various signals; the ability to distribute attention effectively and to resist distraction, visual acuity and binocular balance; the ability to estimate rapidly and accurately the size and distance of other vehicles.[91]

---

[87] SAP, *Report on the Motor Vehicles Bill 1918*, pp22, 25 (Albert Ford, Peter Cushion).
[88] For a discussion of the shift from crank start to electric start motors see Clarsen, pp159-61.
[89] Author not stated, 'The Psychology of Motor Accidents', *Education Gazette*, 15 June 1931, p187-88.
[90] *Education Gazette*, 15 June 1931, p187.
[91] Little, p730-31.

This report circulated widely in Adelaide, appearing not only in the locally available *British Medical Journal*, but also the Adelaide City Council's Traffic Files, the *Education Gazette* and the Parliamentary Select Committee into the Road Traffic Act.[92] Entries published in *Psychological Abstracts* indicate that researchers in Europe and the United States were working on identifying and analysing the myriad capacities necessary to driving a motor vehicle.

Further, studies were undertaken to determine how these capacities were affected by different conditions. The *Education Gazette* explained the conditions which influenced reaction time:

> Take, for example, at an intersection the signal of the traffic constable and the hand and foot movements necessary to start the motor. This is a pure reflex action, and used to be thought to be instantaneous, quick as thought, but we now know that it takes time, and this varies with different people and under different circumstances...
> The reaction time is a conditioned reflex, and can be influenced by many factors: -
> 1. Practice shortens.
> 2. Fatigue lengthens.
> 3. Attention shortens.
> 4. Intensity of signal shortens.
> 5. Narcotics lengthen.
> 6. Anaesthetics lengthen.
> 7. Alcohol alters it –
>   *(a)* At first shortens.
>   *(b)* At last lengthens.

The factors which influenced the reaction times of the body could be teased apart and the body of the motorist intervened upon to shape, enhance, and improve the skills necessary to driving. As Paul Adam explained in *La Morale des Sports*, 'Driving builds skills that require sustained, attentive and quick responses over large distances'.[93] Speed and order – both upon the street and within the motoring body – emerge as important criteria in constituting the traveller and ultimately determining one's ability to hold a driver's licence.

Through the late 1920s psychologists began to broaden their interests from industrial accidents in the transport sector to traffic accidents more generally. The journal

---

[92] ACCA: Parking and Traffic Control File, Report on the Human Factor in Traffic Accidents, No. 34; SAP, *Report upon the Road Traffic Act 1934*, p6; *Education Gazette*, 15 June 1931, pp187-88.
[93] Cited in Kern, p217.

Psychological Abstracts first appeared in 1927 and gathered together abstracts of psychology articles and reports published throughout the world. A single entry on traffic accidents appeared in the 1927 volume of Abstracts but by 1938, 43 entries were included on the driver alone. Medical doctors also participated in creating the new field of road safety. Until the mid-1930s, they had largely confined their interests in road collisions to attendance at the scene of accidents and treating the injuries suffered by crash victims.[94] After this time, articles on licensure, traffic accident prevention, and the role of medical officers in determining compensation for injuries appeared in the *Medical Journal of Australia* to provide a new interest for the practitioner.[95]

Psychologists and doctors challenged the expertise of those charged with testing drivers, arguing they lacked sufficient knowledge of or expertise in the human mind and body.[96] Driving licence tests were purely eliminative; they did not attempt to identify or address the basis of a person's incapacity. Medical researchers such as Lowell S Selling argued that licence testing should move beyond the process of eliminating risky drivers, while the study of road accidents should go further than the attribution of blame.[97] The involvement of medical practitioners in licence testing and road crash studies would serve to reduce accidents and assist in the identification and treatment of infirmities, thereby enabling as many people as possible to become motorists:

> It might well be possible, under a properly devised system of this kind, to study the difficulties of the individual candidate and to remake him into a safe driver.[98]

Medical commentators in Australia suggested the relevant authorities should facilitate the production of more comprehensive accident statistics, perhaps through the establishment of a Motor Accident Investigation Board. It was envisaged the Board would act as a collection point for the information gathered by individual insurance companies as '...the majority of accidents come within the purview of

---

[94] For example, Author not stated, 'Emergency Treatment to Persons Injured through Motor Accidents', *The Medical Journal of Australia*, 20 July 1935, p94.
[95] For example: Author not stated, 'Motor Traffic Accidents', *The Medical Journal of Australia*, 25 May 1935, pp657-58; Author not stated, 'Traffic Accidents and the Medical Profession', *The Medical Journal of Australia*, 27 March 1937, p481; Author not stated, 'The Motor Car and the Medical Man', *The Medical Journal of Australia*, 3 April 1937, pp514-15; Author not stated, 'Replacing Instinct and Guesswork by Calculation in Motor Driving', *The Medical Journal of Australia*, 28 August 1937, p3689.
[96] LS Selling, 'The Physician and the Traffic Problem', *Journal of the American Medical Association*, 108(2), 1937, pp93-95.
[97] *Medical Journal of Australia*, 3 April 1937, pp514-15.
[98] *Medical Journal of Australia*, 3 April 1937, pp514-15.

[these agencies]' in the course of assessing compensation claims.[99] This raw data would assist in determining the causes of road accidents, the characteristics of their 'victims', and the interventions necessary to guide the motorist in the safe conduct of their journey.[100]

The practices of inscription of numerous agencies, the registrar of motor vehicles, police, employers, and insurance companies made it possible to examine the motoring body. Motorists could be compared and sorted, their capacities and the interventions likely to shape these capacities could be identified, evaluated, and elaborated. Rather than the individual being conferred with driving skills, one *became* a motorist.

The importance of developing one's driving skills was indicated in the debates over licensing. Motorists in New South Wales and Victoria were required to undertake practical driving tests and demonstrate they were reasonably proficient before being issued with a licence.[101] In South Australia, the first form of 'training' for private citizens involved learning the rules of the road. From 1936, driving licences were only issued to applicants who passed an examination on road rules.[102] Practical driving tests were not adopted in South Australia until 1960.[103] The motorist, it was frequently argued, could acquire the rudiments of driving fairly quickly and new drivers tended to be extremely cautious in their first five to six weeks of driving.[104] However, after one or two months and with growing familiarity of their vehicles, drivers forgot their caution and were most vulnerable to collisions during this period.[105] Practical driver's licensing tests would capture the learner at their most attentive and consequently do little to reduce the accident rate. Experience and education were deemed the appropriate response to the road safety problem. It was only with several years practice that the body gained proficiency in the actions, sounds, sights, and feelings associated with driving. Further, these actions and operations took time to relate to the motorist's education in the code of conduct upon the road.

But becoming a motorist, a person capable enough and responsible enough to control a motor vehicle, could begin at an early age. Safe travel practices were broadly

---

[99] *Medical Journal of Australia*, 25 May 1935, p658.
[100] *Medical Journal of Australia*, 3 April 1937, pp514-15.
[101] SAP, *Report on the Motor Vehicles Bill 1918*, p3 & p22 (Francis Wells, Albert Ford).
[102] SAP, *Report upon The Road Traffic Act 1934*, pp37-41.
[103] South Australia, 'Amendment Act (No 2) to "Motor Vehicles Act, 1960", No. 55', *Statutes*, 1960, Section 11.
[104] SAP, *Debates*, 1920, p837 (G R Laffer Commissioner of Crown Lands).
[105] SAP, *Report on the Motor Vehicles Bill 1918*, p17 & p23 (Richard Duncan, Arthur Laughton).

delimited by the imperative of speed. Documentation and analysis of collisions identified the circumstances, locations, and practices which precipitated road accidents. Particular actions in certain locations upon the street were more likely to lead to accident, injury, and death than others. Safe travel practices and the spatial orchestration of individual movements were detailed to produce the safe street. The order of safe travel and the limits it placed upon how different travellers might conduct themselves upon the road could be learnt well before a person occupied the driver's seat of a car. Those who did not pass the final test to become a competent motorist would be disciplined none the less in the appropriate conduct of the journey – they would acquire 'road sense':

> ...the concrete embodiment of the psychological factors involved could be summed up in the phrase "road sense." Road sense is – intelligence, attention, judgement, orderly and prompt impulses, orderly and prompt decisions, and knowing what we must do and what we must not do; that is judgement and the code of the road.[106]

British Psychologist, C S Myers, used his work (and was often cited by others) to argue: 'Systematic training is essential for *all* road users, including the car driver'.[107]

The ability of the motorist to travel in an orderly manner depended not only on their own competence, but also on the willingness and competence of others, especially the pedestrian, to observe such an order. Those unwilling to observe the order were responsible for the accidents which befell them; those unable to observe the order required special attention. This latter class of traveller was comprised mainly of children. In contrast to the adult body which was scrutinised as a motorist, the body of the travelling child was investigated as a pedestrian. The next section examines how the body of the child pedestrian was worked upon as it was disciplined to fit the new travel order.

The Pedestrian: From Resistance to "Common Sense"

Accident data enabled patterns to be traced in where, when, and which modes of travel were involved in road collisions. This data also made it possible to determine what circumstances or which traveller should be attributed with blame. Human failure was said to account for 84.7% of accidents and specific failures were associated with different modes of travel (see Table 5.1).

---

[106] *Education Gazette*, 15 June 1931, p189.

Motorist faults were defined largely in terms of the motorist neglecting, failing, or lacking judgement in his/her duties. The motorist was identified as *confused* in one classification whereas the pedestrian only *fails* in their responsibilities in one classification. Pedestrians were characterised as children in that they were found to be careless, confused, uncertain, and inattentive: they did not take responsibility to ensure their own safety.

Table 5.1. Causes of Accidents by Mode of Travel (compiled from *Education Gazette*).[108]

Motorist	Pedestrian	Child
Excessive speed, having regard to all circumstances	Crossing road carelessly or confusedly	Running into road (*e.g.,* chasing toys, &c.)
Failure to exercise care at a junction	Stepping off footway without looking	Crossing road carelessly or confusedly
Improper overtaking: cutting in and out	Crossing from behind vehicles	Crossing from behind vehicles
Failure to keep to near side of road	Boarding or alighting from moving vehicles	Playing games in streets
Losing control through pillion riding	Physically infirm	Crossing in front of vehicles
Inexperience	Crossing in front of vehicles	Stealing rides on vehicles
Cutting corners	Failing to use footpath	
Failure to sound horn	Intoxicated	
Intoxication	Carelessly boarding or alighting from stationary vehicles	
Failure to signal; physically unfit		
Leaving vehicle insecure		
Reversing *negligently*; forcing way through tramway queue		
Inattention, confusion, or *lack* of judgement other than as specified above		

---

[107] CS Myers, 'The Psychological Approach to the Problem of Road Accidents', *Nature*, 9 November, 1935, p740-42. Emphasis added.
[108] *Education Gazette*, 15 June 1931, p188.

There was no room in this list of classifications for factors such as 'refusing to cede ground' or 'challenging the motor vehicle/pedestrian'. And yet, the comment by Thomas Price quoted above that 'Those people deserved a little bump sometimes', suggests that resistance probably played a part in the circumstances surrounding some collisions.[109] The child pedestrian also escapes being listed as resisting the motor vehicle or the travel order of the street, even though 'playing games in streets' was at times a form of resistance.

> At the corner of Commercial Road and Charra Street Unley, any day and almost any hour is to be found a collection of small children playing the middle of the road. A lot of dirty, impudent children of tender years who take a delight in forcing motorists to jamb on both brakes to avoid running over them.[110]

Herbert Stack, lecturer in Safety Education at Columbia University, argued the legal focus upon individual 'fault', or wrong doing, was inadequate in explaining the root causes of accidents. These faults, he claimed, might be the expression of more complex and deeply embedded issues or problems.[111] However, the root causes of the accident did not extend to contestation of the spatial ordering of the street; rather, they were to be found in psychology and medicine.

Analysis of road accident data made it possible to determine which travellers were most likely to be involved in road crashes and this data was brought together with psychological and medical studies, particularly of children, to broaden the terrain of the road safety discourse. Collisions between motor cars, motor cycles, or bicycles appear to have been the most common form of road accident in the 1920s-30s. Figures for 1931 show that 310 accidents involved pedestrians, while 1520 accidents involved motor vehicles. However, a high percentage of pedestrian accidents resulted in people suffering injury or death: 283 persons were injured (260) or died (23) in the total 310 accidents involving pedestrians. In contrast, 565 persons were injured (542) or died (23) in the 1520 accidents which involved motor vehicles. Overseas studies found that children under 10 and adults over 60 were far more likely to die in pedestrian accidents than people of other age groups.[112]

---

[109] SAP, *Debates*, 19 Parliament, 3rd Session, 1908, p691 (Thomas Price, Commissioner of Public Works).
[110] SRO: Police Department of South Australia, Correspondence, GRG 5, Series 2, 1924/2144.
[111] H Stack, 'The Mental Causes of Child Accidents', *Mental Hygiene*, 15, 1931, pp283-89.
[112] *Psychological Abstracts*, 4, 1930, Entry 2779; *Psychological Abstracts*, 6, 1932, Entry 3675

Patterns were evident both amongst the people involved in accidents as well as the injuries sustained in different types of accidents. P L Hipsley studied skull fractures in children admitted to the Royal Alexandra Hospital in Sydney during the years 1922-23.[113] Hipsley's data shows that of the 27 children admitted with skull fractures, at least one third of the injuries (9) was incurred while travelling along or playing on the street. Hipsley pointed out in his study that 'Children are particularly liable to injuries, owing to their peculiar habits of indulging in all kinds of dangerous pursuits, such as jumping off moving vehicles and so forth'.[114] The cause of accidents in children did not remain for long at their 'peculiar habits' but soon began to be traced into the body of the travelling child and his or her physical and mental capacities.

The susceptibility of children to accidents had been identified in studies of industrial accidents and once again this research provided a point of entry into the study of the traveller. Stack pointed out that many of the key causes of industrial accidents had already been established and some of these causes may apply to the child who incurred accidents in the home and on the street.[115] The child's body, like that of the adult, was comprised of a range of 'natural' capacities such as reflexes, co-ordination, concentration, hearing, and vision, and certain conditions could enhance or dull these capacities. Stack reasoned that worry, tiredness, thirst for adventure, rebelliousness, and lack of intelligence were likely to diminish those abilities necessary to travel (reflexes, co-ordination, concentration, judgement, etc.), consequently placing the child traveller at risk.[116] Glück's 1935 research added developmental characteristics into the equation of children's travel related accidents. Awkwardness of body movements, lack of dexterity, undeveloped ability to deal with fear or to divide attention amongst different tasks, and lack of ability to adapt promptly to changed circumstances were all developmental factors which made children more or less vulnerable to accidents.[117] Knowing the body of the travelling child made it possible to elaborate strategies, programs, and techniques to intervene in the conduct of the child's journey.

The 'Look Both Ways Club', a safety program initiated in Canada, was established in Adelaide in 1930.[118] Members of the Look Both Ways Club committee included representatives from the Education Department, Royal Automobile Association

---

[113] Hipsley, pp5-9.
[114] Hipsley, p5.
[115] Stack, p284.
[116] Stack, p284.
[117] *Psychological Abstracts*, 9, 1935, Entry 4855.

(RAA), Retail Motors Association, Legacy Club, Returned Soldiers League and the Norwood Central School Parents and Citizens' Association.[119] The Club effectively operated at two different levels. Like other safety organisations, its committee provided a site in which participating agencies problematised travel conduct, circulated discourses on such conduct, and devised techniques of intervention. However, unlike other safety organisations, the Club itself sought primary school children as members and, to this end, branches were established in schools. These branches were usually initiated and administered by teachers but occasionally they were instigated and run by the children themselves.

To become a member of the Look Both Ways Club children paid a penny for a club badge and made a pledge to look both ways before crossing the road. In the first six months of its operation, the Committee claimed a South Australian club membership of close to 50,000 children and parents.[120] Once they had joined, children were exhorted to observe their pledge as, 'It is of little use to wear a badge or repeat a promise unless the sentiment and intention of both badge and pledge are thoroughly understood and implicitly obeyed'.[121] But children were not disciplined in their travel through the purchase of a badge or the contract that purchase implied. Rather, the Look Both Ways pledge began a child's drill in crossing the road.

The Look Both Ways Club targeted children in the quest to make particular walking practices widespread amongst the population. Specifically, the Club sought to '...cultivate the habit of looking to the right then looking to the left before leaving the safe haven of the footpath'.[122] Several years later, the police department introduced a similar set of practices, 'Stop, Look, Listen'. Children were instructed to stop at the edge of the road, turn to look along the road and listen out for approaching traffic before proceeding to cross. Sight and hearing were worked into coordination with muscular movement as children were disciplined to the order of travel.

The presence of vehicles on the road signalled to the child that their safety lay in waiting on the kerb; the absence of traffic gave the child their signal that it was safe to continue the journey. On leaving the kerb, the child was instructed to travel directly across the road, that is at a right angle, rather than walking diagonally along

---

[118] *Advertiser*, 21 January 1930, p16.
[119] *Advertiser*, 21 January 1930, p16.
[120] *Advertiser*, 9 April 1930, p16.
[121] W Dollman, '"Look Both Ways", Safety's Watchword', *Advertiser*, 3 March 1930, p14.
[122] Dollman, p14; See also SRO, GRG 5, Series 2, 1924/2144.

the road.[123] The child should walk briskly in anticipation of the sudden appearance of a vehicle. These small sequences of actions instilled as '...semi-automatic habits' in childhood would, it was expected, persist into adulthood.[124] The minute practices, look to the left - look to the right, stop - look - listen, to be performed at the kerbside prior to crossing the road were drilled into every child, in the classroom, at the school gate, and in the home.

The Education Department of South Australia supported the objectives of the Look Both Ways Club as it expanded the Department's classroom-based road safety campaign.[125] Schools were supplied with 'road safety' posters through the late 1920s-30s. These posters had been created in conjunction with the RAA and teachers were directed to display these posters and use them as the basis of lessons in 'civics' and 'morals'.[126] These posters depicted the road 'faults' of children and served as examples of inappropriate behaviours. Teachers and parents monitored the conduct of children at the school gate, ensuring the actions rehearsed in the classroom were practised on the way to and from school. Further, when the child reached home the 'Kerbside Song', learnt in school, might also be playing on the radio to reinforce the sequence of steps they may or may not have cared, wanted, or remembered to practice on their way home.

The child was not only disciplined in these tiny actions until they became 'habit', nor were they simply taught what were (in)correct behaviours. Herbert Stack argued against safety instruction which placed emphasis upon a 'Don't do this, and don't do that' approach.[127] There were clearly limits to acceptable behaviour; however, children would not learn how to conduct themselves safely in all circumstances through interdiction. Indeed, prohibition may cause rebellion. Children, like other pedestrians, could not rely on others to watch out for their safety. They had to take responsibility for their own safety and regulate their own journeys accordingly. Colonel Walter Dolman explained in his commentary on the Look Both Ways Club '...our own safety is our own affair. With that thought firmly fixed we must consider how best to achieve safety'.[128] Children were taught the principle of safety first and then provided with the opportunity to reflect upon journeys, their own and others',

---

[123] Dollman, p14.
[124] *Medical Journal of Australia*, 24 April 1937, p636.
[125] *Education Gazette*, 15 February 1930, p93.
[126] *Education Gazette*, 15 March 1929, p102; *Education Gazette*, 15 March 1929, Supplement; *Education Gazette*, 15 June 1929, Supplement; *Education Gazette*, 15 August 1929, Supplement; *Education Gazette*, 15 September 1929, Supplement; *Education Gazette*, 15 February 1930, p77.
[127] Stack, p285.
[128] Dollman, p14.

bearing this principle in mind. The safety posters distributed to schools, the road safety assignments set by teachers, and the travel stories children were incited to tell in the classroom all required children to assume the subjectivity of the traveller and the subject position of the pedestrian. These techniques also required children to reflect upon how they might conduct their journey to ensure their own safety.

The object of safety instruction was to create children as self-regulating travellers and this could not be achieved through proscription. The child constituted as a being with a free will would react in different ways to restriction and instruction according to their particular personality type. The rebellious child, according to Stack, would challenge the limitations placed on behaviour, while the adventurous child would not be convinced by arguments for restraint. Safety for these children might be approached

> ...by suggesting better adventures and more worth-while experiences [than stealing rides on vehicles]..., or, as one elementary-school supervisor expressed it, *try to give the children mild experiences with certain dangers....*
> No child, probably, has richer adventures in life than the Boy Scout and the Girl Scout, for their adventures are essentially "leading on" and not dull and stupid. They learn to control the dangers of their environment instead of just playing with them. [129]

Children's resistance to the new street order and their attempts to claim street space for their own use were lost in a psychological discourse on the rebellious or adventurous personality type. Not only should the physical capacities of the child's body be worked upon as a safe traveller, but so too should the child's mental capacities. Small exposures to dangerous circumstances would, it was anticipated, build a child's ability to deal with danger, they would learn to 'keep their heads'. This ability to 'keep one's head', that is to act calmly, decisively, and appropriately amid noisy, confused, and crowded conditions was frequently cited as a quality of a competent driver. [130] Developing this capacity in children, through teaching them how to deal with rather than be fearful of dangerous situations, was regarded by psychologists like Stack as a necessity in a modern and increasingly hazardous world.

The place for children to develop these mental capacities was not the street:

---

[129] Stack, pp285-86. Emphasis added.
[130] SAP, *Report on the Motor Vehicles Bill 1918*, p13 (Harold Fisher).

It would, therefore, appear to be an important responsibility of the school, the home, and the community to provide opportunities for real adventures for children and to attempt to substitute good adventures for bad. Scouting, camping, clubs, extra-curricular activities in school, playgrounds, parks - all of these and many others are attempts on the part of society to provide desirable experiences for growing boys and girls.[131]

Stack identifies the school, the playground, and the park as the appropriate places for children to play out their adventures; as he does this, he reproduces the street, within psychology discourses, as a space for the orderly conduct of travel. The space of the school and the school yard were marked out as acceptable areas for children to play. This spatial arrangement was formalised as safety organisations, such as the Look Both Ways Club Committee, lobbied schools and councils to erect fences to prevent children running onto the street.[132]

Safety programs such as the Look Both Ways Club primarily targeted children but they were conducted through a range of sites such as the school, the radio, newspapers, Scouts and Guides associations, and children's clubs (e.g. the Twinklers), thereby reaching beyond the child into the family. Parents, siblings, and any other family member prepared to honour the pledge and abide by safety first principles were encouraged to join the Look Both Ways Club. The knowledge of childhood accidents and the conditions which increased accident risk (e.g. reduced alertness due to tiredness, rebelliousness towards the rule of the road) were addressed to parents, but particularly mothers, through newspaper articles and women's magazines. A mother might place her own life at risk through carelessness, lack of attention, or resisting the emergent street order, but she was an irresponsible parent if she placed her child at risk. The family not only provided a site through which children were disciplined in their travel, but also parents were disciplined by this order through their responsibilities to their children.

The safety first principle was not confined to travel. National Safety First Councils were active in the workplace identifying safety problems, gathering information on accidents, circulating advice to employers and employees, and giving awards to workers with accident free records, such as drivers in the transport sector.[133] Safety in the home campaigns targeted women as domestic workers (responsible for their interactions with domestic appliances) and mothers (responsible for their children's

---

[131] Stack, pp285-86.
[132] *Advertiser*, 21 January 1930, p16.
[133] *Advertiser*, 31 Jan 1930, p27.

safety) through women's magazines and lectures to women's societies.[134] The safety first principle held that practices which avoided injury or death, such as fitting safety devices or following particular sequences of actions, should take precedence over production schedules and household routines.

Applied to the street, the safety first principle encouraged all travellers to put safety ahead of the accomplishment of their journey. In practice, the travellers specifically targeted in street safety campaigns were pedestrians and especially the child pedestrian. Children were saturated with the safety first principle as it applied to their activities upon and travel along the street. The safety first principle encouraged children to act to ensure their own personal safety: before retrieving a ball from the street, before hurrying across the street to get home, before *contesting the right to utilise street space*. Personal safety as the individual's own responsibility took priority over any other actions and claims that might be made upon the street. Overt resistance to the ordering of street space could be subsumed within broader safety campaigns and the performance of the resisting traveller/street user could be read not as resistance, but as recklessness, confusion, carelessness, or lack of responsibility.

Speed with Safety: Safety for Speed

The economic imperative of speed delimited which safety practices were possible so that ordering of the safe street was commensurate with the order that facilitated the speedy journey. Safety, in Adelaide, was not to be found in a spatial or temporal order that prohibited vehicles and/or pedestrians travelling on some/all streets at some/all times of the day, nor was it to be found in allowing travellers to move on any part of the street at a uniform speed. In Adelaide, the safe street was spatially divided along its length into multiple 'lanes' and each lane was dedicated to different travellers. The allocation of space was not based on size, weight, power source, temperament, or some other characteristic of the traveller and their vehicle, but was designated according to the speed of travel. Slow travellers occupied the margins of the street so as not to obstruct the progress of the rapid traveller, while at the same time ensuring their own safety. The speed of travel progressively increased toward the middle of the road with the centre lane being the preserve of the speedy traveller. The spatial order which would ensure speed was the same order that would ensure safety.

---

[134] *Advertiser*, 31 Jan 1930, p27.

The speedy journey was impossible without the ordering of movement, from the gross ordering of street space and conduct upon the street, to the *minute ordering of the actions of the body*. Speed of action combined with orderly action ensured efficient and economical movement. Disciplines such as psychology assisted in determining norms in reaction times, attention span, vision, and hearing. Foucault points out that the abilities of the body to bear arms, march in time, come to attention and so forth occurred through the break down of each action into its component parts and then practising these components in the sequence of the action.[135] This attention to the details of the body's movements trained the body in the ordering of movement and enabled it to acquire greater speed as it became more proficient. It is this minute ordering of the actions of the body which was also the object of concern in the discourse on safety.

Orderly travel secured speed with safety, while speedy reactions ensured safety and order. Discourses on the economical and safe journey, and the travelling subjects they brought into effect, were (and continue to be) mutually reinforcing. Through the 1920s-30s texts on urban travel linked safety with speed (or lack of it - congestion): 'Get your traffic out of the road but control it so that nobody is hurt. Control your pedestrians and get the traffic away'.[136] The subject within the discourse on economic travel immediately invokes the subject of the discourse on safety. At a moment when speed was being constructed as an economic imperative and congestion a cause of urban and economic dysfunction, the pedestrian was advised that 'It is very seldom that time is so precious that one cannot afford to wait until danger is past'.[137] It was within discourses on economical and safe travel that travelling subjects were constituted and practices put in place which disciplined those subjects to the new order of urban transport, an order which hierarchised and privileged subjects according to the speed and uniformity of their travel.

The spatial organisation of the safe street in the twentieth century was broadly similar to that of the nineteenth century street, but the divisions were more closely observed and they were layered with the rationale of speed rather than the 'natural hierarchy' of human and beast. The continuities which accompany the discontinuities of this spatial ordering have made the order of speed appear self-evident if not 'natural'. The order of safety was linked to the order of speed in such a way that contesting the street organised according to speed was also a contestation of

---

[135] Foucault, *Discipline and Punish*, p154.
[136] SAP, *Royal Commission into Traffic Control: First Progress Report, Motor Bus Traffic*, Parl Paper 56, 1926, p71 (W Christophers).

safe travel practices. Overt resistance to the order of speed could be eroded, although never eliminated, as the claims of the disaffected could be dismissed by or subsumed within the emergent discourses on safety. The production and circulation of discourses on safe travel conduct and the psychology of the unsafe traveller were fundamental to the establishment of the order of speed and the economic journey which it effected.

Conclusion

In the first decades of the twentieth century, speed permeated all aspects of life, but it was particularly important in relation to travel as it determined the economic efficiency of that travel. The concern for speedy travel had profound effects on the ordering of street space and served to privilege some travellers over others. Resistances to the re-ordering of the street and its privileging effects were overcome through the production of discourses on road crashes and the safety measures implemented to avoid such crashes.

The *context*, the *vehicle* and the *traveller* completed the trinity of factors which impacted upon road safety and different disciplines took charge of these factors, elaborating them into new sub-disciplines. Engineers, vehicle designers, and health professionals worked within and across their disciplines to determine the conditions which facilitated safety with speed. The traffic and road engineer took charge of the *context* creating roads capable of both rapid and safe travel. The width and alignment of roads were examined for their relation to vehicle speeds and the consequent safe speed of travel.[138] Straight, wide roads were often claimed to be suitable for high speeds, while narrow winding roads required speed restraint.[139] Records identifying the locality of road crashes enabled studies to be made of road design (camber, gradient, intersections, etc.) and its relation to speed.

The design engineer attended to *vehicle* safety features, front and rear lamps, height of headlight beam to avoid glare, indicators, etc. Designers were also urged to take account of the human being in relation to the devices within the car, such as levers and pedals, to determine those devices and their positioning which were within a

---

[137] Dollman, p14.
[138] H Cardew, 'Roads and Road Making in England', *The Australasian Engineer*, 19(69), 1922, pp14-16.
[139] SAP, *House of Assembly Select Committee on the Motor Vehicles Bill 1918*, p9

comfortable range for the 'normal' body and those which stressed the body too much.[140]

The study of the *traveller* became the preserve of psychologists and medical researchers. Nineteenth-century studies of sight, hearing, reflexes, co-ordination and so forth were elaborated in the twentieth century as they were applied to the travelling body. In their efforts to determine the range of capacities necessary to rapid movement, researchers set about measuring, recording, and comparing the minute movements and sensory abilities of individual travellers. This knowledge provided a basis for further interventions into the body as mechanisms were developed to work on the body's capacities and optimise efficiency of movements— in terms of time, energy use, and adverse impacts on other street users. These types of studies also assisted in sorting, classifying, and arranging travellers into a hierarchy. The bodies identified as below the norm might undergo remedial training but if this had no effect they would be excluded from attaining the highest position in the hierarchy, that of the 'motorist'.

Efficiency is the hallmark of the modern body and the modern traveller. However, the historical specificity of the travelling body has gone unquestioned because it has remained unacknowledged. The normalising discourses which have brought the efficient (or economic) traveller into effect have been so utterly effective because they have been produced, circulated, and elaborated by a multiplicity of experts working across a number of disciplines and agencies. This normalisation was made complete when, in 1949, economist and geographer George Zipf announced that an underlying principle of all human behaviour was the desire to minimise human effort.[141] This naturalisation of the 'efficient body', including that of the traveller, placed the modern body outside of the political domain and therefore beyond question. As the body was disciplined to move efficiently, knowledge began to proliferate on the journey and how to secure its economic conduct. It is the proliferation of knowledge about urban travel and its normalising effects that are the focus of the next chapter.

---

[140] Myers, pp740-42.
[141] G Zipf, *Human Behaviour and the Principle of the Least Effort: An Introduction to Human Ecology*, Addison-Wesley Press, Cambridge, Mass, 1949,pv.

6

ECONOMICAL TRAVEL AND THE ECONOMICAL CITY

The conduct of urban travel refers to all those practices which make up the movement of individuals, alone and collectively, within the urban environment. The study of such travel does not constitute a singular field of inquiry but consists of a range of different ways of objectifying movement within the urban environment. Chapters Four and Five demonstrated how, in the late nineteenth and early twentieth centuries, performances of travel were scrutinised for all those sites and actions which would enhance, impede, exacerbate, or ameliorate the efficient, economical, and safe conduct of journeys. A range of other phenomena which related to, shaped, or somehow impacted upon the conduct of the individual journey were also subject to investigation. For example, economists concerned themselves with the economics, administration, ownership, and operation of rail, tram, and omnibus enterprises, while engineers examined the relationship between vehicles and the construction and design of roads, railways, and tramways. These phenomena were investigated in the South Australian context through parliamentary committees, royal commissions, road conferences, annual reports, and the daily documentary routines of state and local government agencies. Those studies which focused directly upon the performance of travel were underpinned by an as yet shadowy conceptualisation of travel as transport, that journey between two points which could be undertaken more or less efficiently. However, the conduct of this journey from its origin to destination had not yet been the subject of investigation.

The following chapter explores how the concept of transport was increasingly articulated and refined in the post-World War II period as the journey, in its perceived entirety, came under scrutiny. The analysis focuses upon texts produced within the State bureaucracy and through the emerging community of 'transport' professionals. These texts are examined in terms of: the sites through which information about travel was gathered, processed, regulated, and re-circulated; the innovations in data collection methods; the travel practices included in and excluded from the study of transport; and the normalising and spatialising effects of the discourse on transport. Overall, it is argued that thinking about, or rationalising, travel as transport made it possible to objectify performances of travel in quite specific ways and consequently regulate the conduct of travel.

The first part of the chapter briefly establishes the conditions within which urban travel was re-objectified in the post-war period. It provides a brief review of the discursive production of the Adelaide metropolitan area and the relationship being forged between travel and the *urban fact*.[1] The discussion then proceeds to an analysis of the knowledge produced about urban travel. It is argued that the production of urban travel knowledge was informed by a concern to secure both the efficient conduct of the journey and the economic operation of the urban environment. This concern has enabled a range of travel practices to be positioned as deviant, thereby marginalising them within the study of urban movement. The closure of travel studies around practices of motorised transport had three consequences: it normalised practices of trans-port and the journey by vehicle; it centred the motor vehicle in the economical operation of the urban environment; and it assisted in giving effect to the spatial entity of the City and the Metropolis.

The second part of the chapter explores the role of expert knowledges of transport in the re-articulation of the relation between the State and the individual. The Municipal Tramways Trust (MTT) and the Highways Department provided examples, in the 1950s, of different models of the relationship between sovereign and subject. In analysing these examples, it is argued that knowledge and the role of the expert were the critical differences in each of these models. The MTT was criticised for imposing upon the individual's journey when the role of the State was to secure the conditions for the maximisation of travel choice. This latter activity required knowledge of the traveller and what constituted his/her freedom. The trip choice categories used in producing transport knowledge appear fundamental to the construction of the motor vehicle as maximising choice and the motorist as free.

Travel and the Urban Fact
The elaboration of knowledge about the urban journey coincided in South Australia with changes in the state's economy and demography. The expansion of South Australia's urban industrial economy and the growth of the state's urban population were identified in the third interim report of the Royal Commission on State Transport Services as both posing a risk to and being put at risk by movement.[2] The precise relation between movement, the economy, and the population was yet to be examined

---

[1] A term used by Michel de Certeau to indicate the materiality of urban phenomena without imposing a necessary order on that phenomena. M de Certeau, *The Practice of Everyday Life*, University of California Press, Berkeley, 1984, p94.
[2] SAP, *Royal Commission on State Transport Services: Third Interim Report: Traffic Within the City of Adelaide*, Parl Paper 15, 1951a, p3.

in the South Australian context. However, it was maintained that the expansion of industry and population would eventually increase urban congestion to serious proportions.[3] Planning, health, and housing discourses provided lessons from the British experience on the dangers and dis-economies of congestion. The signs of such overcrowding were already apparent in Adelaide's housing sector with post-war shortages of building materials. The Royal Commission on State Transport Services sought to address the threat of congestion in the spaces of the street.

To avert the problem of congestion, it was deemed that more information was required about urban movement. British traffic theorists such as Robert Mitchell and Chester Rapkin argued that changing conditions required much more detailed knowledge about travel.[4] It was no longer enough to understand and order movement within discrete times and places; it was necessary to know the nature, causes of, and influences on movement so as to plan for travel into the future. These sentiments were echoed in the South Australian context as the Chairman of the State Traffic Committee claimed, 'There was a growing appreciation that traffic control was a science calling for practical experience and continuous research'.[5] The study of travel began to be elaborated in terms of the nature of the information gathered, innovations in collecting and combining information, and the spatial coverage of traffic measures and observations.

As demonstrated in Chapter Four, congestion within the City of Adelaide had already come under scrutiny in the 1920s as the agglomeration of people moving about the streets by foot, beast, and vehicle were gradually brought to order. These movements were observed at particular times and places within the course of the journey but the journey itself, from one point to another, was neither available for, nor under, scrutiny. The study of travel in post-war South Australia remained focused on movement within the City of Adelaide but these localised movements began to be embedded within observations of the journey across a broader spatial context – the 'metropolitan area'.

The 'metropolitan area' of Adelaide is rarely problematised. It is either ignored as the outcome of 'natural' processes of urban expansion or it is explained in terms of broad political and economic processes.[6] In both cases, the metropolitan area is understood

---

[3] SAP, *Traffic Within the City of Adelaide*, p3.
[4] R Mitchell & C Rapkin, *Urban Traffic: A Function of Land Use*, Greenwood Press, Connecticut, 1954, pp6-8.
[5] Cited in *South Australian Motor*, September 1945, p5.
[6] For example: S Marsden, 'Playford's Metropolis', in B O'Neil, J Raftery & K Round (eds), *Playford's South Australia: Essays on the History of South Australia, 1933-1968*, Association of Professional Historians, Adelaide,

as an integrated entity which functions more or less efficiently. Michel de Certeau's chapter 'Walking in the City' poses a challenge to this position as he examines the role of urban professionals in discursively constituting the *urban fact* as a City.[7] It can be argued that the urban fact of the Adelaide plains has been brought into effect as a 'metropolitan area' through a range of discursive practices, including the techniques of inscription employed by travel related enterprises.

According to South Australian historian Susan Marsden, prior to 1945, metropolitan Adelaide consisted of a series of villages unevenly distributed over the landscape.[8] This landscape, initially marked out in the maps of the 1830s-40s, was

> A fertile plain, bounded to the south and east by a circling range of softly rounded hills...; on the west fringed by the waters of St Vincent's Gulf; while northward the plain loses itself in a series of undulations merging in the dark blue of the horizon.[9]

This plain was constituted within maps as the 'District of Adelaide' and the image dissected by gridlines in anticipation of the new 'European' settlement. The City of Adelaide, situated in the centre of the map, was differentiated from the surrounding 'District of Adelaide' by its closely drawn grid. At the end of the nineteenth century, numerous towns, villages, suburbs, and farms were dispersed across the plains. The City and the District were not self-evident physical entities but they were, and continue to be, unified through discursive practices such as mapping and naming.

In 1898, the Mayor of the City of Adelaide raised the 'problem of Greater Adelaide' which he anticipated would '...take prominent place in the need of a larger corporate body which may be able to control our larger needs'.[10] A single corporate body for the City and nearby suburbs and villages promised advantages including uniformity of laws, co-ordination of both infrastructure and services, and financial savings through economies of scale. The Town Clerk investigated the matter through the course of the following year and reported on similar movements in Melbourne, Sydney, and London, as well as European and North American cities.[11] The Town Clerk proffered two alternatives for achieving 'Greater Adelaide': 'unification' or 'federation'.

1996, pp117-31; D Rich, 'Tom's Vision? Playford and Industrialisation', in B O'Neil, J Raftery & K. Round (eds), *Playford's South Australia: Essays on the History of South Australia, 1933-1968*, Association of Professional Historians, Adelaide, 1996, pp100-16.
[7] de Certeau, pp91-114.
[8] Marsden, p117.
[9] D J Gordon, *Handbook of South Australia*, Government Printer, Adelaide, 1908, p21.
[10] ACC, *Mayoral Report, 1898-99*, p40.

Unification was the Town Clerk's preferred option with the City of Adelaide having greatest representation in any newly formed corporation.[12]

'Greater Adelaide' did not come into effect but the term 'Metropolitan Adelaide', which encompassed the same area, gained in currency over the following decades. The Adelaide 'metropolitan area' began to be differentiated from both the City of Adelaide and Country South Australia. In 1917, South Australia's first town planner, Charles Reade, produced a map of this area entitled 'Modern Town Planning – Metropolitan Adelaide's Unique Opportunity'. Statistical Returns printed in the Statistical Registers from the 1890s-1920s demonstrate an increasing usage of the term Metropolitan and Country in distinguishing localities and their spatial relationship. Records on Births, Deaths and Marriages, Magistrate's and Local Courts, Schools, Police Stations, local councils, and the population itself were sorted according to their location within or outside the Metropolitan Area.[13] The terms Municipal Corporation and District Council continued to be used but these entities were subordinated to the broader categories of Metropolitan and Country (often Extra-Metropolitan).

From the early decades of the twentieth century, agencies and organisations concerned with travel began differentiating the City, the metropolitan area, and the countryside through a range of discursive and non-discursive practices. For example, the privately owned horse-drawn tramways had been purchased in 1907 by the Municipal Tramways Trust, a statutory authority established the previous year to operate all tramway services which terminated in the City of Adelaide.[14] These tramways served an area within a 10 mile radius of the Adelaide General Post Office, roughly the 'metropolitan area'.

A second example of the discursive relation between travel and the metropolis is provided by the 1926 Royal Commission on Traffic Control. The Commissioners were appointed to inquire into three traffic issues, the first of which was the problem

[11] ACC, *Mayoral Report, 1899-1900*, pp219-28.
[12] ACC, *Mayoral Report, 1899-1900*, p241.
[13] See for example: SAOGS, *Statistical Register of South Australia - 1897: Part II, Vital*, Parl Paper 3, 1899, pp5-7; SAOGS, *Statistical Register of South Australia – 1897:* SAOGS, *Statistical Register of South Australia - 1897: Part V, Law and Crime*, Parl Paper 3, 1899, pp8-9; *Part VI, Revenue and Expenditure*, Parl Paper 3, 1899, pp16-21; SAOGS, *Statistical Register of South Australia – 1910: Part V, Law & Crime*, Parl Paper 3, 1911-12, pp15-16; SAOGS, *Statistical Register of South Australia – 1910: Part VI, Revenue & Expenditure*, Parl Paper 3, 1911-12, pp22-23; SAOGS, *Statistical Register of South Australia – 1910: Part VII, Religious, Educational & Charitable Institutions*, Parl Paper 3, pp10-13; SAOGS, *Statistical Register of South Australia – 1918-19: Part III, Population & Vital*, Parl Paper 3, 1919, p4; SAOGS, *Statistical Register of South Australia – 1918-19: Part V, Law & Crime*, Parl Paper 3, 1919, pp9-10; SAOGS, *Statistical Register of South Australia – 1918-19: Part VI, Finance*, Parl Paper 3, 1919, pp20-21.

of Motor Bus Traffic. Through their report, the commissioners differentiated omnibus services according to those operating within and beyond the 'metropolitan area'. They recommended the Police Commissioner and Railways Commissioner should take responsibility for the authorisation of omnibus services 'within' and 'outside' of the 'metropolitan area' respectively.[15] The commissioners also recommended a Bill to Parliament which included a section relating to the establishment of a 'Metropolitan Road Fund'. The purpose of the fund was to defray the costs of reconstructing roads used by motor omnibuses within this area.[16] These discursive techniques and the practices recommended (such as the supply of road infrastructure and omnibus services) did not simply reflect the existence of the metropolitan area, but also actively constituted that entity. The 'metropolitan area' was not a self-evident area but that area was both employed by and defined through administrative processes and travel practices.

The increasing usage of the term 'metropolitan' marks a shift in the way the districts which surrounded Adelaide were positioned in relation to each other and the City itself. 'Metropolitan Adelaide' infers that the localities included within this area function together with the City of Adelaide as a single entity. As a consequence of this integration, vehicle movements in one part of the metropolitan area could be credited with impacting upon travel elsewhere in the locality. The area surrounding the City of Adelaide not only affected traffic within the City, but so too the conduct of travel within the City impacted upon the efficient and economic functioning of the metropolis and the industrial economy located within it. It could be inferred by commentators of the time that a mutual relationship existed between city and metropolis as characteristics and changes in the one were brought to bear on the other.

According to the 1947 Royal Commission on State Transport Services, the post-World War II expansion of the urban population and the urban industrial economy had prompted the inclusion of City Traffic within the Commissioner's brief.[17] The predictions of future growth were compounded by complaints from politicians, traffic police, the Adelaide City Council, and lobby groups (such as the RAA) of existing congestion within the City of Adelaide.[18] The 1947 Royal Commission was

[14] SRO: MTT, Agency Registration Sheet, GRG 22.
[15] SAP, *Royal Commission on Traffic Control: First Progress Report: Motor Bus Traffic*, Parl Paper 56, 1926, pIX; SAP, *Royal Commission on Traffic Control: Second Progress Report: Control of Road Freight and Passenger Services*, Parl Paper 56, 1927, ppXI, 2.
[16] SAP, *Traffic Within the City of Adelaide*, ppVII, XI.
[17] SAP, *Traffic Within the City of Adelaide*, p3.
[18] SRO: MTT, Press Cuttings, Vol. 9, 1945-48, GRG 22, Series 51, pp68,145-9.

significant in that it was only the second inquiry in South Australia to investigate 'Transport' and the first to subsume City movement within Transport.

Previous inquiries, whether Royal Commissions or Select Committees, had examined 'roads', 'motor vehicles', 'railways', 'tramways', and 'omnibuses'.[19] The different forms of travel included in these earlier studies were first brought together in 1926 under the umbrella of Traffic.[20] In 1938, passenger and freight traffic were included in the *Royal Commission on Transport*.[21] This latter inquiry drew different forms of travel together under the heading of transport, inscribing the rationale for movement as travelling between two points. It was not until the 1947 Royal Commission that street traffic was also included in the study of transport. Street traffic was subsumed within a transport conceptualisation of travel, and growth in population and industry were predicted to increase street movements, thereby threatening to create congestion. In order to secure the economical operation of the city and avoid disruptions in the exchange of people (and goods) across the urban environment (the metropolitan area), it was deemed necessary to understand the factors which both caused and influenced urban movement.

The remainder of this section examines the objectification of urban travel and the mechanisms and measures used in creating knowledge about this travel. The first part examines the different travellers who were included in the emerging studies of travel and the discursive techniques through which they were included and positioned in relation to one another. The second section discusses how these transport journeys were situated within the broader spatial context of the urban fact and how transport knowledge assisted in giving effect to the metropolitan area.

The City and Its Traffic

Traffic became a topic of increasing interest amongst Australian engineers through the 1940s. *The Australasian Engineer* reported on traffic problems and their proposed solutions in English and North American cities. Similar studies did not exist in South Australia, but when they were introduced it was under the auspices of the regional and local State. Two inquiries into urban travel were initiated in South Australia in the late

---

[19] SAP, *Royal Commission on Railway Construction: Report*, Parl Paper 22, 1875; SAP, *Select Committee Appointed to Report on the Adelaide and Suburban Tramways Bill*, Parl Paper 49, 1876; SAP, *Royal Commission on Railways: Report*, Parl Paper 33, 1903; SAP, *Royal Commission on Main Roads: Report*, Parl Paper 22, 1908; SAP, *Select Committee of the House of Assembly: Report on the Motor Vehicles Bill 1918*, Parl Paper 77, 1918; SAP, *Select Committee on the Motor Omnibus Bill: Report*, Parl Paper 51, 1925.
[20] SAP, *Control of Road Freight and Passenger Services*, p2.
[21] SAP, *Royal Commission on Transport: Report*, Parl Paper 20, 1938, p2.

1940s. The first, was the Royal Commission into State Transport Services, established in 1947, which, as explained above, included in its terms of reference an investigation of *Traffic Within the City of Adelaide*. The second, a traffic census, was conducted by Adelaide City Council in November 1947 '...as the result of the Council's decision to submit evidence before the Royal Commission on State Transport Services...'.[22]

The Royal Commission provided a site into which statistics, stories, and expert opinions (defined according to experience within transport agencies) about travel could be gathered, processed, and re-circulated. The Council's traffic census provided 'factual information' on traffic ('factual' comprising quantitative data or data that could be quantified).[23] Both of these inquiries situated the City of Adelaide as the centre, or heart, of the emergent metropolis. The functioning of its streets, operating as they did in a mutual relation with the surrounding metropolitan area, provided a site for the study of traffic movements. These inquiries were significant for the way in which they defined the nature of traffic within the Adelaide context and how they positioned travellers in relation to each other.

The Adelaide City Council carried out its traffic census as a means of teasing apart and knowing in detail the nature of the traffic which congested the City's streets. The Council's chief engineer implemented a standardised data collection technique used in both Sydney and Melbourne in the same year.[24] The technique involved a designated locality being 'cordoned' off and all vehicle operators entering or exiting the area being stopped and asked to respond either verbally respond to a series of questions or complete a question card.[25] In Adelaide, the city's surrounding belt of parklands served as the cordon and all vehicles (motorised and non-motorised) were stopped at the entry points into the city so the driver or rider could complete a question card about their journey.[26] This method of taking a traffic census not only incited particular people to speak as 'travellers' but simultaneously centred the driver or rider in the study of travel conduct. Vehicle passengers were enumerated but they, like pedestrians, were not questioned. The vehicle operator, it was assumed, could answer on behalf of all who travelled in the vehicle and in making this assumption control of the vehicle was readily linked with control over the journey.

---

[22] ACC, *Annual Report, 1947*, p11.
[23] ACC, *Annual Report, 1947*, p12.
[24] *Australasian Engineer*, 7 June 1947, p91; ACC, *Annual Report, 1947*, p12.
[25] Mitchell and Rapkin, p9.
[26] ACC, *Annual Report, 1947*, p11; *South Australian Motor*, August 1947, 26(8) p4.

The traffic census conducted by Council not only failed to interrogate pedestrians but entirely excluded pedestrian journeys from the traffic count. This exclusion was not a necessary feature of traffic studies, as demonstrated in the work of Mitchell and Rapkin,[27] but it remained common practice in South Australia. Numerous inquiries into urban travel including, the 1947 Royal Commission on State Transport Services, Highways and Local Government Department traffic surveys undertaken between the 1940s-60s, the 1957 Adelaide City Council Traffic Census, and research conducted on behalf of the Town Planning Committee in the late 1950s, continued to exclude walking as a form of travel and therefore from traffic and transport knowledge.[28] The *Report on the Metropolitan Area of Adelaide* produced by the Town Planning Committee in 1963 stated quite simply: 'Any journeys made on foot were excluded from the definition of a "trip"'.[29]

This exclusion was never explained but may have been readily rationalised in terms of the contribution pedestrians made to congestion. The reports on traffic studies such as the traffic census and the Royal Commission were filled with references to the 'volume' of traffic and 'capacity' of roads. The sheer physical size of vehicles meant they would necessarily take up more street space. Although pedestrians may have been numerous, they required far less physical space, consequently their contribution to traffic might be legitimately ignored. Un-acknowledged in regular traffic surveys, the journey on foot was made invisible in the travel routine of the modernising city.

The failure to acknowledge walking in the travel routine of the city was not only common practice in South Australia, but also it was in keeping with contemporary notions of modernisation. Leslie Schumer, an academic and member of the Transport Institute, explained in his 1955 text *Elements of Transport* that a society's standard of living and level of civilisation could be determined by the development of its 'ways and means' of transport.[30] Primitive societies, according to Schumer, were marked by their lack of wheeled transport, while modern societies had numerous and complex forms of transport. Schumer's reflections were the converse of claims made by

---

[27] Although pedestrians were not included in origin-destination studies, it was suggested that seperate studies of pedestrians could be undertaken and included in total traffic movements. Mitchell and Rapkin, p8.

[28] SAP, *Traffic Within the City of Adelaide*; SAP, *Highways and Local Government Department: Annual Report, 1947-48*, Parl Paper 37, p4; SAP, *Highways and Local Government Department: Annual Report, 1948-49*, Parl Paper 37, p7; SAP, *Highways and Local Government Department: Annual Report, 1952-53*, Parl Paper 37, p10; SAP, *Highways and Local Government Department: Annual Report, 1961-62*, Parl Paper 37, pp13-17; SRO: City of Adelaide, Traffic Survey – Report prepared by the City Engineer and Surveyor 1957, GRS 266.

[29] Town Planning Committee, *Report on the Metropolitan Area of Adelaide*, Government Printer, Adelaide, 1963, p83

[30] Schumer's work provided the basis of a first year subject in Transport Administration at the Melbourne Technical College introduced in 1953. LA Schumer, *The Elements of Transport*, Butterworth & Co, London, 1955, p1.

urbanists and economists 50 years earlier (discussed in Chapter Four) that economic well-being depended on urban specialisation, and this specialisation was itself enabled through technological changes in the means of travel. The links made by Schumer and others between transport and civilisation, urban specialisation and economic well-being, re-inscribed the converse case. That is, cities that failed to develop complex systems of travel but relied on so-called primitive means of travel (such as walking) could neither specialise nor prosper. Walking was effectively made irrelevant in studying, planning for, and guarding against congestion in a modern, prosperous city.

Transport studies of the 1950s have been roundly criticised for their exclusion of pedestrians and this oversight has been subsequently addressed.[31] However, pedestrians were never entirely overlooked. The Highways and Local Government Department observed pedestrian behaviour in *ad hoc* 'special surveys'. In contrast to vehicular traffic studies, the data gathering techniques used in pedestrian surveys were not discussed in the Department's annual reports and few if any comments were made about the findings of these studies. The aim of these surveys was not to determine the volume of foot traffic or the capacity of pedestrian ways. Rather, they were used to determine either the need for pedestrian crossings on particular streets or the extent to which pedestrians used street crossing facilities correctly (children generally scored much better on this account than adults).[32] The pedestrian, when acknowledged, was observed in terms of their deviance, either from the 'normal' flow of traffic, that is in crossing the traffic, or in their observance of traffic regulations.

The issue, it seems, is not so much the exclusion of journeys by foot, but how those journeys have been included in the study of travel and the consequent positioning of pedestrians in relation to other travellers. The pedestrian came under scrutiny not as a 'normal' traveller but for the degree of deviation from the travel norm. This investigation of deviance positioned pedestrians on the margins of transport knowledge. The discursive excision of pedestrians from routine travel studies allowed the contestation of street space to be constructed as a conflict between vehicle users. Traffic came to mean vehicular traffic as studies focused upon the vehicle operator and all that might enable or disrupt the flow of cars, trucks, buses, and bicycles through the urban environment.

---

[31] See for example: K Hamilton & L Jenkins, 'Why women and travel?', in M Grieco, L Pickup & R Whipp (eds), *Gender, Transport and Employment*, Avebury, Aldershot, 1989, p37; Hugh Stretton cited in L Sandercock, *Cities for Sale*, Melbourne University Press, Carlton, 1977, p128.

Anecdotes, letters, and comments published in newspapers and magazines suggest cyclists and their bicycles or tricycles proliferated upon Adelaide's streets in the first half of the twentieth century.[33] Over time, bicycles themselves gradually disappeared both from the post-war studies of urban travel and the city streets. In contrast to motor vehicles, no routine mechanisms existed for the collection of data on bicycles. Statistics on motor vehicles were created in part through the yearly bureaucratic routine of registering motor vehicles and these figures were listed in the annual reports of the Highways and Local Government Department.[34] Similar procedures did not exist for bicycles and consequently statistics could not be created, analysed, or compared about bicycle ownership and usage. Increases in motor vehicle ownership were tracked from year to year but the rising ownership of bicycles was based on anecdotes and casual observation. The only way information about bicycles was captured was through traffic censuses and surveys.

Bicycles were included in the Adelaide City Council's 1947 and 1957 traffic surveys. In the first survey, bicycles constituted 26% of vehicles travelling into and out of the city but by 1957 this figure had dropped to 4% of total vehicles entering and leaving the city.[35] This decline does not necessarily mean an overall drop in the usage of bicycles, especially given the gradual shift in industrial and retail activity to suburban locations. At best, it indicates that cycling had declined as a means of transport into the city. Cyclists, although included in the statistical summaries of the Royal Commission on State Transport Services, were not separated out for comment within the body of the Commission's report.[36] By 1957, cyclists were also being written out of the City Council's report on the traffic census:

> By omitting bicycles and horse-drawn vehicles, it is established that motor traffic has increased by 145% to 2.45 times that in 1947...here again a more realistic picture is obtained if bicycles are neglected.[37]

[32] SAP, *Highways and Local Government Department: Annual Report, 1960-61*, Parl Paper 37, p15; SAP, *Highways and Local Government Department: Annual Report, 1961-62*, Parl Paper 37, pp13-14 ; SAP, *Highways and Local Government Department: Annual Report, 1962-63*, Parl Paper 37, pp15-16.

[33] SRO: MTT Press Cuttings, Vol. 10, 1948-52, GRG 22, Series 51, p24.

[34] Motor vehicle statistics were listed in the *Annual Reports* on an *ad hoc* basis through the 1920s-40s, then annually from 1954 onward. See for example: SAP, *Highways and Local Government Department: Annual Report, 1927-28*, Parl Paper 37, p4; SAP, *Highways and Local Government Department: Annual Report, 1945-46*, Parl Paper 37, p8; SAP, *Highways and Local Government Department: Annual Report, 1949-50*, Parl Paper 37, p7; SAP, *Highways and Local Government Department: Annual Report, 1952-53*, Parl Paper 37, p9; SAP, *Highways and Local Government Department: Annual Report, 1954-55*, Parl Paper 37, p16.

[35] SRO: Traffic Survey - Report prepared by the City Engineer and Surveyor 1957, GRS 266, p8.

[36] SAP, *Traffic Within the City of Adelaide*.

[37] SRO: Traffic Survey - Report prepared by the City Engineer and Surveyor 1957, GRS 266, p9.

These statements exclude the bicycle as a constituent part of the urban travel routine. Rather, the presence of bicycles is represented as a 'distortion' of that routine. This form of travel finally goes unreported in the traffic surveys undertaken between August and December of 1958 by the Town Planning Committee.[38]

The status of the cyclist was, at best, ambiguous and although they attracted occasional comment in newspapers and parliamentary reports, they were excluded from routine travel studies of the Highways and Local Government Department.[39] Inquiries into cycling were undertaken occasionally by the Department but these were made separate from traffic surveys.[40] Further, the aim, methodology, and findings of these surveys, like pedestrian surveys, were not explicated or even commented upon in the Department's annual reports. The bicycle was no longer included as a modern mode of travel but cyclists, like pedestrians, appeared as impinging upon rather than constituting urban traffic.

As pedestrians and cyclists were excluded from studies of urban traffic, the subject positioned at the centre of the emergent discourse on travel was a traveller who used motorised travel. The contestation over street space was closed around an opposition between motor vehicles and trams. The tramways ran along the centre of the streets and this space was both ambiguous and vigorously contested. Tram lines were identified as the 'tram right of way', so that although they were located in the street and were considered to impact on the use of the street, they were not an integral part of the street. This separation of the street and tramway was inscribed through the statutory division of authority over these spaces. The MTT had responsibility for the construction, maintenance, and regulation of vehicles, drivers, and travellers on the tram right-of-way.[41] The remainder of the street was the responsibility of the local council, with street travellers being regulated under various pieces of legislation including the Municipal Corporations Act, Motor Vehicles Act and, from the mid-1930s, the Road Traffic Act.[42]

---

[38] Town Planning Committee, *Report on the Metropolitan Area of Adelaide*, pp83-99.

[39] SRO: MTT, Press Cuttings, Vol. 10, 1948-52, GRG 22, Series 51, pp26, 58. See vehicle statistics in SAP, *Highways and Local Government Department: Annual Report 1949-50*, p7; SAP, *Highways and Local Government Department: Annual Report, 1952-53*, p9; SAP, *Highways and Local Government Department: Annual Report 1954-55*, p16.

[40] SAP, *Highways and Local Government Department: Annual Report 1960-61*, p15.

[41] South Australia, 'The Municipal Tramways Trust Act, 1906', *Acts of the Parliament of South Australia*, No. 913, 1906, p20.

[42] SRO: MTT, Press Cuttings Vol. 9, 1945-48, GRG 22, Series 51, pp144-46. See also: South Australia, 'The Municipal Corporations Act, 1890', *Acts of the Parliament of South Australia*, No 497; South Australia, 'The Motor Traffic Regulation Act, 1904', *Acts of the Parliament of South Australia*, No 866, 1904; South Australia, 'The Municipal Tramways Trust Act', *Acts of the Parliament of South Australia*, No 913, 1906; South Australia, 'The Motor Vehicles Act, 1907', *Acts of the Parliament of South Australia*, No 938, 1907; South Australia, 'The Local Government Act, 1910', *Acts of the Parliament of South Australia*, No 1033, 1910; South Australia, 'The

The distinction between tramway and street was maintained in the Adelaide City Council's traffic census. Tram journeys were included in the census at the request of the MTT but the information collected was treated differently from other street traffic data. In contrast to motor vehicles, the number of journeys made by tram passengers was both recorded and reported, but the number of tramway vehicles and the routes they travelled along, if recorded, were not reported in the Council's census report. The passenger information aggregated tram vehicle occupants which allowed for comparisons between travellers using different modes of travel. However, the comparability of data was limited. For example, it was possible to analyse and compare the average number of passengers travelling in motor vehicles but not tram vehicles. Nor was it possible to compare the spatial distribution of trams and tram passengers in relation to motor vehicles and motor vehicle passengers. Tram travellers were differentiated from other travellers but they were not differentiated from each other. For the purposes of the Adelaide City Council, tram passengers remained an amorphous mass.

The Commissioners appointed to the 1947 Royal Commission also included the tramways in their investigations but trams were not scrutinised for their spatial contribution to traffic congestion. Rather, the tram and tram passengers were observed in order to establish the contribution they made to delaying other street traffic.[43] Time was used to determine the efficiency of traffic movements as the 1947 Royal Commission reported on all those instances where time might be wasted. Accurate means of measuring travelling times and traffic delays were not yet available,[44] but the Commissioners investigated all those sites where the operating practices of trams might reduce the speed of travel or stop traffic altogether. They sought details in their inquiry on the number of tram routes which used King William Street: the number of trams travelling along the street in a given day and at specific times; the number and location of stops; and, most importantly, the number of intersections where trams made left and right turns.[45] The introduction of automatic traffic signals allowed vehicles to travel uninterrupted through intersections, except in those places where trams turned left or right.[46] Data collected on the stopping places and turning points of

District Councils Act, 1914', *Acts of the Parliament of South Australia*, No 1182, 1914; South Australia, 'Motor Vehicles Act, 1921', *Acts of the Parliament of South Australia*, No 1480, 1921; South Australia, 'Road Traffic Act, 1934', *Acts of the Parliament of South Australia*, No 2183, 1934.
[43] SRO: MTT, Press Cuttings: Vol. 9, 1945-48, GRG 22, Series 51, p62; SRO: MTT, Press Cuttings, Vol. 10, 1948-52, GRG 22, Series 51, p126.
[44] Traffic delay meters were first discussed in the *Highways and Local Government Department Annual Reports* in the late 1950s. SAP, *Highways and Local Government Department: Annual Report 1958-59*, 1959, p15.
[45] SAP, *Traffic Within the City of Adelaide*, pp6-7.
[46] SRO: MTT, Press Cuttings, Vol. 9, 1945-48, GRG 22, Series 51, pp145,148-49.

trams was used to calculate the overall number of stops and turns made in an entire year. The Commissioners found that 200,000 turns were made annually from North Terrace onto King William Street alone, and imagination could determine the total time taken, or 'wasted', for this number of turns.[47]

In reporting their findings, the Commissioners used terms such as delay, obstruction, dead-end, and delaying effect, to indicate how the tram might constitute a traffic problem.[48] Overall, the problems caused by the tram were found to be 'not yet great'. However, with their halting, faltering movements, travelling against and across rather than with the general flow, trams would be a significant source of congestion in the future. Further, it was claimed, the practice of terminating tram services in the main streets '...undoubtedly cause some delay and congestions [sic] which react upon traffic within King William Street'.[49] The tram not only used up too much time in making a journey, but also it was wasteful of the time of (other) road users. The tram was positioned as both source and symbol of congestion. The tram still carried the vast majority of travellers into and out of the City and it could accomplish these journeys more quickly than cyclists or pedestrians. However, it did not have the same capacity for uninterrupted travel as the motor vehicle. Stops and delays were an inherent characteristic of the tram journey and, consequently, it could be called into question as an efficient means of transport.

The Adelaide City Council's concern for efficient travel was essentially a concern for the continuity and regularity of vehicle movements. As a consequence, the data collected by the Council on street traffic, as opposed to tramway traffic, focused on the vehicles rather than the passengers. The Council's census takers recorded the type and location of each vehicle as well as the time the vehicle entered or departed the City.[50] This data lent itself to different types of analysis. In the 1947 census, it was found that 45.8% of all vehicles entering and leaving the City were automobiles; this figure had risen to 68.1% in 1957.[51] The census data was used to calculate the proportion of vehicles entering the city from different directions and along different streets. It was also analysed to determine the daily fluctuations of vehicle movements throughout the City and along specific routes. The data could be disaggregated to find the mix of vehicles (proportions of buses, bikes, taxis, trucks, automobiles) travelling along particular routes and whether these proportions varied throughout the day.

[47] SAP, *Traffic Within the City of Adelaide*, p7.
[48] SAP, *Traffic Within the City of Adelaide*, pp6-7.
[49] SAP, *Traffic Within the City of Adelaide*, p7.
[50] ACC, *Annual Report, 1947*, p12.
[51] SRO: Traffic Survey – Report prepared by the City Engineer and Surveyor 1957, GRS 266, p8.

Together, this information could be used to compare the volume and type of traffic against the carrying capacity of the road[52] and to calculate the appropriate space requirements to ensure the continuous movement of City vehicles.

Although the Council was explicitly concerned with vehicles rather than passengers, the number of occupants per motor vehicle informed their concern for efficient movement. Analysis of the traffic census data showed an average of 1.6 persons travelling in each vehicle.[53] The match between vehicle and individual could never be precise but the statistics produced by Council, and the Highways and Local Government Department, anticipated a perfect match. The rising population and the narrow ratio of vehicles to occupants fuelled predictions of widespread congestion.

The Royal Commission into State Transport Services drew on the council's census data to investigate the movement of vehicles within the city. The Commissioner's, like the City Engineer, scrutinised motor vehicles with a concern for the (dis)continuities and (ir)regularities of vehicle flows through the city. The Commissioners examined different locations throughout the City to identify potential sites of congestion. Motor vehicle movements were framed through ocean and river metaphors, terms such as inlet, outlet, flow, current, channel, island, and archipelago being used to describe the movement, or desirable movement, of these vehicles within and through the city.[54] It was the motor vehicle that was subjected to delays, especially those caused by the tram – the motor vehicle was positioned as that vehicle which should flow while the tram was that which impeded the flow.

As tramway operations were the principal source of congestion, the 1947 Royal Commission recommended a series of measures to ameliorate the problem. Though the tramways continued to carry the majority of people travelling to the city by vehicle,[55] and though the problem of congestion was considered 'not serious', elaborate and expensive proposals were put forward to re-route the tramways through the city's back streets so they did not interfere with 'through' traffic at the King William Street-North Terrace intersection.[56] Extensive reorganisation of the tramways affecting the daily journeys of more than a hundred thousand people were canvassed

---

[52] Carrying capacity was calculated according to the number of lanes and the rate of traffic movement through those lanes. See R Nicholas, 'Traffic Capacities and Highway Planning', *Australasian Engineer*, 7 November 1946, p157 & p159.

[53] SAP, *Highways and Local Government Department: Annual Report, 1952-53*, p10; SRO: Traffic Survey - Report prepared by the City Engineer and Surveyor 1957, GRS 266, p1.

[54] SAP, *Traffic Within the City of Adelaide*, pp4-6.

[55] The Tramways carried over 170,000 passengers to and from the city daily compared to 130,000 carried by all other street vehicles. ACC, *Annual Report, 1947*, p17.

[56] SAP, *Traffic Within the City of Adelaide*, pp9-12.

by the Commissioners in order to overcome what was regarded as a relatively minor problem.

The commissioners explained their recommendations, arguing:

> The principle of the greatest good for the greatest number cannot be entirely disregarded, but that can only be applied on broad lines in such a case as the present.[57]

The Commissioners had to secure the efficient movement of the urban population into the future. The increase in population and industrial activity, together with rising motor vehicle ownership, threatened the economical operation of the journey and the economical operation of the urban environment. Although motor vehicle travel was not yet the travel norm, it was an economical norm. The mechanisms through which knowledge of travel was created served to foreground the motor vehicle and centre the motorist in travel studies. The Commissioners sought to secure the conditions which ensured the economical conduct of motor vehicle journeys and to this end they recommended significant alterations to street-spaces, building lines, traffic management practices, and re-routing of tram lines.[58] The Royal Commission's recommendations were never implemented and the tramways were dismantled through the 1950s, an issue that will be returned to later in the chapter.

The Mayor of St Peters, Mayor Meller, claimed the RAA and National Safety Council had engineered the agitation against the tramways in the interests of motorists.[59] The Mayor's claims were well-founded given the RAA had long disputed the right of trams to run along, and tram infrastructure (such as tram standards) to be placed upon, the centre of the street.[60] However, the lobbying against the tramways should not be reduced to the agitation of a self-serving elite. The claims of the RAA were in line with the logic of the economical journey. That is, if the role of the journey was to link points A and B across the urban environment then the journey should be accomplished as quickly and efficiently as possible. The motor vehicle was faster than walking and cycling, and it could, under the right conditions, transport its occupants for the entire journey without stopping. The tram was obliged to stop to allow passengers to board and alight. The tram, in Adelaide at this moment, could not compete with the motor vehicle in terms of the economical use of time.

---

[57] SAP, *Traffic Within the City of Adelaide*, p9.
[58] SAP, *Traffic Within the City of Adelaide*, p15.
[59] SRO: MTT, Press Cuttings, Vol. 10, 1948-52, GRG 22, Series 51, p2.
[60] *SA Motor*, February 1914, 2(2), p38;

The knowledge produced about urban travel in the 20 years immediately following World War II was enabled by the pre-war spatialisation and disciplining of travellers to an order based on speed and safety. The post-war surveys provided for an elaboration of knowledge about urban travel as urban experts sought to secure the efficient conduct of the journey. Those modes of travel deemed inefficient were readily excluded from routine transport studies but they were not ignored altogether. These modes were not simply inefficient, but they were positioned as deviant in that the studies of journeys by foot or bicycle focused upon the way they digressed from the travel norms. Particular practices of travel, like particular modes of travel, were also constituted as deviant within discourses on transport and its inherent logic of the economic journey. The following section explores the specific practices of travel included in/excluded from the emerging studies of transport and examines the normalising and spatialising effects of that knowledge.

The Metropolis: The Science and Government of Travel

The Adelaide City Council's Chief Engineer identified population, vehicle ownership, and vehicle usage as key factors which influenced traffic conditions within the City of Adelaide.[61] The incidence of these phenomena both within and beyond the City of Adelaide, he argued, had effects on the conduct of travel within the city. The area around the city which he considered to impact most profoundly upon city traffic was the 'metropolitan area'. It was necessary to look outside of the city in order to comprehend its traffic. The Highways Commissioner obviously concurred with the Chief Engineer when he requested that the Council include two new questions in its traffic census concerning 'when' and 'where' journeys were made. These questions set city traffic within the broader spatial and temporal context of the metropolis as traffic theorists sought to explain why travel occurred and how it was generated.

The traffic census was not a new data gathering instrument. It had been used through the nineteenth and early twentieth century to determine the type and incidence of vehicles travelling upon different roads. In the post World War II years, the census was revised into different formats to serve different data gathering functions. As indicated in the section above, the 1947 and 1957 traffic censuses recorded the times that vehicles entered and departed the city. This information could then be aggregated and analysed by the City's engineers to determine traffic flows, calculate road capacity, and determine those streets in which traffic volumes threatened to exceed the road capacity. The census questions requested by the Highway's Commissioner

---

[61] SRO: Traffic Survey - Report prepared by the City Engineer and Surveyor 1957, GRS 266 p16.

sought information on the extent of journeys in terms of the distances they covered and the routes they traversed.

The origin and destination questions included in the Council's census provided data on where vehicle journeys originated and where they terminated. This data could be used to trace the movement of vehicle operators across the landscape from the beginning to the end point of the journey. Urban travel was no longer a journey between two abstracted localities; now it was possible to identify precisely which points people transported themselves between. In observing origins and destinations it was possible to close the study of urban travel around practices of transport. The origin-destination survey brought the 'trip' into effect and facilitated the proliferation of transport knowledge. This setting out of boundaries was echoed a decade later in the Report on the Metropolitan Area of Adelaide where, 'It was considered that a trip was made whenever a person or vehicle left one place and reached *another*'.[62] In naming the limits of the journey and thinking about the journey within these limits, transport researchers could begin to pose new questions and imagine new ways of calculating the conduct of urban travel.

It became possible to construct particular patterns of movement through the urban environment and to predict and elaborate upon the factors that generated movement. Schumer argued in his 1950s text:

> ...transport is not an end in itself but a means to many ends...Primitive
> man did not travel on foot or move his trifling personal possessions
> without having some purpose in mind, and the complexity of modern
> life provides endless reasons for movements of people and goods.[63]

Travel, according to Schumer, always had an intent and the modern traffic survey – with its origin/destination questions - produced that intent as reaching a destination. This intent has been translated into the claim that travel is a 'derived demand' as David Hensher claimed in 1976:

> Whenever the nature of travel is discussed the notion of derived demand
> is introduced to emphasise the point that travel is, with few exceptions,
> required not for its own sake but as a means to an end.[64]

The journey, in Hensher's account, is derived from the activities it serves to connect and it exists by virtue of these non-travel activities. This conceptualisation of travel

---

[62] Town Planning Committee, *Report on the Metropolitan Area of Adelaide*, p83.
[63] Schumer, *The Elements of Transport*, p1.
[64] D Hensher, 'The structure of journeys and the nature of travel patterns', *Environment and Planning A*, 8(6), 1976, p655.

dismisses all those journeys which do not have an identifiable beginning and end point. It also subsumes all interpretations and practices of travel within the intent of accessing particular points.

The origin and destination of the journey were argued to derive from both a locality and a land use. The locality specified the area while the land use specified the activity, either within the locality or within a particular site, such as residential, industrial, commercial, retail, entertainment, and education.[65] These 'land uses' effectively designate the social relations perceived to dominate at a given site, for example familial relations pre-dominated in residential land uses, employer/employee relations within industrial sites, and teacher/pupil relations within schools. These land uses have been used by transport planners to stand in for the purpose of, or motivation for, the journey.

In reducing the question of 'why people moved' to a series of origins and destinations, it became possible to observe the activities at these locations and measure the amount of movement they 'generated'. Trip generation comprised two components: trip production - the land use activities where the decision to make a trip was taken and the journey initiated, for example, the home; and trip attraction - the land use activities that attracted journeys, for example, workplaces, shopping centres, and education facilities.[66] These sites could be scrutinised for, and sorted according to, the number of 'trips' they produced or attracted and this data analysed in relation to the size, or intensity, of the land use activity. For example, large factories or shopping centres attracted more movement than smaller ones.

The distance and route taken between trip producing and trip attracting sites were also examined to determine their relationship to the nature and intensity of land uses. The 'friction of distance' operated to reduce the attractiveness of a destination, or activity, as distance from it increased. Travel surveys captured information about travel within specific contexts and this served as the base data for forecasting future changes in travel. Physics provided the metaphors for the emergent field of transport in terms of 'gravity models'. This concept, developed in the 1920s to describe and predict retail

---

[65] Mitchell & Rapkin, p13.
[66] Mitchell & Rapkin's work in the early 1950s was substantially elaborated in the 1970s. See for example: M Bruton, *Introduction to Transportation Planning*, Hutchinson & Co., London, 1970; D Hensher (ed), *Urban Travel Choice and Demand Modelling*, Australian Road Research Board, Canberra, 1974.

activity and migration, was, by the late 1950s, being introduced into studies of urban travel.[67]

The origin-destination data collected in the Adelaide City Council's traffic censuses could be aggregated into 'total movements' and then disaggregated according to the proportion of movements which had the city as either their origin or destination, and those which passed through the city. All of these journeys could be further disaggregated to determine the type of vehicles used and the proportion of journeys that were commenced or completed within specified localities. Certain roads, such as those from the West and North West, were found to have a greater proportion of freight vehicles while others, from the South and East, had a majority of private motor cars. This data could be instrumentalised by council to intervene in the conduct of journeys, discouraging some, such as through traffic, while facilitating and encouraging others through street widening programs, parking provision, and regulatory devices.

The Council's censuses provided data on vehicle movements caught within the City's net; however, they said nothing of those movements outside of the city but within the 'built up areas'. The Highways and Local Government Department and the Town Planning Committee utilised origin-destination surveys from the late 1950s to observe movement into, across, and from the 'metropolitan area'. This data enabled the differentiation of travellers according to the localities in which they commenced and completed their journeys on a metropolitan-wide scale. Travellers could also be aggregated to determine the frequency and proportion of journeys arising from or ending in specified localities, and this information could in turn be translated into traffic flow diagrams.[68] Patterns of movement were 'discovered' as roads throughout the 'metropolitan area' were marked according to the number of vehicles travelling along them daily and hourly.

The analysis of motor traffic data inscribed the 'metropolitan area' as an integrated area through mapping the intensity and regularities of (transport related) travel within this specific spatial area. The data gathered on metropolitan transport could be ranked from minimum to maximum distances traversed, or averaged to find the 'normal'

---

[67] For an overview of the development of gravity models see, A Sen & T Smith, *Gravity Models of Spatial Interaction Behaviour*, Springer, Berlin, 1995. For their application in South Australia see: Town Planning Committee, *Report on the Metropolitan Area of Adelaide*; De Leuw Cather and Company, *Metropolitan Adelaide Transportation Study*, MATS Joint Steering Committee, Adelaide, 1968.

[68] SAP, *Highways and Local Government Department: Annual Report, 1955-56*, p26; SRO: Traffic Survey - Report prepared by the City Engineer and Surveyor 1957, GRS 266, Appendix; Town Planning Committee, *Report on the Metropolitan Area of Adelaide*, pp86-96.

length of each journey. The journeys included in routine origin-destination surveys, carried out by the Highways and Local Government Department, were those made by motor vehicle, and therefore served to normalise the distances traversed by the motor vehicle. The process of mapping traffic movement brought into effect a concept of metropolitan traffic flows and enabled intervention in and regulation of these flows. These traffic flows constituted the daily transport routine of the metropolitan area. In mapping movement between localities, the metropolitan area and the spatial limits of this entity were also brought into effect.

Transport knowledge could be used to devise and implement practices which would guide the conduct of the economical traveller. The Highways Department created a Traffic Engineering Section to produce knowledge about and manage the economical flow of traffic through the metropolitan area.[69] As the metropolitan area was brought into effect, individual councils were positioned within and subordinated to the practices necessary to secure efficient traffic flows across that area. Councils were increasingly recommended (or required) to seek advice (or permission) from the Highways Commissioner in relation to road construction and traffic regulation devices. Although local roads remained the preserve of individual councils, the Highways Commissioner played a greater role in the design and construction of these minor roads as well as the design of sites such as petrol stations and shopping centres which involved vehicles constantly entering from and exiting onto the roadway.[70]

Street widening programs, commenced in the late 1930s and halted during the war, were accelerated in the post-war period. The Highways Department itself began a program of buying land along main roads in anticipation of street widening, while the Commissioner requested that councils introduce by-laws increasing the set back of buildings to enable street widening at a future time.[71] Town planning legislation was amended in 1955, enabling councils to refuse subdivisions where roads could not be conveniently connected to already established adjoining subdivisions.[72] By 1960, councils were also required to seek the approval of the Highways Commissioner before installing traffic regulation devices such as traffic lights, while roundabouts had to be of a uniform design.[73] The concentration of decision making in relation to road construction and maintenance enabled a certain uniformity in road design,

[69] SAP, *Highways and Local Government Department: Annual Report, 1957-58*, p16.
[70] SAP, *Highways and Local Government Department: Annual Report, 1960-61*, pp15-16.
[71] SAP, *Highways and Local Government Department: Annual Report, 1946-47*, p6.
[72] SAP, *Highways and Local Government Department: Annual Report, 1955-56*, p12.
[73] SAP, *Highways and Local Government Department: Annual Report 1959-60*, p15.

regulation, and construction standards which facilitated travel across the city and the metropolitan area.

The conduct of travel began to be orchestrated on a metropolitan-wide basis. The installation of traffic lights was an important means by which the passage of traffic through the metropolitan area could be regulated. The effectiveness of this signal system relied upon the travellers' ability to comprehend the signals and regulate their behaviours according to those signals. Automatic street traffic lights were first introduced into the City of Adelaide in 1937.[74] Early model traffic signals operated on a fixed time cycle which ensured that all vehicular traffic was accommodated in its passage through the intersection.[75] That is, all vehicles travelling in different directions had an equal turn to cross the intersection. Automatic street traffic lights began to be replaced with Vehicle Actuated Traffic Lights in 1954.[76]

According to Schomaker, this second generation of traffic lights effected a breakthrough in traffic management as they did not simply accommodate traffic but regulated movement through reference to the vehicles on the road.[77] Vehicle Actuated Traffic Lights acknowledged both the numbers of vehicles travelling in each direction and changes in traffic volumes at different times of the day. The light cycle automatically adjusted according to the volume of traffic registered along each of the intersecting roads. Motorists activated the change in light signal. Motorists travelling on heavily trafficked roads benefited from a longer traffic signal cycle but were subject to the possibility of congestion. In changing to lightly trafficked roads, vehicles would not be delayed by congestion but had a shorter light signal. As more vehicles moved onto lightly trafficked roads the traffic light cycle would become longer, eventually evening out with intersecting roads. The motorist participated with the traffic engineer in creating traffic flows through the urban environment. The engineer determined the appropriate light cycle length for different traffic volumes, while the motorist, in choosing a route of travel, determined volume and flow of traffic along the road. The operation of these lights echoed the economic principles of the market. The individual choices made by the motorist, like their economic choices as producers and consumers, would ultimately benefit the economical operation of the urban environment and the market in urban travel.

---

[74] ACC, *Annual Report 1936-37*, pp10-13.
[75] GE Schomaker, ' "Electro-matic" Vehicle-Actuated Traffic Control', *Australasian Engineer*, 7 February 1934, pp16,25-28; Author not Stated, 'Modern Traffic Control', *Australasian Engineer*, 7 September 1937, pp18-20.
[76] ACC, *Annual Report 1954-55*, p22.
[77] Schomaker, pp25,27; *Australasian Engineer*, 7 September 1937, p18.

The traffic engineer not only sought to guide the traveller in the economical conduct of their journeys, but also secured the conditions for the operation of the market in travel. The motorist was the traveller targeted by the traffic engineer. The engineer did not dictate or determine the motorist's movement through the urban environment so much as structured the motorist's field of action. In assuming the subject position of the motorist, travellers not only regulated themselves according to this subjectivity but, drawing on Foucault, also subjugated themselves within the regulatory framework established by the road traffic engineer. Motorists were rewarded in their subjection through their privileged use of the road. The priority accorded to motorists in moving along the street ensured their journeys were relatively unimpeded compared to other travellers. This priority in movement has been established within the discourse on transport as freedom of movement. The motorist has been drawn into his or her own self-regulation through the promise of this freedom.

Traffic management practices elaborated through the emergent discourse on transport relied on the traveller's own self-regulation according to the messages received from street signs, line markings, and traffic signals. The mechanisms through which the motorist was targeted by transport agencies ('within' and 'beyond' the State) such as the Highways Department and Royal Automobile Association contrasts markedly with the relation between the tram traveller and the Municipal Tramways Trust. It has been possible to construct the traffic engineer as simply providing the conditions within which people make travel choices, while the providers of transport services (tramways, railways, buses) are represented as determining travel practices. The discussion now turns to a closer investigation of the relationship between the State, the subject, domination, and freedom.

Securing the Free Movement of Free Individuals

As outlined in Chapter Two, transport theorists have identified the State as the locus of power. Power is understood as being concentrated within, facilitated by, or legitimated through this site. Researchers have drawn on different theoretical traditions to explain the role of, or implicate, the State in the decline or demise of particular travel practices, such as journeys by railway, tramway, and bus. In liberal discourse, the State can be viewed as facilitating the desires of the majority of the population by supplying motor vehicle infrastructure rather than tram, rail, and bus services. Neo-Marxist and modernist feminist theoretical frames can be used to argue that the State supplies or legitimates the supply of transport services and infrastructure in the interests of maintaining capitalist or patriarchal social relations. In each of these

accounts, the State has power and uses this power to facilitate or prohibit the actions of individuals.

The individual in these particular accounts is one whose freedom exists only outside of and beyond the exercise of power. Freedom is opposed to the operation of power and the individual cannot be free in the presence of power. In contrast to this, and following Foucault, it may be argued that freedom itself is established within discourse and consequently does not exist outside of the operation of power. This claim is not an attempt to refute people's experience of freedom. It is to argue that freedom is not an absence of power. Rather, it is through the exercise of power that practices, such as those included in travel and transport, can be objectified. Further, it is through the production of knowledge about travel that researchers determine threats to freedom of movement and, consequently, what constitutes such freedom.

In this section, I examine how the relation between the State and the individual, power and freedom were being constituted within early post-war (roughly 1945-1965) discourses on urban travel. These categories are explored through the discussions over the Municipal Tramways Trust and the Highways Department in post-war Adelaide. The main texts drawn upon in this discussion include the *Report of the 1947 Royal Commission into State Transport Services*, the *Report of the Inquiry into the MTT*, and the emergent academic studies on travel demand modelling. The analysis focuses on how specific practices were constituted as an abuse of power and the relationship thus invoked between agencies of the State and the individual travellers they targeted. The discussion then turns to examine how the individual and freedom of the individual have been discursively constituted within transport knowledge. It is argued that the construction of the MTT as imposing on individual freedom combined with the particular discursive constitution of travel freedom assisted in the demise of tram travel and the tramways within the South Australian context.

Regulation and Domination

As indicated above, the recommendation made by the 1947 Royal Commission to re-route tramways was never acted upon. Instead, the trams were removed altogether. On the basis of financial losses in two consecutive years and frequent tram fare increases, an inquiry was launched into the operation of the Municipal Tramways Trust

(MTT).[78] The reports produced through this inquiry found several reasons for the declining financial position of the MTT. Chief amongst these was the tramways 'lack of modernity', modernity being used here in relation to age, efficiency, and the use of expertise.

Everything about the tramways was found to be obsolete. Management practices, accounting procedures, industrial relations, operations, and workshops through to the very vehicles themselves were outdated. The Trust's accounting methods did not incorporate recent developments in the field of accounting and, as a consequence, procedures were duplicated, threatening to magnify clerical and transcription errors.[79] Industrial agreements, based as they were on negotiated agreements between the MTT and the Australian Tramways and Motor Omnibus Employees Association rather than awards of the Court, were found to increase labour costs beyond those of other, similar enterprises.[80] Maintenance procedures made for inefficient use of staff, while operations procedures had led to overstaffing.[81] Further, war-time improvisations in vehicles, vehicle use, and tram lines meant rolling stock and infrastructure was expensive to maintain and in need of replacement. War-time economies were associated in the post-war era with inefficiency and lack of forward planning.[82] Overall, the financial failing of the MTT was due to some failing within every aspect of the agency.

However, and perhaps most importantly, the financial viability of tramway services was said to rely '...to a major degree on the method of control under which it is operating'.[83] The policy approach and decision making procedures within the MTT were not conducive to its on-going financial viability within a post-war world.[84] The MTT's Board comprised eight members, two of whom were appointed by the governor with the other six being elected by the MTT's member municipalities.[85] The municipality representatives were usually councillors themselves and this left the Board open to claims that extension of services was based on the demands of individual councillors and their constituents rather than economic analysis and

[78] SAP, *Committee Appointed to Report on the Municipal Tramways Trust Adelaide: Interim Report,* Parl Paper 22, 1952, p6; SRO: MTT, Press Cuttings, Vol. 10, 1948-52, GRG 22, Series 51, pp62-63,118; 'Editorial', *Advertiser,* 25 May 1950, p3.
[79] SAP, *Interim Report on the Municipal Tramways Trust Adelaide,* p12.
[80] SAP, *Interim Report on the Municipal Tramways Trust Adelaide,* p17.
[81] SAP, *Interim Report on the Municipal Tramways Trust Adelaide,* pp13-14.
[82] SAP, *Interim Report on the Municipal Tramways Trust Adelaide,* pp15-16.
[83] SAP, *Interim Report on the Municipal Tramways Trust Adelaide,* p6.
[84] SAP, *Interim Report on the Municipal Tramways Trust Adelaide,* p8.
[85] SAP, *Royal Commission on State Transport Services: Final Report,* Parl Paper 17, 1951b, p31.

forward planning.[86] Most importantly, the Board members were found to lack expertise in the operation and administration of tramway services. This shortcoming meant that the General Manager determined the goals of the MTT and, according to the Committee of Inquiry, 'No manager, however capable, is infallible, and it does appear that the Trust leaned too much on its general manager in the matter of formulating policy and in arriving at major decisions'.[87] A modern enterprise was characterised as one in which Board members were selected for their expertise and decisions were made on the basis of the most up-to-date knowledge.

The Board of the MTT, or more precisely its General Manager - Sir William Goodman, was represented as an authority unto itself, responsible to no-one and imposing its decisions on the wider community. This characterisation of the MTT's Board was elaborated to include the entire organisation, as issues ranging from traffic regulations and fare increases to funding were discussed in the newspapers.[88] Soon after the end of the war, widespread strikes in the coal industry caused disruptions to power supplies across Australia's eastern states as well as South Australia. The Operations Section of the MTT was frequently forced to reschedule or halt tram services altogether. Although the power shortages were beyond the control of the Trust, the disruption to services was used to demonstrate people's susceptibility to the operating decisions of the Tramways.[89]

Further, over the course of the next five years the MTT was represented as having little sympathy for the concerns of everyday travellers. Complaints from many individuals and groups about frequent fare increases were dismissed by the General Manager when argued the rises were inevitable.[90] MTT tram operators were not subject to the Road Traffic Act, and the Royal Automobile Association and Adelaide City Council were amongst those organisations arguing that this anomaly caused considerable disruption to the journeys of other travellers.[91] Finally, tram operators had the right to refuse mothers with baby pushers boarding the tram. Private bus operators, sensing an opportunity, vowed that all such women were welcome on their buses.[92] Transport consultants De Leuw and Cather declared the MTT had failed to

---

[86] SAP, *Interim Report on the Municipal Tramways Trust Adelaide*, p9 & p17; This decision making process is supported in early correspondence to the Board. For example, SRO: MTT, Board Room Letter Books 1907-35, 7 January 1910, 18 May 1914, GRG 22, Series 30.

[87] SAP, *Interim Report on the Municipal Tramways Trust Adelaide*, p9.

[88] SRO: MTT, Press Cuttings, Vol. 9, 1945-48, GRG 22, Series 51, pp144-8; SRO: MTT, Press Cuttings, Vol. 10, 1948-52, GRG 22, Series 51, p142.

[89] SRO: MTT, Press Cuttings, Vol. 9, 1945-48, GRG 22, Series 51, p73, p119, p137 & p151.

[90] SRO: MTT, Press Cuttings, Vol. 10, 1948-52, GRG 22, Series 51, p58.

[91] SRO: MTT, Press Cuttings, Vol. 9, 1945-48, GRG 22, Series 51, p43, p144 & p146.

[92] SRO: MTT, Press Cuttings, Vol. 10, 1948-52, GRG 22, Series 51, p4, p12 & p63.

develop a sales oriented approach; that is, it did not seek to know or take account of its patrons (or market) but operated according to the agency's own convenience.[93]

The characterisation of the MTT as an autocratic institution fits into a widespread conceptualisation of power as domination. The problem with the MTT was not that it was a public agency, nor that it provided collective means of travel. Indeed, it was reconstituted in the early 1950s as an agency of the regional rather than local State to provide public transport throughout the metropolitan area.[94] The problem with the MTT was that its policy, management, and operating practices were unacceptable in a liberal democracy where decision making should be based on expert opinion not political interest, and the decisions of the traveller were to be facilitated not determined by State agencies. The cold war context of these events saw the tramways debate transformed into a public/collective versus private/individual debate. However, the problem identified by the 'experts' was one of the *nature* of the relationship between the public agency and the citizenry. It was the responsibility of public agencies to know the traveller and accommodate their choices as far as the greater public interest would allow. It was unacceptable to impose upon or determine their travel behaviour; this was perceived as an abuse of power. Although trams could be modern (Melbourne and Brisbane were cited as testimony to this), the agency which served Adelaide was bound to practices of the past.[95]

The declining tram patronage that contributed to the MTT's financial failure was claimed to be a result of public resistance to the decision making and operating procedures of the Trust.[96] South Australians were said to be fortunate in having the means by which to express their opposition to the tramways. The topography and climate made it amenable to using alternative modes of travel.[97] Bicycles and pedestrians were reintroduced into transport discussions as a means of resistance.[98] The high rates of car ownership also made it possible for many people to use automobiles in opposition to the tramways.[99] Private, individual means of mobility offered a way of challenging the public services operating in Adelaide. Although the bicycle was considered a form of resistance, and although its use had increased since

---

[93] SAP, *Interim Report on the Municipal Tramways Trust Adelaide*, p14.
[94] SAP, *Final Report on the Municipal Tramways Trust*, Parl Paper 22A, 1952, pp14-15 & pp22-23.
[95] SAP, *Interim Report on the Municipal Tramways Trust Adelaide*, pp13-14; SAP, *Final Report on the Municipal Tramways Trust*, Parl Paper 22A, 1952, pp7-8.
[96] SRO: MTT, Press Cuttings, Vol. 10, 1948-52, GRG 22, Series 51, p58; SAP, *Interim Report on the Municipal Tramways Trust Adelaide*, pp9-10.
[97] SAP, *Royal Commission on State Transport Services: Final Report*, p32.
[98] SAP, *Interim Report on the Municipal Tramways Trust Adelaide*, p10; SRO: MTT, Press Cuttings, Vol. 10, 1948-52, GRG 22, Series 51, p58.
[99] SAP, *Interim Report on the Municipal Tramways Trust Adelaide*, p9.

the end of the war, the lack of consistent statistics on bicycle ownership and use meant cyclists, like pedestrians, equestrians, and other non-motorised travellers were eventually lost from the field of transport. The motor vehicle became the principal means by which the individual resisted the authoritarian practices of the MTT.

In contrast to the MTT and the tram, the motor vehicle and the Highways Department were found to be thoroughly modern. Historians tracked the development of vehicles, placing the motor vehicle at the pinnacle of travel technology.[100] Constant innovation in vehicle design and production techniques were used to position the motor vehicle as the most modern means of transport. Through the 1920s and 1930s motor body manufacturing had shifted from craft-based production to production line techniques, while factories were adapted through the war to manufacturing military vehicles and armaments.[101] Innovation continued after the war, bringing together Australian, North American, and British 'know-how' (engineering, design, and cultural expertise) to produce the 'all-Australia' car.[102]

The Highways Department itself was commended in the Report of the 1947 Royal Commission for maintaining 'a high level of policy and administration'.[103] The Highways Department set the standard in what a government department should be in terms of modern management techniques, the accumulation and use of data in decision making, innovation in research, and innovations in road construction and traffic regulation methods. Further, and most critically, the activities of the Highways Department were not identified with controlling people's movements but securing the conditions under which travellers could make their own travel choices. The supply of road infrastructure facilitated the population's 'desire' to use a vehicle and the individual's 'desire' to travel at will. The clear lines of authority relating to the tramways and railways were absent from road travel. Responsibility for road infrastructure, siting of regulatory devices, laws relating to the conduct of travel, and the provision of transport services were dispersed between a range of agencies including the Registrar of Motor Vehicles, Highways Commissioner, local councils, and the police. The multiplicity of sites and techniques through which the road user was regulated made their regulation less explicit but more effective. Above all, this regulation relied upon the disciplinary techniques through which the road user had become a self-regulating subject.

---

[100] *The Australasian Engineer*, 7 February 1948, p61.
[101] Rich, p105.
[102] *South Australian Motor*, 15 April 1945, p1; *Advertiser*, 26 January 1955, p11.
[103] SAP, *Royal Commission on State Transport Services: Final Report*, p31.

The tram tracks were removed from Adelaide's streets during the 1950s, with the exception of the line running from the city to the seaside resort of Glenelg. The removal of the tram tracks made more space available in the centre of the street for motor vehicles, both moving and stationery. In the lull between removing the trams from the streets and motor vehicle volumes rising to fill the street's capacity, the centre lanes of several roads were turned over to use as car parking spaces.[104]

The struggle over the place of the tramways in Adelaide's streets might be seen as a part of the on-going liberal debates about how the State can best secure the operation of the economy and the economic operation of the city. Securing the economy did not simply mean ensuring production, circulation, and exchange. It also meant securing the economical conduct of the journey and the conditions under which 'free' individuals could exercise their 'freedom' of choice. It is to the concept of the individual and the notion of freedom of travel that the discussion now turns.

The Free Subject and Freedom of Choice

The disciplinary procedures described in Chapter Five have proved fundamental to ordering urban movement and producing the self-regulating subject of transport. This subject was incited to speak about journeys through the implementation of roadside origin-destination surveys. This incitement to speak encouraged vehicle operators to acknowledge themselves as particular types of travellers: motorists, cyclists, bus, or truck drivers. Vehicle operators were also expected to speak on behalf of any accompanying passengers, thereby silencing these other occupants and subsuming control over the vehicle with control over the journey.[105] The driver or rider, as the person in control of the vehicle, could readily be positioned as 'independent', the one that determined when, where, how, by what route, and according to whose convenience the journey would be made. The vehicle operators took responsibility for their own journeys and that of their passengers. The passengers were 'dependent' on the vehicle operator for their mobility and as such could readily be imagined as fitting their movements into the travel schedule of the driver. This issue is returned to in Chapter Eight, suffice it to say in the present context that control of the vehicle blurs the distinction between control over one's behaviour, independent decision making, and 'freedom' of choice.

---

[104] SRO: Traffic Survey – Report prepared by the City Engineer and Surveyor 1957, GRS 266, p19; ACC, *Annual Report 1957-58*, pp25-6; ACC, *Annual Report 1958-59*, p21; ACC, *Annual Report 1959-60*, p24.
[105] See for example, Mitchell and Rapkin, pp8-9.

The act of responding to transport surveys also provided travellers with a framework through which to reflect upon and interpret their journeys. The vehicle operator interviewed in the roadside survey, and later the traveller interviewed within his or her own household, answered questions on particular characteristics of the 'trip'. These trip characteristics were conferred with especial significance in the conduct of travel as they constituted the specific identity of the subject of transport. These characteristics identified the subject of transport according to factors such as the timing, duration, route, origin, destination, and purpose of the trip. Specific combinations of these attributes comprised the 'nature' of different subjects of transport, and each subject was named according to the degree and nature of assistance used in making a journey (for example, alone or with animal, mechanical, or human assistance), thus defining the mode of travel.

The measures of travel elaborated in the 1950s to describe the journey, such as timing, purpose, origin, destination, route, distance, and duration, were, by the 1970s, incorporated into transport planning studies as *Characteristics of the Journey*. *Characteristics of the Journey*, it was argued, combined with *Characteristics of the Transport System* and *Characteristics of the Traveller* to inform the traveller's decision to use a particular mode of transport.[106] *Characteristics of the Transport System* included criteria such as travel time, cost, accessibility, and comfort of different modes of transport. This last criteria, comfort, included items such as 'bodily crowding', 'exposure to undesirable behaviour of others', and 'protection from weather while waiting'.[107] *Characteristics of the Traveller* included factors such as motor vehicle ownership, income, and social standing. The motor vehicle, when evaluated against characteristics of the 'journey' and 'transport system', out-competed public transport within the South Australian context. Those travellers who owned a motor vehicle were found to have maximum choice in each of the trip characteristics.

The motorist became a 'choice' traveller. The motorist who used public transport was positioned as a 'choice' public transport user because they were deemed to have a *motorised* alternative to public transport.[108] Bicycles and walking did not constitute transport choices. The public transport user who did not own or have access to a motor vehicle was quickly described as a 'captive' traveller.[109] This traveller was

[106] P J Hovell, W H Jones & A J Moran, *The Management of Urban Public Transport*, Gower, Great Britain, 1975, pp35-64

[107] PB McLeod, 'A survey of models used to forecast the demand for a transportation mode with emphasis on behavioural models of mode choice', in D Hensher (ed), *Urban Travel Choice and Demand Modelling, Special Report No. 12*, Australian Road Research Board, Canberra, 1974, p37 & pp57-59.

[108] Hovell et al, p42

[109] Hovell et al p48.

identified as a captive on the basis of the travel options available for *every* journey they made. The possibility that a person made a choice not to own a motor vehicle but to use public transport for all their future journeys was not canvassed in the transport literature. This 'choice' was excluded from transport discourses and its exclusion effectively denied this possibility or placed it beyond contemplation. The traveller could not choose *not to* own a motor vehicle, and this normalisation of the desire to own a motor vehicle secured its usage.

Subjects of transport, in assuming this subjectivity, then act to regulate themselves according to the subject positions available to them and they are variously rewarded in their self-regulation. The subject positions of the vehicle operator (motorist, cyclist, bus driver) are rewarded through their relatively unimpeded use of street space. Vehicle operators, in contrast to passengers, are also rewarded through the control over, or independence they have in, their movement. Finally, subjects of transport are constituted as having more or less choice by reference to the framework of trip characteristics deployed within discourses on transport. Together, unimpeded use of street space, independence of movement, and maximisation of trip choice position the motorist as the subject that is 'free'. Subjects who assume the position of the motorist also subjugate themselves within a network of regulatory mechanisms. In return for their subjugation, this traveller is conferred as 'free'.

Conclusion

The critical points to be taken from all the preceding discussion are five fold. First, the transport rationalisation of urban travel has been fundamental to the production, elaboration, and proliferation of knowledge about urban movement. Reflection upon travel as transport has given rise to a range of instruments, measures, and discursive procedures through which movement has been translated into documentary traces. The discourses produced through these techniques are so pervasive that it has become difficult to think about urban journeys other than as transport. The production and circulation of transport discourses have operated to normalise the journey as a transport 'task'.

The second point to be taken from this chapter concerns the normalising effects of discourses on transport. The journey, as a transport task (trip), has been objectified through specific measures such as timing, duration, origin, destination, route, and purpose. These measures have enabled 'patterns' of movement to be 'discovered' and transport norms to be established. These patterns have given effect to travel routines at

different spatial scales, the city, the metropolitan area, and the state. The measures used in investigating travel have also made it possible to compare and rank journeys in relation to their economical and efficient conduct. As travel norms have been established, travellers have been located in relation to these norms. In the Adelaide context, the positioning of the motorist as the normal traveller has simultaneously positioned pedestrians, cyclists, and public transport users as abnormal. Contrary to the claims of some observers, marginal travel practices such as walking have been included in the field of transport. However, they have been brought under scrutiny and intervened upon as deviant behaviours. All of these individuals have been inscribed into and targeted through policies, programs, services, and infrastructure as subjects of travel. Transport experts have attempted to structure the 'field of action' of these subjects toward the economical conduct of the journey.

The third point to be drawn from this chapter is the naturalisation of contemporary travel practices. The individual has been understood within transport discourses as a free agent whose travel behaviour is an expression of his or her own unique desires. This construction of the individual (framed through the raft of objectifying techniques outlined above) has acted to naturalise the conduct of the modern traveller. The 'naturalisation' of the travelling body, and the 'transport' performance, operate to place both subject and journey outside of the political domain and therefore beyond interrogation. Chapters Four and Five have challenged this notion of the 'natural' individual, demonstrating how the subject of travel is a body that has already been worked upon through relations of knowledge and power. The characteristics and qualities of this subject were further worked upon in the post-World War II period with the elaboration and proliferation of discourses on transport.

The previous points highlight the way in which the relation between the expert, the traveller, and the State has been constructed within transport discourses. Power is understood, within these discourses, as residing within the State and it is targeted toward the 'free' individual. Experts are effectively positioned as mediators in this relation. The role of experts is understood as furnishing decision makers (within parliament and State agencies) with information on which to base their decisions. This relation between State, expert, and individual is seen to operate as a mechanism which ensures decisions are made in accord with the 'truth'. This relation also ensures the State does not impose 'its will' on the 'free' choices of the individual. In identifying the State as the site of power, relations of power beyond the State can be de-politicised. Put another way, the mechanisms which have brought travelling subjects into effect and the daily interactions between urban travellers can be ignored as

relations of power. Further, the traveller, is understood as maximising their freedom by maximising their choices in each of the trip categories (timing, duration, origin, destination, etc.). The traveller with the greatest choice according to these categories is, of course, the motorist. In assuming the subjectivity of the motorist, this traveller not only regulates their own behaviour but assumes priority in their use of street space and acts to regulate all other travellers.

The final point to be drawn out from this chapter is the effect of the transport rationalisation of travel on how urban populations are able to reflect upon their travel and the spaces in which they move. The journey, constituted within studies of urban transport as a trip, is claimed to be the product or more specifically the *by-product* of the activities at the end points of the journey. The rationale of travel as a by-product of other activities has been valorised above all other ways of conceptualising travel. As travellers have been incited to respond to travel surveys, they have been encouraged to acknowledge themselves as particular types of travellers and reflect upon their journeys in relation to the trip criteria made available within these surveys. These practical strategies have encouraged the travelling subject to think about their journey as transport tasks. The many ways a person might practice travel (e.g. circular journeys which end where they begin) and the other reasons which might motivate a person to travel (reflection, solitude, exercise, friendship, sociability) have been excluded from or subordinated to the desire to reach a destination for the activities available at that destination. By their exclusion, all *other* journeys and interpretations of travel practices have been made unworthy of study.

As travel has been reduced to an imperative of the points it serves, it has been devalued, if not entirely erased, as an activity in itself. As a by(waste?)-product of the transport activity, the space in which this travel took place, the street, could also be subordinated to the land use activities to which it facilitated access. Both the space of travel and the travel itself have been made meaningless in and of themselves, and as such the imperative of knowing travel has been reduced to ensuring the journey can be made as quickly as possible. Richard Sennett points out that the effect of the rapid journey is to blur or make invisible the space, and we might add the time, 'in between'. This space has been claimed by, and largely abandoned to, the traffic engineer. The following chapter exams the way in which some transport professionals sought to shape this space in the 1960s.

FREE - WAYS: LOCATING THE LIMITS TO TRAVEL

The present chapter examines the widespread contestation of urban transport that occurred through the late 1960s. Until this time, the economical conduct of the journey had been secured through traffic regulation devices, street widening programs, and road building regulations. Transport consultants working in South Australia argued these measures would be inadequate for the future and recommended a network of free-ways as the solution to Adelaide's travel problems. However, free-ways and the volume of traffic they catered to were found to cause a raft of new problems which threatened the health, wealth, and wellbeing of the urban population. The construction of free-ways was subsequently challenged by numerous individuals and organisations not only in Adelaide, but also in other Australian, European, and North American cities where free-way proposals were recommended. This chapter examines the free-way debates and the objectification of and interventions into urban travel through the late 1960s.

The free-way debates, as articulated within the South Australian context, are important for three reasons. First, these debates acted as a site into which information was gathered and circulated about the problems associated with travel and the point at which these problems became unacceptable. It was through the struggle over the Metropolitan Adelaide Transportation Study (MATS) that the limits to movement and the point of excess were explored and negotiated. Second, the objectification of urban travel by commentators from diverse disciplinary backgrounds (e.g. architecture, sociology, geography, economics) can be located within broader disciplinary struggles over the right to shape socio-spatial relations and the right to speak about travel. These disciplinary struggles, rather than going unheeded by engineers, were significant in both establishing the field and objects of transport study and entrenching the transport rationalisation of travel together with its privileging effects. Finally, the free-way debates are important in that the criticisms raised against free-ways gave rise to different strategies for intervening in the traveller's field of action as they sought to target the traveller as a social rather than an economic subject. However, as these strategies continued to be underpinned by the economical conduct of the journey, they consequently reaffirmed those travel practices which secured the speedy journey.

The following discussion is divided into three sections. The first section provides a brief background to the MATS plan, including the techniques through which travel was both objectified and constituted as a problem and the recommendations made to address the problem. The second section goes on to examine the criticisms raised against the MATS plan and places this in the context of the objectification of travel by a range of disciplines from architecture to sociology. The final section examines the recommendations made for addressing the specific problem of travel excess and the more general issue of the practices appropriate to the State in transportation planning. Two key documents have been analysed in this chapter, the *Report on the Metroplitan Adelaide Transportation Study* (popularly referred to as the MATS report or MATS plan) and the proceedings of the conference on the *Metroplitan Adelaide Transportation Study and the Future Development of Adelaide*. The discussion has been further elaborated by drawing on academic texts from the newly forming field of transport.

Securing Economical Movement

In October 1962, the *Report on the Metropolitan Area of Adelaide* was laid on the table in the House of Parliament. The report was the culmination of a comprehensive planning exercise initiated in the mid-1950s and carried out by a Town Planning Committee (TPC) especially established for the task. The plan was expected to guide the development of Adelaide for the following 20 years. As far as transport was concerned, the Committee members considered the future to be with automobiles. The Committee, like their counterparts in other Australian cities, recommended extensive construction of free-ways and express-ways to accommodate the forecast increase in car usage.[1] The report provoked some discussion in the local newspapers but passed the stage of public comment with few apparent objections and very little debate. In 1963, the Town Planning Committee's report was accepted by a vote of parliament as metropolitan Adelaide's first comprehensive town plan.

A second committee (Joint Steering Committee) was established in 1965 to oversee a detailed review of Adelaide's existing transportation and make recommendations for the future development of the transport network. North American consultants were engaged by the Steering Committee to '...devise a workable, acceptable and

---

[1] For an overview of studies undertaken in Brisbane, Sydney, Canberra, Melbourne and Hobart see, A B Sinclair and J E D Winton 'A comparative Review of Capital City Transportation Studies in Australia'. *Australian Planning Institute Journal*, October 1966, pp214-18.

adaptable plan to guide traffic and transport development of Metropolitan Adelaide up to the year 1986'.[2] The Consultant's investigations followed similar lines of inquiry to the Royal Commissions and Committees that had preceded them. They focused upon the efficient and economical movement of people and goods throughout the metropolitan area. Urban travel was problematised, once again, in terms of the threat congestion posed to the efficient conduct of the journey and its consequences for the economical functioning of the city.

Thinking urban travel in terms of the economical conduct of the journey delimited what information could be gathered and consequently what could be known about urban travel. Data collection for the MATS plan included surveys and observations of the conduct of travel, an inventory of road, tram, train, and bus infrastructure, and forecast increases in the population and the urban area.[3]

The techniques of data collection described in Chapter Six were instrumentalised and refined in the Metropolitan Adelaide Transportation Study. Only those journeys that began in one place and ended in another were brought under investigation, so that travel continued to be conceptualised as transport and tied to, or disciplined by, place.[4] Six different surveys were undertaken to capture information from different groups of travellers. 'Internal' (within the metropolitan area) and 'external' (from or to the metropolitan area) survey methods were used and respondents were questioned at home, on-board public transport vehicles, and at roadside survey stations.[5] The collection of trip data was expanded to include journeys made from Monday to Friday thereby capturing daily and weekly fluctuations in traffic conditions. Several surveys were conducted over a 24-hour period, while others ranged over 14-18 hours.[6]

Five of the six surveys targeted specific vehicle users (public transport, commercial vehicle, taxi, private vehicle - internal/ external) and two of these surveys also captured information on walking and cycling, for example, 'How did you travel to reach this train?'. However, the home interview survey, the only survey to capture information on all those people who were not in the process of conducting a journey by vehicle, did not allow for responses about walking and cycling journeys. The little

---

[2]De Leuw, Cather & Company, *Metropolitan Adelaide Transportation Study*, MATS Joint Steering Committee, Adelaide, 1968, p4.

[3] De Leuw, Cather & Company, *Metropolitan Adelaide Transportation Study, Basic Data for Transportation Planning*, MATS Joint Steering Committee, Adelaide, 1966, pp8-14.

[4] De Leuw, Cather & Company, *Basic Data*, p9.

[5] De Leuw, Cather & Company, *Basic Data*, p8.

information that was captured on pedestrian and cyclist travel was not recorded or tabulated in either the MATS basic data report or final report, nor were they put into the gravity models used in forecasting future travel demand.[7] The information uniformly collected for and reported in MATS included specific times (4am-10pm) and days, origins, destinations, purposes, and vehicular modes of travel. This uneven method of data collection and reporting necessarily positioned all 'other' journeys (those that took place at the end of the evening shift, on the footpath, by bicycle, or that were motivated beyond the destination) as marginal to the study of urban travel.

The surveys conducted for the MATS plan pressed the identity of 'traveller' upon respondents and assigned subject positions to them according to a single mode of travel, specifically motorist, car passenger, public transport passenger. In those instances where respondents travelled by several modes, for example, by foot to the train station then by train, the journey was identified as a public transport (train) trip. The very act of completing the survey incited respondents to acknowledge themselves as travellers and assume the subject positions available to them, speaking as motorists or passengers (car, bus, train, tram). Travellers were incited to acknowledge their journeys in terms of transport as they recorded the journey's origin and destination. Further, the motivations for the journey were subordinated to the activity at the destination. The discursive procedures of the travel survey provided the traveller with a particular way of understanding their journey and subsumed all other meanings and motivations within this framework.

The techniques used in analysing the urban travel data involved simultaneously creating and locating individual journeys within a new spatial hierarchy. At the broadest scale was the metropolitan area and this was divided into ever finer units: the local government area, traffic district, and traffic zone. The traffic zone, as the smallest of these spatial units, was the fundamental building block within the travel hierarchy. Each zone was assigned an identification number and every trip could be distinguished and enumerated according to the zone in which it was produced and to which it was attracted. Origins and destinations could be sorted and ranked according to their popularity and journeys, once separated out, could be combined and recombined to create patterns of movement at different spatial scales. Transport

[6] De Leuw, Cather & Company, *Basic Data*, pp8-14.
[7] De Leuw, Cather & Company, *Basic Data*; De Leuw, Cather & Company, *Metropolitan Adelaide Transportation Study*, MATS Joint Steering Committee, Adelaide, 1968.

planners could also determine temporal variations in the number of vehicles travelling between specified localities and along different streets.[8]

The actual distances of journeys were not recorded but the analysis of the origin/destination surveys, confined as they were to vehicular movements, constituted the 'normal' urban journey as that which crossed at least one local government boundary.[9] The bandwidth around this norm ranged from the journey which crossed a single traffic district boundary to that which traversed the entire metropolitan area. The techniques of gathering, analysing, and recirculating stories about travel enabled travellers to identify, compare, position, and regulate themselves in relation to other travellers and the travel norm.

Infrastructure data was collected through the Street and Highway Inventory. This information was used to calculate the total length and width of the existing road infrastructure, the quality of the pavement surface, and the total space designated for the vehicle 'right-of-way'. Together, the data on the conduct of travel and the nature of travel infrastructure was then related to projected increases in and spatial distribution of the population to determine future likely levels of travel.[10] Information on the physical area taken up by the anticipated number of vehicles and the rate at which vehicles travelled could be linked together to determine the optimum space for and speed of vehicular travel to avoid discontinuities in vehicle flow. The urban travel problem was effectively reduced to a consideration of the appropriate magnitude of infrastructure and it is this issue of size and scale that pervades the MATS debate.

The MATS recommendations provided for high speed rail and bus services, but the key solution to economical urban movement was the expansion of road space. According to the consultants, the hitherto principal strategies for increasing road capacity, road widening and increasing building set backs, would not suffice into the future. Although the consultants proposed widening 240 miles of existing arterial roads, they argued that other means would have to be tried – specifically the construction of *free*-ways.[11] 'Free' was not simply used in the sense of not paying a toll or providing unconstrained movement, but in terms of who might travel along the road: '*Free-ways* are for the *exclusive* use of motor vehicles, with no pedestrians,

---

[8] De Leuw, Cather & Company, *Metropolitan Adelaide Transportation Study*, pp41-44.
[9] De Leuw, Cather & Company, *Basic Data*, Table 9, pp27-59.
[10] De Leuw, Cather & Company, *Basic Data* p1 & p4.
[11] De Leuw, Cather & Company, *Report on Metropolitan Adelaide Transportation Study*, p.vi.

bicycles or animal-drawn vehicles permitted'.[12] In line with the *Report on the Metropolitan Area of Adelaide*, the MATS report outlined a network of *free*-ways, express-ways, and arterial roads which in many places were laid, quite literally, over the urban environment. This road system would primarily result in 'Substantial savings in *time* to free-way motorists and express bus passengers'.[13]

Tabled in the House of Parliament in mid-August 1968, the recommendations made in the study met with instant and widespread public opposition. Within days of the MATS report being released objections were made from individuals, community groups, local councils, parliamentary parties and politicians, welfare agencies, academics, and transport interest groups.[14] A few months after its release, MATS had been put on the agenda for the upcoming state election and was the object of debate at a conference organised at the University of Adelaide. This conference provided a forum for telling stories about urban travel and, in particular, stories about the problems associated with motor vehicles and free-ways.

The problems identified in the MATS debates were twofold. First, the report failed to address or acknowledge the travel needs of those who did not own or have access to a motor vehicle, an issue taken up in Chapter Eight. The second problem included the many and diverse costs imposed upon the city and all its inhabitants by motor vehicles and transport infrastructure, both public and private. The following section discusses the criticisms raised within the MATS conference papers and locates the MATS debates within an international context of concern about urban life as well as disciplinary struggles over the urban environment and urban travel.

Exploring the Problems of Excess

In the 1960s, discussions of urban travel were elaborated beyond facilitating motor vehicle usage to include investigations of the problems associated with automobiles and in particular their *over-use*. Throughout the MATS texts, over-use and moderate use of motor vehicles were juxtaposed in support of claims to restrain, limit and rein in motor vehicle use. Attention was concentrated within these discussions on the

---

[12] De Leuw, Cather & Company, *Metropolitan Adelaide Transportation Study*, p28. Emphasis added.
[13] De Leuw, Cather & Company, *Report on Metropolitan Adelaide Transportation Study*, Adelaide pix. Emphasis added.
[14] For example, *Advertiser*, 16 August 1968, p3; *Advertiser*, 20 August 1968, p3; *Advertiser*, 21 August 1968, pp3, 12; *Advertiser*, 22 August 1968, p3; *Advertiser*, 23 August 1968, pp3, 7; *Advertiser*, 24 August 1968, p5; *Advertiser*, 26 August 1968, p11; *Advertiser*, 27 August 1968, p3; *Advertiser*, 30 August 1968, p3; *Advertiser*, 2 September 1968, p8; *Advertiser*, 3 September 1968, p3; Advertiser, 5 September 1968, pp3, 17; *Advertiser*, 20 September 1968, 10.

appropriate, or acceptable, levels of automobile use and *inappropriate*, or excessive, use. This focus on *appropriate/ inappropriate* motor vehicle travel effectively delimited the parameters of the travel debate. *Non-use* of the motor vehicle was placed beyond reasonable thought. Elaborating Iris Marion Young's discussion of the discursive closure produced through the use of opposites, it can be argued that, despite the silence surrounding *non-use* of the motor vehicle, it is ever present, it is implied in and necessary to vehicle *use*.[15] This *non-use* might itself be seen as an unspoken excess, an *inappropriate* response to vehicle technology. Following Colin Gordon's discussion of the optimal norm, the MATS conference papers appear to seek a balance between the extremes of *non-use* and *over-use*, that is, *appropriate use* of the vehicle or the optimal norm.[16] The texts produced in response to the MATS plan provided one site through which the boundaries between *appropriate* and *inappropriate* vehicle use were negotiated.

The process of identifying the problems of travel, creating knowledge about these problems, and determining the point at which these problems exceeded the benefits of travel required expertise beyond engineering and the study of traffic. It was partly through this broader problematisation of car usage that the field of transport was finally and firmly established. As previous chapters have demonstrated, urban travel had been an object of study within disciplines such as engineering and economics in the nineteenth century and town planning and geography in the twentieth century. However, the study of travel did not have a set of procedures for the production, circulation, and regulation of truth. It was partly through the resistance to free-ways and the production of knowledge to support this resistance that the study of transport proliferated on an international scale, firmly establishing the field of transport in the process.

The authority to write about the conduct of urban travel, together with the central role of the traffic engineer, was contested through the free-way debates of the 1960s. Architects, sociologists, urban geographers, economists, as well as environmental and political scientists began to participate in the production of knowledge about the problems of excessive infrastructure and travel. These problems and the related transport knowledges were woven into the local South Australian context through, and continued to be elaborated well after, the MATS debates. The conference at the University of Adelaide was an important site within which all those disciplines

---

[15] I M Young, 'The Ideal of Community and the Politics of Difference', in L Nicholson (ed), *Feminism/Postmodernism*, Routledge, New York, p308.

claiming a right to speak on urban travel were brought together. The specific issues identified for South Australia in the 1960s included: environmental degradation; erosion of the urban aesthetic; social stability and equity; individual instability; the role of the State; and the rationalisation of travel itself. The following section examines each of these issues and the consequent proliferation of travel knowledge.

Environmental Degradation

The environmental impacts associated with urban travel ranged from vehicle manufacture and usage to the construction and design of transport infrastructure. These impacts included resource and energy usage during the production of vehicles, through to the negative effects of road construction on processes such as rainwater absorption, roadside soil erosion, storm water run off, and pollution.[17] The dangers of carbon-monoxide to human health had been reported in the 1920s, but concerns in the 1960s went beyond exhaust pollution and embraced both human and environmental health. The range of pollutants produced by vehicles was investigated, together with how these pollutants entered the environment, including its human inhabitants. Which pollutants circulated through the air, where they settled in the soil and the relationship of this to the volume, speed, and flow of traffic, which pollutants leached into the water table or found their way into storm water, all became objects of transport study through the following decades.[18]

The study of pollution also included noise pollution. Although the noise of modern life had been problematised in medical journals earlier in the century, studies of noise were brought into the field of transport from the early 1970s as researchers tried to determine tolerable levels of noise. Measures were taken throughout cities to define noise, the types of noises which were problematic and those acceptable, the point at which noise became excessive, the locations where noise was at its worst, and the interventions necessary to alleviate noise.[19] The problems of air and noise pollution

---

[16] C Gordon, 'Governmental Rationality: An Introduction', in G Burchell, C Gordon & P Miller (eds), *The Foucault Effect: Studies in Governmentality*, Chicago University Press, Chicago, 1991. p20.

[17] For a brief overview of some of these problems see: M Hillman, I Henderson & A Whalley, *Personal Mobility and Transport Policy*, PEP, London, 1973, pp31-33; P Moser, 'Aesthetic and Ecological Dimensions of Highways', *Transportation*, 1(1), 1972, pp55-67.

[18] See for example: G Wall, 'Complaints Concerning Air Pollution in Sheffield', *Area*, 6(1), 1974, pp3-8; J O'Leary, 'Evaluating the Environmental Impact of an Urban Expressway', *Traffic Quarterly*, 23(3), 1969, pp341-352; C A Latif & R Mufti, 'Philadephia Air Quality Control Region: Need and Recommendations for Revision of Transportation Control Plan', *Transportation Research Record 648*, pp59-65; A Mackie, 'Environmental Effects of Traffic in Ludlow, Salop' *Transport and Road Research Laboratory, Supplementary Report 245, 1978.*

[19] See for example: Road Research Laboratory 1970 cited in M Hillman, 'Not a Carborne Democracy', *Built Environment*, 3(7), 1974, pp342-44; 'Urban Traffic Noise', *Transportation* 1(3), 1972, pp291-305; J Hajek,

were flagged in the MATS debates but discussion of environmental impacts focused on the loss of wildlife habitat, native vegetation, and open space .[20]

Architecture and the Aesthetic

Turning from the environment to the aesthetic, architects proved vocal opponents of free-way building both in Australia and the United States. Jane Jacobs, Kevin Lynch, Donald Appleyard, and Gordon Cullen problematised streets and free-way infrastructure in the early 1960s and their arguments were drawn into the critiques of the MATS plan.[21] The language and techniques of architecture were used by these critics to establish and elaborate upon the problems posed by the size and nature of free-way infrastructure and its relation to the urban environment, its population, and culture.

The height, width, and length of both the free-way and the railway infrastructure was considered incongruent with the low rise metropolitan context of Adelaide. At heights of between 20 and 50 feet above ground, roads and railways would rise above the buildings of the city and surrounding suburbs. This height would create overshadowing, block the sunlight, and impede the outlook for those who lived, worked, or participated in activities within close proximity to the new transport network. Newell Platten pointed out that 'The land acquired is the minimum needed to construct the free-way, and on its edges tiny houses stare at 20 feet high embankments 8 miles long'.[22] The width of the infrastructure would also be greater than, and therefore out of proportion with, many of the surrounding buildings. The materials, design features and, in places, solid-fill construction techniques contrasted

---

'L$_{eq}$ Traffic Noise Prediction Method', *Transportation Research Record 648*, 1977, pp48-53; B Sexton, 'Traffic Noise', *Traffic Quarterly*, 23(3), 1969, pp427-39.

[20] For example: N Platten, 'The Effects of MATS on the Urban Environment', *The Metropolitan Adelaide Transportation Study and the Future Development of Adelaide*, Conference Proceedings, University of Adelaide, Adelaide, 1968, pp110-12; R R Hirst, 'The Economics of Public and Private Transport Modes', *The Metropolitan Adelaide Transportation Study and the Future Development of Adelaide*, Conference Proceedings, University of Adelaide, Adelaide, 1968, pp123-35; H Parsons, 'An Independent Planning View of MATS', *The Metropolitan Adelaide Transportation Study and The Future Development of Adelaide*, Conference Proceedings, University of Adelaide, Adelaide, 1968, pp173-88; *Advertiser*, 20 August 1968, p2; *Advertiser*, 3 September 1968, p2; *Advertiser*, 6 September 1968, p2; *Advertiser*, 13 February 1969, p2.

[21] K Lynch, *The Image of the City*, MIT Press, Cambridge, Mass, 1960; G Cullen, *Townscape*, Architectural Press, London, 1961; J Jacobs, *The Life and Death of Great American Cities*, Penguin Books in Conjunction with Johnathon Cape, Harmondsworth, 1961; D Appleyard, K Lynch & J Myer, *The View from the Road*, MIT Press, Cambridge, Mass, 1964.

[22] Platten, p109.

starkly with the local building materials and the visual relief and texture afforded by trees and gardens.[23]

The 1920s images of the city as a machine were evoked through the MATS debates as road and rail infrastructure were criticised on the basis of their mechanical scale:

> On the one hand is the human scale of the existing city or suburb, determined by human dimension and movement...On the other hand there is the new scale, that of the machine moving at great speed.[24]

This comparison in scale was used to suggest indifference toward the surrounding environment and an inability to be sympathetic to human needs and qualities. Both the infrastructure and the transport planner who envisioned it were invested with these 'machine-like' attributes. This apparent inability to take account of human needs and characteristics was seen to endanger the very 'humanness' of the city's inhabitants reducing people's lives to a set of functions and ignoring those aspects of being human which defied measurement.

The texts produced by commentators such as Rolf Jensen and Newell Platten re-produced the modernist dichotomies of rational/irrational, unemotional/emotional, mechanical/organic as they sought to value the latter over the former. Jensen and Platten set traffic and road experts and their mechanised urban ideal in opposition to human beings and the creative inspiration that organically elaborated the city. Rolf Jensen asked his conference audience how human dignity could be maintained '...under the pressure of present developments in the city...'.[25] The human circumstance invoked by Platten and Jensen was not a return to some 'natural' state but a 'cultured' condition, a body worked upon to appreciate being human and esteem the capabilities of human beings.[26]

The MATS infrastructure was not only a problem of scale, but also a problem of movement. The level of vehicular travel facilitated by large-scale road infrastructure was deemed excessive. This excess of movement undermined the urban aesthetic and thereby threatened civil society. Over-use of the motor vehicle would debase

---

[23] Platten, p108; R Jensen, 'Commentary on the MATS Report Proposals and the Adelaide Development Plan', *The Metropolitan Adelaide Transportation Study and the Future Development of Adelaide*, Conference Proceedings, University of Adelaide, Adelaide, 1968, p87.

[24] Platten, p108.

[25] Jensen, pp36-37.

[26] Jensen, pp36-37.

humanity by destroying the artefacts of human creativity, natural beauty, and an appreciation of creativity and beauty. The Sydney-based architect, Winston, claimed:

> ...all means...of accommodating [the motor vehicle] have been disruptive to civilised living. Whether it is the bedlam of ancient capitals like Rome or Athens, the squalor of the once glorious Champs Elysees, the one hundred and one famous and beautiful squares that are now mere car parks; or holiday places, seaside resorts, mountain villages, and even great national parks whose tranquillity and beauty are being torn to tatters by the millions now travelling en masse in their motor cars, searching vainly for peace and quiet. Wherever you go the noisy, dangerous and, as a means of city transport, inefficient motor car is debasing some of the most *precious values of civilisation*.[27]

The juxtaposition of the motor vehicle with 'ancient' cities and 'glorious' or 'famous' city spaces locates its 'newness' and 'ordinariness' as 'out of place'. As an artefact of modern society, Winston constructs the motor vehicle as lacking the history which could lend it sophistication and respectability. As a popular machine, it was positioned as mass rather than high culture. Mass availability and use of the motor vehicle disrupted those things which identified a population as civilised: an appreciation of history; excellence in craftsmanship and artistry; and a love of and respect for beauty and quiet. Mass use of the motor vehicle, or perhaps more accurately its use by the masses - its so called democratisation - indicated a certain vulgarity in motoring and the motorist who did not know or value 'correct' behaviour.

The link between transport and civilisation inscribed by Schumer in the 1950s was being elaborated into a more complex relation in the 1960s. The motor vehicle, as the pinnacle of transport technology, was indicative of a highly civilised society. However, excessive use of the motor vehicle threatened those other markers of civilisation including knowing how to conduct oneself in different social settings. Excessive use of the motor vehicle threatened to reduce human beings to the primitive condition from which transport innovations had raised them.

The free-way, the automobile, and the motorist were not only represented in terms of machines destroying humanity, but also they were described through the imagery of a grotesque mythological world or a wild and threatening nature. Platten depicted free-ways as '...those gargantuan interchanges where, like the hair of a Gorgon's head,

ramps and roads rear and intertwine with reptilian sinuousness'.[28] Other commentators invoked the image of the jungle wherein automobiles existed like predatory beasts preying upon 'soft', vulnerable travellers such as cyclists and pedestrians:

> But as the pedestrian's world dwindles to thin ribbons of pavement on either side of the traffic stream - let him beware. The warm, comforting security of indoors passes too quickly to the exposure of the hunted.[29]

The dangerous environment of the motor vehicle (road spaces and parking places) was expanded by taking over parklands, National Parks, and agricultural hinterlands:

> After leaving Brown Hill Creek the Hills Free-way rises into National Park, Belair, where it *penetrates* 1/4 mile into the northern section, *consuming* over 20 acres of *virgin* bushland...[30]

Platten's representation of the free-way invests this inanimate object with 'natural' human, and in particular masculine, urges of consumption and sexual desire taken to excess. References to so-called 'natural' desires of eating and sexual activity positions automobile usage along with these desires – driving becomes a natural urge to be brought under control.

The absence of human beings as agents of free-way construction or motor vehicle usage not only indicates their loss of control, but also positions them as victims of technology, subject once again to the exigencies of external forces. The perverted use of the automobile permitted by the free-way infrastructure would return human beings to the vulgar and brutal conduct of jungle dwellers:

> We have to defeat the destructive tendencies of the motor car in the city as otherwise the barbarian nomads of the future will encamp on their ruins in their mechanical caravans.[31]

In excess, the civilising possibilities of the motor vehicle transformed the city of Adelaide into a jungle of concrete and bitumen. The image of the jungle evokes a

---

[27] D Winston, 'Cities Today: Challenge, but Insufficient Response', *Australian Planning Institute Journal*, 6(2), 1968, p40. Emphasis added.
[28] Platten, p109.
[29] Cullen, p121.
[30] Platten, p105. Emphasis added.
[31] Jensen, p44.

sense of the vulnerability of human beings to their environment and implies the threat to social order posed by a return to primitive life.

However, references to the primitive world of the jungle serve as a reminder of life without technology. In quoting Lord James, Jensen was concerned for the defeat of the 'destructive tendencies' of the motor vehicle, not the use of the motor vehicle *per se*. The absence of technological innovations such as the motor vehicle would return human beings to a primitive routine of survival, leaving no time for cultural pursuits. The interplay of mechanical imagery with that of a threatening 'natural' world inscribed the upper and lower limits of technology. The absence of technology was as unthinkable as technology in excess; both conditions threatened the city and its society.

The excessive size of free-way infrastructure not only destroyed the urban aesthetic but, as a plan for people who '...all want motor cars... [and]..most of [whom] want to bring up their children in a house with a garden',[32] it facilitated a suburbia increasingly under attack. Writers and entertainers such as Robyn Boyd, Patrick White, and Barry Humphreys, amongst others, all constructed and condemned in their various ways a dreary suburban landscape and its inescapably dreary lifestyle.[33] For White, these suburban inhabitants not only lacked culture and vitality, but also they despised and displaced those who were different.[34] This lack of culture threatened to envelop the entire population through the inexorable spread of the suburbs and the excessive use of land.

In overcoming the problem of urban congestion, a new problem was being produced – urban obesity or sprawl:

> ...the great cities...sending out arms into the surrounding countryside, devouring acres of woodland and coast, consuming a thousand precious relics of the past, and not unnaturally, so constipating themselves in the process that their own essential movements become clogged and inefficient.[35]

---

[32] S Hart, 'The Relationship of the Metropolitan Adelaide Transportation Study to the Metropolitan Development Plan', *The Metropolitan Adelaide Transportation Study and the Future Development of Adelaide*, Conference Proceedings, University of Adelaide, Adelaide, 1968, pp11-12.

[33] Robyn Boyd, *The Australian Ugliness*, Penguin, Ringwood, 1963.

[34] *Riders in the Chariot* exemplifies the fate of those condemned to be different in the wake of Australia's spreading suburbs. *Tree of Man* reflects on the lives of those covered over by the sprawl of suburbia. P White, *Riders in the Chariot*, Cape, London, 1976 (first published 1961); P White, *Tree of Man*, Penguin, Harmondsworth, 1960.

[35] Winston, p41.

Platten, in a similar vein, argued:

> The city, we are told, needs major surgery. The city has a bad case of irreversible elephantitis. Its extremities will grow ponderously longer and longer. To support this growth the body must be opened up and new arteries inserted to allow the life blood to flow in greater quantities to the outer parts. Otherwise we are told our city will seize up. The operation will be expensive, the side effects may be unpleasant, but it is, nevertheless, necessary.[36]

Hugh Stretton, equally vehement in his defence of the suburbs, simultaneously condemned the urban aesthete for elitism and transport planners for their disregard of ordinary lives as demonstrated by the free-way recommendations.[37] The interests of both suburbia's detractors and its defenders were unified in their abhorrence of schemes such as MATS: their shared, but not their only, concern was one of scale.

Architects, along with many other urban theorists, set about calculating the appropriate measure of cities. Questions were posed relating to the constituent parts of the urban fact, the amount of land each of those components did or should consume, how many people were or should be located per square mile, how much land did or should a dwelling (and garden) consume, and how many people might live in each of those units. Technical measures were employed to determine the extent to which the detached home and garden participated in producing the sprawling city and the degree to which closer settlement (urban consolidation) might alleviate the spread. Architects and urban designers provided the measure of urban and intra-urban centres rather than individual buildings. These professionals sought to define the appropriate height and scale of buildings both in relation to each other and the city's inhabitants.[38] Others detailed the psychological impacts of the scale of infrastructure and buildings on human beings.[39] Technical procedures merged with and emerged from the colourful condemnations of 'mechanical' scale as the means of calculating balance were gradually written into transport policy documents and practices of urban government.

The field of transport required more than knowledge of road construction and traffic management techniques to accommodate particular types and speeds of vehicles.

---

[36] Platten, p98.

[37] H Stretton, *Ideas for Australian Cities*, Hugh Stretton, North Adelaide, pp7-23 & pp271-302.

[38] Cullen, pp79-81; Lynch, pp91-117; D Appleyard, K Lynch & J Myer, *The View from the Road*, MIT Press, Cambridge, Mass, 1964; C Alexander, S Ishikawa, M Silverstein, M Jacobson, I Fiksdahl-King & S King, *A Pattern Language*, Oxford University Press, New York, 1977, pp114-19 & pp531-34;

Transport professionals needed to engage with knowledges drawn from architecture and urban design to maintain the urban aesthetic.[40]

Social Stability and Equity

Discourses on architecture, psychology, medicine, sociology and urban geography were instrumentalised in the MATS debates, and the field of transport more generally, to establish the destabilising effects of both the infrastructure and excessive use of motor vehicles upon the social fabric of communities and the individuals who populated those communities. The term 'community', like the terms 'society', 'State', 'economy', 'government', and so forth, cannot be taken for granted. These are not phenomena which stand outside of discourse waiting to be 'discovered' and 'opened' to investigation. Rather these are terms deployed within discourse at particular historical moments and it is within and through their deployment that they are simultaneously constituted and brought into effect.[41] That is, they come to be 'seen' or made visible and are therefore available to be studied and intervened upon, and the consequences of their existence can be identified and debated.

The term 'community' became a focus of debate within different disciplines, including traffic engineering, in the 1960s.[42] Communities have been understood in similar terms to those employed for 'societies', they might be regarded as societies on a micro scale, and, as such, they provide care and support for, and create cohesion and unity between, their individual members. The phenomena of both community and society were (re)produced within the field of transport as their nature and the effects of transport upon their existence and operation were identified and contested within transport texts. 'Community' was (and continues to be) constituted within the field of transport as a spatially defined network of social relations. People within a locality are understood as being bound together through the frequency and intensity of the social relations apparently enabled by a common residential location. As sites of social cohesion, communities were also constituted as points from which to resist 'external threats' such as the imposition of the 'State's' transport plans upon the

---

[39] Alexander et al drew on psychological studies by Fanning (1967), Morrille (1969) and Cappon (1971) in creating guidelines for 'human scale' urban design. Alexander, pp116-17.

[40] Appleyard, Lynch & Myer's book *The View from the Road* began constructing links between the rationality of engineering and the aesthetics of architecture.

[41] N Rose, 'The Death of the Social? Re-figuring the territory of government', *Economy and Society*, 25(3), 1996, p329.

[42] R P Moss, 'The Concept of the Community: Some Applications in Geographical Research', *Institute of British Geographers Transactions*, 41, 1967, pp21-32. In the field of transport see, J Grigsby & B Campbell, 'A new role for Planners: Working with Community Residents in Formulating Alternative Plans for Street Patterns - Before Decision Making', *Transportation*, 1(2) 1972, pp125-150.

individual. Over the past 30 years, the language of 'community' has replaced that of 'society' as 'a new territory for the administration of individual and collective existence, a new place or surface upon which micro-moral relations among persons are conceptualized and administered.'[43]

Roadways, according to the architect Kevin Lynch, were paths or urban corridors, which could also serve as the physical boundaries of districts.[44] The role of roads for transport related travel was not under question, but rather the physical characteristics of roads, their width, length, and the nature of their use, distinguished them from all other land uses and as such they could define the spatial limits of social interactions. The action of roads in enclosing communities necessarily implies their role in separating communities from each other. However, commentators such as Patricia Moser, and Newell Platten argued that 'urban corridors' should be of such a scale as to knit closely with communities and even knit communities together into a metropolitan patchwork.[45] Each community within the patchwork might, following Patricia Moser, have its 'own personality'.[46]

Roadways, when expanded to the size of a free-way, could have the 'disruptive power of an edge', that is, they could divide rather than enclose a community and destroy its spatially defined identity.[47] The roads and railways proposed within MATS were identified as the type of infrastructure which would simultaneously destroy the locally-based services that facilitated local social interaction and create a physical barrier to the establishment and/or on-going development of social networks. The loss of homes and local facilities indicated the loss of individual and community stability and security:

> No analysis is made of the manner in which the community fabric is disrupted by the network, its effects on schools, hospitals, and effects on the relationships between houses, schools, shops and so on. Long established community relationships are swept away in [the free-way's] wake, leaving the remainder to rebuild as best they can.[48]

In their respective addresses to the MATS conference, Newell Platten and Harry Parsons systematically identified those localities where local services (schools, community centres, recreation spaces) and businesses were to be demolished and the

---

[43] Rose, p331.
[44] Lynch, *The Image of the City*, p47; Alexander, pp76-78.
[45] Platten, p116; Moser, pp55-67.
[46] Moser, p58.
[47] Lynch, *The Image of the City*, p64-65.

land built over by transport infrastructure that would impede people's interaction both within their local area and across localities.[49]

Both the free-way infrastructure and the over-use of vehicles posed a threat to urban communities. In their famous comparison of interaction amongst people living on differently trafficked roads, Appleyard and Lintell demonstrated the social effects of traffic excess. Social relationships, they argued, were spatially and numerically restricted as increasing traffic volumes precluded interaction between neighbours.[50] In providing a typology of road traffic conditions and their associated affects, Appleyard's and Lintell's work could be used to identify an 'acceptable' range of vehicular traffic and that point at which such individual movements might be destructive to local social networks. Within MATS, the imagery rather than the detail of this kind of typology was utilised. The descriptions of mass vehicular movement proffered by the MATS critics create an image of a 'wall' of traffic movement impenetrable to social interaction.

Further, critics of free-way projects argued that existing socio-economic differences would be exacerbated in a struggle over whose neighbourhoods were built over to facilitate whose journeys.[51] The social and economic inequalities made explicit in the United States free-way building projects were applied to Adelaide to demonstrate the inflammatory possibilities of the envisaged transport network:[52]

> ...free-ways themselves create new blighted areas; and the experience in Los Angeles...prove[s] only too clearly how serious a social menace this can become. It is these areas that racial riots have been sparked off in the last year or two, very largely due to the continuance or aggravation of blight and the misappropriation of funds which should be used for its elimination, instead being used for the wrong kind of highway construction.[53]

The ability of one social group to direct funds toward and shape urban infrastructure to serve their own desires threatened to create deeper social divisions. Over-use of motor vehicles, and the free-way infrastructure which enabled this over-use, were

[48] Platten, p101.
[49] Platten, pp102-13; Parsons, pp176-85.
[50] D Appleyard & M Lintell, 'The Environmental Quality of City Streets: The Resident's Viewpoint', *Journal of the American Planning Association*, 35, 1969, pp84-101.
[51] For Example, G Fellman, 'Neighbourhood Protest of an Urban Highway', *Journal of American Institute of Planners*, March 1969 35, pp118-22.
[52] Jensen, p86.
[53] Jensen, p86. See also Platten, p115.

found to inhibit the development of social relations, undermine social cohesion and physically divide communities.

Of course, this was not to argue against the value of motor vehicles. Automobiles, according to writers such as Leonie Sandercock and Rudolf de Jong facilitated different types of social networks, interactions, and lifestyles.[54] The problem was not so much the car as the need to control the '...anti-social use of the motor vehicle'.[55] The issue in relation to social segregation was to determine the optimum scale, location, and capacity of road infrastructure so as to take advantage of the positive social aspects of the motor vehicle while removing, or at least ameliorating, its worst effects.

The Unstable Individual

Social networks were being put at risk by the problem of 'car dependency'. Although driving and the desire to drive were discursively constituted as normal travel behaviours, the construction of free-ways would, according to Jensen, create a car dependent city. Failure to provide appropriate alternative means of transport would mean that all urban travel required the use of a car and this would lead, consequently, to the construction of yet more free-ways:

> However, as with drug addiction, once firmly set on the path of free-ways, in spite of their evil effects, one is led inevitably to enforced pleas for more.[56]

Rather than having a range of travel choices available, motorists would lose their choices. They would be forced to make all their journeys by car and therefore be made automobile dependent. They would become the victims of a transport network designed specifically around car usage.

As demonstrated in Chapter Six, the traveller who assumes the subjectivity of the motorist maximises their travel choice according to the trip categories of timing, duration, distance, destination, and so forth. The level of choice available in each trip category is discursively constituted as the travellers 'freedom'. The motorist, as the only subject able to maximise these trip choices, is the traveller who attains the

---

[54] R de Jong, 'The Recapture of the Street', in E de Boer (ed), *Transport Sociology: Social Aspects of Transport Planning*, Pergamon Press, Britain, 1986, pp90; L Sandercock, *Cities for Sale*, Melbourne University Press, Carlton, 1977, p135.
[55] Jensen, p44.
[56] Jensen, p57.

greatest 'freedom'. This traveller has priority in their use of street space. The *free-way* was (and remains) the most explicit example of the priority accorded to motorised vehicles.

However, the free-way system, according to Jensen's construction of the problem, would undermine motorists' responsibility for their own travel behaviour. The free-way would not only create car dependency, but also its capacity would induce ever more travel: '...free-ways attract large volumes of traffic...capacity volumes are soon reached, creating demand for more free-ways'.[57] Motorists would be encouraged to excess and thus lose the ability to regulate their own travel behaviour. Once accustomed to automobile travel, the motorist incurred a high cost on him/herself and on society more generally:

> ...the complete loss of sense of proportion in supporting the use of the motor vehicles was well emphasized in a recent statement in which it was said that, while in 1966 the average adult Briton was travelling only 1,000 miles per annum on public road transport, already the "host of private cars *enticed* us to travel 4,000 miles per annum, but at the cost of 400,000 casualties and 8,000 deaths in Britain".[58]

Motorists who were unable to moderate their use of the motor vehicle, like drug addicts, abnegated their responsibilities to their fellow citizens as they threatened the health and social networks of the urban population. The 'problem' traveller clearly presented an issue for the government of travel. If the motorist failed to self-regulate, if they fell victim to excessive travel and consequently abandoned their travel responsibilities, they would no longer be free but dependent. Car dependency contradicted the very freedom that motor vehicle travel was based upon and it loosened the motorist's responsibility for their own travel behaviour.

The State, the Economy and Society

The establishment and maintenance of social networks was not only 'at risk' from individual interests, but so too were investments in social services and infrastructure. The level of State expenditure on transport infrastructure in general and private transport infrastructure in particular was considered to serve individual choice over social responsibility and assisted the development of the economy over the development of society:

---

[57] Winston cited in Jensen, p57.
[58] Jensen, p50. Emphasis added.

<u>There is something wrong with the priorities of a society which is</u> <u>prepared to supply the resources needed to meet the unrestrained</u> <u>demand of consumers for road space, yet denies them resources for</u> <u>education.</u>[59]

Platten contrasted the differences in expenditure on private motor vehicle travel and State funding of other social services:

> At the moment we spend 2770 million dollars a year on the purchase, fitting, fuelling, insuring and licensing of motor vehicles - about 3 1/2 times as much as the state spends on education, health, hospitals, charities, law, order and public safety combined. I am among those who consider that this inflated expenditure on private mobility, this deprivation of education and welfare is a manifestation of social callousness and intellectual immaturity.[60]

This disproportionate expenditure would ultimately undermine the interests of the individual and the economy. 'Misallocation of financial resources', argued Jensen 'in pursuance of the illusion of city movement, could have the serious consequences of damaging the whole State's economy, in a way that would be bound to impair business prosperity'.[61] The tension being constructed between transport as an 'economic' activity (conducted by the self-interested subject of the economic domain) and those activities designated 'social' enabled a claim for funding to be re-allocated away from transport and into other public services such as health, education, and welfare.

The contest over State expenditure also included arguments to change the funding mix for different forms and levels of transport. Throughout the twentieth century, investment in different modes of transport has been discursively linked to different economic models and different valuations of society. A whole range of positions can be identified but in general private motor vehicle travel has been linked to capitalist economic interests and liberal ideologies of individual choice, while public transport has been linked to social development and social welfare. Investments by the State in infrastructure for one or the other mode of transport have been constituted as either the State supporting one sphere over the other, or, in the case of some Marxist commentators, the State support of both private and public transport is ultimately

---

[59] R R Hirst, 'The Economics of Public and Private Transport Modes', *Metropolitan Adelaide Transportation Study and the Future Development of Adelaide*, Conference Proceedings, University of Adelaide, Adelaide, 1968, pp123-36. Underline in the original.
[60] Platten, p119.
[61] Jensen, pp43-44.

seen to serve capitalist economic interests rather than society.[62] Through the critiques of the MATS plan, public transport and moderate use of private motor vehicle transport came to be identified with the social good. The reduction of car usage and re-allocation of resources into public transport was seen as a social benefit which was likely to have positive economic consequences.

Drawing on the governmentality literature, the social and economic spheres were re-produced, without question, within the transport literature as separate but related domains. The State was positioned as arbiter between these two domains with responsibility for the judicious allocation of funds to ensure imbalances did not occur between them. Techniques such as cost-benefit analysis began being introduced into the field of transport to ensure the appropriate disbursement of transport funds[63]

Destabilising the Rationale of Travel

Although investment in different modes of transport was constructed as serving economic or social development to varying degrees, the transport conceptualisation of travel went unquestioned. This rationale was reiterated through the MATS debates but its implications and, in particular, its privileging effects were not interrogated. Indeed, the scale of the infrastructure recommended within the MATS plan was considered to put at risk the very rationale for urban travel. Rolf Jensen reminded delegates to the MATS conference that 'transportation is a service function: it does not exist of and for itself.'[64] He argued:

> Recognition of these principles is essential if we are to develop our cities logically and efficiently... Equally important is the recognition of transportation as any of the other service functions running through the whole planning process as a thread rather than as an objective in itself.[65]

The traffic engineer, in facilitating excessive travel, was opening up the possibility of a transformation in the practice of travel. Travel 'unanchored' could become an end in itself.

---

[62] H Franks, 'Mass Transport and Class Struggle', in E de Boer (ed), *Transport Sociology: Social Aspects of Transport Planning*, Pergamon Press, Britain, 1986, pp211-22.

[63] For example, D Barrell & P Hills, 'The Application of Cost-Benefit Analysis to Transport Investment Projects in Britain', *Transportation*, 1(1), 1972, pp29-54.

[64] Jensen, pp40.

[65] Jensen, pp40-41.

Tony Cresswell, James Clifford, Elizabeth Wilson, and Janet Wolff discuss in their different ways the ambivalence of the journey within western society.[66] It has been constructed by conservative and radical observers as promising either freedom and adventure or instability and intolerance. This ambivalence was reintroduced into the urban context through the free-way debates as travel threatened to remove the urban dweller from his or her local context. Excessive movement would detach travellers from their 'rightful' place and the responsibilities they had to that place and its people. These concerns over the changing possibilities of the journey indicate how the transport rationalisation of travel has served to discipline travellers and their journeys. This discipline and urban stability were threatened by the prospect of untying the journey from its origin and destination. The undisciplined journey not only risked the economical conduct of the journey, but also it threatened to undermine the urban social order established and maintained alongside the economical journey.

The imagery deployed through the MATS debates illustrates the potential for instability invoked by the new travel infrastructure. The flows, channels, and currents of the 1950s transport texts were replaced by drifts, backwash, and tidal waves.[67] These latter terms suggest travellers would lose control of their travel and, like 'primitive' peoples, they would be subjected to the forces of their environment. Travellers 'out of control' would not only risk their own wellbeing, but also would undermine the stability of social relations within the home, the community, and the city. The stability and security of urban society were being undermined rather than fostered through the promise of endless travel.[68]

Attempts were made through the MATS debates and in wider critiques of contemporary transport planning to rein in the urban journey, reiterating travel as *trans-port*: a function which existed by virtue of other activities. Jensen quoted and concurred with a US Department of Housing and Urban Development Report which

---

[66] J Wolff, *Feminine Sentences: Essays on Women and Culture*, Polity Press, Cambridge, 1990, pp34-50; J Wolff, 'On the Road Again: Metaphors of Travel in Cultural Criticism', *Cultural Studies*, 7(2), 1993, pp224-39; E Wilson, *The Sphinx in the City: Urban Life, the Control of Disorder, and Women*, Virago Press, London, 1991; E Wilson, 'The Invisible Flaneur' *New Left Review*, 191, 1992, pp90-110; J Clifford, 'Traveling Cultures', in L Grossberg, C Nelson & P Treichler (eds), *Cultural Studies*, Routledge, New York, 1992, pp96-112; bell hooks, 'Representing Whiteness', in L Grossberg, C Nelson & P Treichler (eds), *Cultural Studies*, Routeledge, New York, 1992, pp338-46; T Cresswell, 'Imagining the Nomad: Mobility and the Postmodern Primitive', in G Benko & U Strohmayer (eds), *Space and Social Theory: Interpreting Modernity and Postmodernity*, Blackwell Publishers, Oxford, 1997, pp360-82.

[67] Jensen, 1968, p51 & p83.

[68] Hirst discusses the Buchanan report and the compromise to be reached between traffic and towns, travel, and buildings/stability (pp123-25). Platten concentrates on the disruption to established buildings and existing behaviours which are seen in terms of local social interaction (pp102-04).

claimed 'transportation is a service function: it does not exist of and for itself...'.[69] Mayer Hillman, a British critic of the motor vehicle, claimed '...transport is not an end in itself but principally the connection between different land uses', while de Boer stated '...transport is valuable only if it contributes to non-transport ends...and that therefore it must be integrated with planning in other domains'.[70] On the one hand, in tying the journey to its end points, sociologists, urban geographers, architects, and economists, amongst others, argued for urban order, thus providing a strong basis from which to argue against free-way construction and its consequent disorder. On the other hand, this strategy also served to reproduce the transport meaning of travel and its privileging effects. That is, free-way critics continued to reproduce the privileged position of the fast, orderly, and self-regulating traveller – the motorist. They did not question the 'freedom' of the motorist and in failing to do so they did not subvert or de-naturalise the priority accorded the automobile nor its 'inevitable' place in the urban landscape.

The free-way debates constitute a moment of intense disciplinary struggle over both urban space and urban travel. Disciplines as diverse as architecture, epidemiology, and economics had played roles in shaping urban space through the nineteenth and twentieth centuries. Engineers also had a long record of intervention in urban space; however, road and traffic engineers began to encroach across disciplinary boundaries with their increasingly elaborate schemes for movement. The free-way debates provided a site through which to establish the limits to travel and the spaces designated to the social relations of travel. These debates also served to establish the limitations of traffic engineering knowledge and the limits of the traffic engineers' authority to intervene and guide conduct within urban space. Of course, all of these limits continued to be challenged and renegotiated.

The free-way debates were carried out in a range of forums including newspapers, conferences, town halls, academic journals, newsletters; and magazines. These discursive sites also acted as spaces for gathering in and circulating the things that could be said about urban travel. The statements made about travel were produced through different discursive procedures and conferred with different levels of authority according to the subject (academic, local councillor, politician, transport bureaucrat) of the statement and the procedures through which the statement was produced. The problems and explanations proffered by both expert and 'inexpert'

---

[69] Jensen, p40.
[70] De Boer op cit p13. See also Hillman, p41. Both those opposed to and in favour of free-ways staked their solutions on the definition of travel as a function of other activities.

observers circulated together and often informed each other. The knowledge produced by experts was circulated amongst the population, while the exchanges of this broader community was gathered up and explored in a variety of ways by researchers from different disciplines.

Experts with disciplinary backgrounds in sociology, political science, and urban geography brought new techniques to bear on the study of urban travel. This diversity of approaches multiplied the objects of travel beyond the engineer's concern with vehicle flow, the economist's concern with transport enterprises, and the psychologist's interest in road safety. This broadening of disciplinary perspectives marks a significant moment in the objectification and elaboration of knowledge about urban travel and the remainder of this chapter examines the changes effected in the study of and interventions into the conduct of travel.

Addressing the Problem of Urban Travel: Knowledge and Conduct

Critics of the MATS plan opened to question which disciplines could contribute to the production of travel knowledge, which problems could be addressed, and whose journeys could be included. The information used in producing the MATS plan and other free-way proposals was, according to Hugh Stretton, insufficient:

> If a traffic planner quietly leaves pedestrians, school journeys, residential noise and adjacent property values and amenities out of his test programme, and if he includes direct compensations but not true replacement and relocation costs, or if he leaves out everything that can't be quantified simply because it can't be quantified, and announces his result as 'an optimum transport system' – then...he has deliberately chosen to plan for some classes and individuals against others and probably for a general increase in his city's real inequalities.[71]

Stretton's *Ideas for Australian Cities* highlighted the importance of 'what' was included in/excluded from transport studies. The deployment of such partial knowledge in the decision making process would, he argued, create biased outcomes and privilege some travellers over others. Transport researchers in Australia and overseas addressed criticisms such as Stretton's by creating broader and more inclusive data sets

---

[71] Stretton cited in L Sandercock, p128.

For instance, several international journals introduced measures to extend the range of articles published and widen their readership. Journals established prior to the 1950s were aimed at road and road traffic research, for example, *Highway: A Monthly Journal for the Education of People* (UK 1908), *Highways* (Australia 1927) and *Traffic Quarterly* (US 1947). A broader research agenda began to be set in the 1960s-70s and existing journals changed their names to reflect this wider study brief, for example, *Highway Engineering* (US 1956) changed to *Transportation Engineering Journal of the American Society of Civil Engineers* (1969) and then *Journal of Transportation Engineering* (1982); *Highway Research News* (US 1963) changed to *Transportation Research News* (1974). The United States-based 'Eno Foundation for Highway Traffic Control' was established in 1921 to support research into Highway Traffic. The Foundation changed its name in 1968 to 'The Eno Foundation for Transportation' in recognition of the fact that '...highway transportation cannot appropriately stand alone, but should be considered in the broader context of a total system of transportation'. The Foundation's journal *Traffic Quarterly* (US 1947) underwent a similar change in 1982 when it became *Transportation Quarterly*.

In the Australian context, H T Loxton commented in his paper to the 1974 conference of the Australian Road Research Board:

> Much wider objectives for transport including engineering, economic, social and environmental aspects have been accepted in recent years. Correspondingly transport planning must now include transportation studies, needs surveys, resource allocation, economic evaluation, physical and social environmental studies and annual programming.[72]

This expanded agenda was not reflected in the name of the Australian Road Research Board's journal until 1992 when it changed from *Australian Road Research* to *Road and Transport Research*.

Further, entirely new journals were initiated to investigate issues beyond the construction, design, operation, and costs associated with transport infrastructure, vehicles, services, and enterprises. The first volume of the journal *Transportation* a Netherlands-based publication established in 1972, included a plethora of articles on research into the environmental, psychological, and social problems associated with transport. In their first editorial comment the journal's founders stated:

---

[72] H Loxton, 'Transport Planning in Australia', *Australian Road Research Board Conference Proceedings*, 7(1), 1974, p57.

> We shall attempt to foster in TRANSPORTATION an interplay of the many disciplines which bear on transportation analysis, design and planning. Interaction between transportation activities and the social, economic, and environmental aspects of urban life will be accorded particular attention, and an emphasis on the systems approach will be encouraged.[73]

It was with this new agenda which drew upon a range of disciplines that the field of transport began to flourish. Almost 75% of the transport journals (local and international) held in the libraries of South Australian universities commenced publication after 1960 and over two thirds of these journals (20 out of 29) were established in the 1960s-70s.

The issues raised by political scientists such as Hugh Stretton, geographers such as Ann Marshall, architects like Rolf Jensen, and many others, were taken up by researchers as they explored travel in relation to different social groups, spatial contexts and environmental impacts. New methods of gathering and analysing data were instrumentalised in objectifying the urban journey, including travel diaries, interviews, and simulation games. Research centres were also recommended and established to bring together researchers from a range of disciplines to conduct studies of travel. These interdisciplinary institutions are returned to below.

Despite the involvement of new disciplines in the study of urban travel, little difference has been made to the predominance and privileging of some travel practices; motorised travel retains privileged use of the street and receives the greatest levels of funding and resources. The consequent and continued marginalisation of some travellers and travel practices can be partly explained in terms of the strategies deployed by engineers to maintain their authority as the study of traffic and roads broadened out to the study of transport. As engineers have continued to shape research agendas, the focus of study has remained on traffic flows and potential impediments to those flows. These strategies certainly deserve more scholarly attention.

However, it appears that a more fundamental problem lies in the way in which travel itself has been conceptualised not only by transport engineers, but also social scientists, environmentalists, urban designers, and architects. Although many different disciplines made urban travel an object of study, researchers did not

---

[73] The Editors 'Editorial Statement', *Transportation*, 1(1) pi.

challenge either the notion of the economical journey nor the objective of traffic engineers in facilitating the economical conduct of travel. As travel was taken into new disciplines, researchers in these fields entrenched urban travel as transport. They assisted in establishing *Transportation,* not highways, traffic, or travel, as a field of inquiry and intervention. The techniques through which researchers have been disciplined in, and come to regulate their research efforts in line with, the transport conceptualisation of travel have been discussed elsewhere but again this issue needs more attention from academics.[74]

In understanding travel as transport and producing knowledge about travel through this rationalisation, a particular order has been established within urban travel – and it is an order which necessarily privileges some travellers over others. All the attempts to include those who have been excluded are unlikely to assist in revaluing or addressing the needs of marginalised travellers. These 'other' travellers cannot be valued if they are simply inserted into a hierarchy already established through the dominant conceptualisation of travel as transport. The 'least efficient' travel practices and the travellers who perform them will necessarily remain at the bottom of the transport hierarchy. These marginalised or excluded practices include those bodies that: move slowly or hesitate; are distracted by the scenery and conversation; remain focused inward not outward; move across not along the street; and those that can't be placed as moving or staying. In order to revalue diverse travel practices, it may be necessary to challenge the very ways we can understand and know our travel.

The Role of the State and the Responsibility of the Subject

The free-way debates in Australian, North American, and European cities gave rise to and were sites through which knowledge about the conduct of travel and its effects were produced and circulated. This knowledge would assist transport planners and engineers to go beyond calculating the total transport task of an urban area as they could determine the optimal levels of travel, the optimal modal split, and the infrastructure necessary to accommodate that modal split. Prepared with this knowledge, transport experts could continue implementing strategies, plans, and practices to guide the behaviour of the urban traveller toward the economical conduct of their journey. The government of urban travel would not only secure the economical journey and the economical operation of the city, but also it would also ensure the health, wellbeing, and consequently the wealth of the urban population.

---

[74] J Bonham & D Ferretti, 1999, 'Imagining the Street: From Road Networks to Cultural Boulevards', in E Stratford (ed), *Australian Cultural Geographies*, Oxford University Press, Melbourne, 1999, p118.

Different strategies were proposed for facilitating urban travel; however, all commentators identified driving and the desire to drive as the norm. Hillman argued that once someone owned a motor vehicle, they would always prefer to use that vehicle over any other form of transport.[75] Jensen, in outlining a transport planning process used in Frankfurt-am-Main, described how planners took as their starting point the notion that everyone '...wished to be able to make use of the typical advantage of a car: to be able to *ride* at any time from any place to any place'.[76] Badger's address to the MATS conference delegates at the University of Adelaide stated, 'We have the same problem on a small scale within the University. Everyone, staff and students, would like to come to work in his [sic] own car...'.[77] If claims were made against the universal desire to own and use a motor vehicle, they did not appear in the papers and reports produced by academics, bureaucrats, or consultants. This apparent silence does not mean universal acceptance of the motor vehicle or motorised travel more generally; it simply suggests that alternative positions were not widely circulated nor seriously contemplated by particular 'experts'. The claim that 'everyone' wanted to use a motor vehicle drowned or silenced alternative views and (re)inscribed the automobile at the centre of urban transport.

Transport had to be addressed both at the level of the State and the individual. The task of transport planners was to secure the movement of people and goods between origins and destinations. The problem in accomplishing this task was that not everyone could use a motor vehicle for every journey they made because of the negative consequences of the automobile. This construction of the travel problem provided a framework for the planners in Frankfurt-am-Main to allocate resources across the transport network. According to Jensen, the planners determined the acceptable capacity of motor vehicle related infrastructure to meet some automobile demand as well as the level and nature of public transport services required to check that demand.[78] The solution to excessive motor vehicle travel was a combination of providing for a certain level of motor vehicle usage and an alternative means of travel, such as public transport, to accommodate travel *over and above* that capacity – to drain off the excess.

---

[75] Hillman, p163.

[76] Jensen, p80.

[77] G Badger, 'Opening Address', *Metropolitan Adelaide Transportation Study and the Future Development of Adelaide*, Conference Proceedings, University of Adelaide, Adelaide, 1968, p2.

[78] Jensen, p80. See also, C Elmberg, 'The Gothenburg Traffic Restraint Scheme', *Transportation*, 1(1), 1972, pp1-27.

The conjunction of micro-changes to the urban street and public transport proposed by the Frankfurt-am-Main planners was also adopted in the South Australian context. In 1970, the newly elected South Australian State Government commissioned a review of the Metropolitan Adelaide Transportation Study, '...to ensure adequate movement within the projected development of the city, leaving the way open for the maximum use...of developing flexible systems of public transit'.[79] Once again consultants were brought in from North America and their findings were outlined in *Adelaide Transportation Report*. The consultants rejected the free-way solution in favour of a series of micro-changes including street widening and more efficient use of existing road space. However, the authors recommended that land reserves be acquired in case free-ways were needed in the future.[80] The main recommendations of the report were in the areas of organisation and administration, and in public transport services.

Improvements to transport organisation and administration included the establishment of a Transportation Planning and Development Unit '...which can execute policy, coordinate modal services and implement innovative development'.[81] This department was established in 1972 and headed by a newly appointed Director General of Transport.[82] The department assumed responsibility for coordinating planning and transport operations, as well as with coordinating all State transport agencies. This Unit, according to the consultants, should also include '...a small group of people from pertinent disciplines who will initiate new ideas, develop, test, and evaluate them in conjunction with industry'.[83] Interdisciplinary research bodies and institutes involving professionals from '...diverse backgrounds in engineering, economics, social sciences, electronics, etc.',[84] were also recommended. These organisations would exist beyond the Transportation Planning and Development Unit but were to have close links with government.

The role of public transport as an option for motorists was widely circulated through the MATS debates. Although public transport had been represented through the 1950s as a reasonable option for some journeys, such as the journey to work, it was essentially identified as a welfare measure which catered to those who did not own or

---

[79] Social Technology Systems Inc., *Adelaide Transportation Report*, Social Technology Systems Inc., Massachusetts, 1970, p1.
[80] Social Technology Systems Inc., *Adelaide Transportation Report*, pp12-13.
[81] Social Technology Systems Inc., *Adelaide Transportation Report*, p13.
[82] SAP, *Report of the Director General of Transport on Public Transport in the Adelaide Metropolitan Region*, Parl Paper 109, 1972, p3 & p5.
[83] Social Technology Systems Inc., *Adelaide Transportation Report*, p15.
[84] Social Technology Systems Inc., *Adelaide Transportation Report*, p15.

have access to a vehicle. In the 1960s, public transport was being positioned as the *alternative* means of travel for the motorist. The relationship established between the motor vehicle and public transport, whereby increases in the former were always at the cost of the latter, could also work to the opposite effect.[85]

Improvements and increases in public transport provision were recommended in the MATS report but they went unfunded. Critics of the MATS plan suggested a more determined approach to public transport:

> An entirely different balance as between the use of public transport and highways needs to be struck so that once the maximum advantage is taken of the existing arterial roads system, the remainder of the urban traffic expected in the next ten to fifteen year period, should at least for the time being, be assumed as being catered for by rapid rail transit.[86]

The capacity to travel by car should be far more restricted, according to Jensen, and public transport would have a much greater role in draining off the excess desire for automobile use.

This strategy was pursued in the revised transport strategy when the consultants argued public transport not only had environmental and social advantages, but also it was desirable on the basis of its efficient use of space.[87] However, public transport as it existed in Adelaide in 1970 was not considered an attractive option. To improve its appeal, the consultants, like many before them, recommended innovations in public transport to make it more *like* the automobile. This suggestion was never put quite so boldly, but the characteristics deemed to attract people to use cars were precisely the characteristics said to need improvement in the public transport system.

The consultants argued that although society was becoming intolerant of the motor vehicle, the individual's expectations '...in all fields, are geared to an increasing level of comfort, convenience and material wellbeing, including mobility'.[88] Juxtaposed with these expectations were the characteristics of public transport as '...uncomfortable, inconvenient, inflexible (with regard to both place and time), slow, hard to use when carrying things, and lack[ing] privacy'.[89] The attractiveness of the automobile and the failure of public transport operators to improve attractiveness

---

[85] SAP, *Report of the Director General of Transport on Public Transport*, pp8-12.

[86] Jensen, p93.

[87] Social Technology Systems Inc., *Adelaide Transportation Report*, p11.

[88] Social Technology Systems Inc., 1970, *Adelaide Transportation Report*, p8.

[89] Social Technology Systems Inc., 1970, *Adelaide Transportation Report*, p8.

were deemed directly responsible for the decline in use of public transport. To halt this decline transit services should be improved in '...speed, comfort, door-to-door service, no wait, no transfer, good information.'[90] The characteristics assumed to exist in all automobiles were effectively positioned as the standard against which public transport should be measured. As long as the characteristics of the automobile were identified as the norm, public transport could only ever be positioned as 'not the norm' or as a deviation from the standard.

Public transport existed as an *alternative*, it was not constituted as the 'normal' means of travel. Throughout the MATS texts public transport was produced as a mode of travel *restraint, not freedom,* thereby positioning it as the counterbalance to the motor vehicle and the freedom available to the motorist. The motorist did not so much choose to use public transport as decide not to use a motor vehicle. The motorist, as a subject within the social domain, could be a responsible citizen and exercise self-discipline by refraining from over-indulging in motor vehicle use. Public transport required constant improvement to make it an acceptable alternative for the motorist, but it remained unacceptable in its own right.

Public transport provision facilitated the motorist in making socially responsible decisions. Public transport agencies (such as the MTT) were no longer represented as authoritarian institutions exercising control over the individual traveller. Rather, the role of these State agencies was to provide the population with the means by which to simultaneously exercise travel choice and regulate the amount of their travel, specifically their use of the automobile. The role of the State in public transport provision was to provide for the socially responsible citizen.

Conclusion

This chapter has examined the free-way debates in terms of the way in which travel was problematised, objectified, and intervened upon through the 1960s. In particular, it has been argued that the debates operated as a site into which stories about travel were gathered, sorted, and recirculated in a process of determining the optimum travel norm and the bandwidth of acceptable travel behaviour on either side of that norm. Commentators from architecture, geography, environmental studies, sociology, political science, and economics scrutinised urban travel to articulate the problems it raised from their particular disciplinary perspective, and established the point at

---

[90] Social Technology Systems Inc., *Adelaide Transportation Report,* p12.

which these problems undermined the health, wealth, and wellbeing of the population. The criticisms raised from different disciplines were part of a broader struggle over shaping urban space as well as a struggle for the right to speak about travel. It is beyond the scope of the present study to examine these struggles in detail, but it does open a range of points from which to research the minutiae of squabbles over urban space.

It has also been argued that the disciplinary struggles over travel and the place of travel in the urban environment did not challenge the rationalisation of travel as transport but, indeed, reiterated this rationale. The construction of free-ways was opposed because of the concern that it would enable increasing amounts of travel, demonstrating the anxiety over the possibility that travel might disrupt 'place'. Travel would no longer be bound to and disciplined by the sites it serviced; it would no longer serve in producing the economically functioning city. The continued rationalisation of travel as transport has enabled the continued privileging of those journeys conducted in the most economical or efficient manner. In discursively fixing the limits of the transport problem as appropriate/inappropriate use of the vehicle, constraints were placed on how the problem could be perceived.

It is not enough to keep including more categories of information, e.g. including all modes, counting circular journeys, etc., because some of these journeys run counter to the very meaning of transport. Further, the swiftest and most orderly journey will remain privileged as the economic journey and emphasis will be put on facilitating those journeys.

Finally, it has been argued that the threat of too much travel was addressed by draining off travel excess. In exploring excess travel, non-use of the motor vehicle was made unthinkable; it was beyond rational thought to imagine the city without motor vehicles, and in placing it beyond rational thought, the claims of those who pursued this argument could be discounted as unreasonable and biased. Although the infrastructure proposed within MATS was not built, and although there was a renewed interest in non-automobile forms of travel, the effect of MATS and the knowledge which circulated through the MATS debates was to entrench the motor vehicle journey as normal, to (re)inscribe public transport as deviant and to place the transport meaning of travel and its privileging effects beyond political question.

The other extreme of travel was to not use a motor vehicle at all. Those who did not own or have access to a motor vehicle were captives, they were constrained in their

travel choices. It is this problem of too little travel that the following chapter turns to address.

CAPTIVE WOMAN: DISCOURSES ON THE JOURNEYS OF WOMEN

Mary Thomas
Reminiscences, circa 1838
My object in going to North Adelaide was to visit a lady I knew, who was residing in a tent there. When I left South Adelaide I was not aware that the whole native tribe of the district was in the neighbourhood, and was not a little surprised at coming so suddenly on their camp where no other habitation was in view. However, I walked on, nodding to those who nodded to me, and returned by the same road without being molested, recrossing the river in the same manner as I did before, by walking over a large tree which had fallen from one bank in such a way as nearly to reach that on the opposite side, for then a bridge had not been thought of. When we got Home Rio [the blood hound] seemed to be as glad as I was to find herself once more in civilized society.(p77)

Excerpt from a letter to George Harris, March 28 1841
...Notwithstanding this, however, our town is rapidly increasing, and many streets are entirely formed. Hindley Street still takes the lead, and now contains many handsome houses and shops, equal in appearance to those of the best country towns in England.(p177)

Evan Kyffin Thomas (ed), *The Diary and Letters of Mary Thomas*, W K Thomas and Co, Adelaide, 1925.

Fran Kernot (nee Rankine)
circa 1970
We lived in Klemzig and we used to catch the bus to town. One day there was a fair few on the bus but it wasn't full. I had my little grandchildren with me and we sat down by a little girl and a little boy. Their mother opposite looked real daggers at me and said to her children, 'Get over here by me. You don't want to sit near those people'. I said quietly, 'It's all right, lady. The colour won't come off'. Everyone in the bus laughed at her.

I can't understand the fuss people make. After all we were all put in the world. It seems a terrible thing that white people have that sort of grudge against us. It shouldn't make any difference whether we're black, white, brindle, or jersey. We should all get on and try to make the best of things.

Cited in Christobel Mattingley, *Survival in Our Own Land: Aboriginal Experiences in South Australia Since 1836*, Wakefield Press, Adelaide, 1988, p272.

VM

Fifteen Minutes on North Terrace

'*Breathlessly one arrives on North Terrace in time to see the tram to our suburb dash gaily pass [sic]. Have you ever noticed what a positively supercilious sneer a tramcar seems to assume on such occasion? Absolutely remarking with a curl of its bumper bars, "How foolish to run, as if you could catch me!".*

'*Well, after all, fifteen minutes of unexpected leisure on a North Terrace bench can be quite a pleasant interlude to the busy housewife.*

'*How really beautiful Adelaide's one and only boulevard is looking these early spring days, the lawns and flower beds at their best, the trees coming into leaf, even the poor maimed ones on the southern side of the Terrace are covering their scars with a dress of young leaves.*

'*Add to the picture the background of stately buildings and the glimpse of the beautiful hills, and where in the world is there anything more entrancing to the eye...*'

'*Fifteen minutes of enforced leisure on a North Terrace bench can be full of interest to any student of human nature who cares to watch the passers-by.*

Take for instance this little group drifting to rest on the other end of our bench. One places the man, from his feeble steps, as an out-patient at the Hospital further along the Terrace, and scraps of conversation verify the supposition. Anxiously the woman questions what doctor has said to-day, and quietens the little girl who begs a visit to the shops, "Perhaps when Daddy is better and working again"

.
Sickness of the breadwinner, that dreaded specter of the poor and the basic wage earner, when will we legislate to provide insurance to safely tide families such as this one over their times of ill-health?

'*Rested, the little family moves on, and another couple take their place; young and vital, he in Khaki, the adoration in his eyes confirms the flashing newness of the wedding ring on her hand. Good luck to you, little war bride, and may your man come safely back to you.*

'*Back to the passing show. A group of laughing girls this time; Varsity students, very sure of themselves and the places they mean to occupy in the world.*

'*Ardent supporters of the feminist movement in its earnest attempt to create a new social order, so fundamentally strong, so essentially sane that never again will the world resound to the clash of warring nations, never again will woman-kind have to stand helpless while their dear ones are slaughtered.*

'*Our fifteen minutes' reverie on a North Terrace bench is ended, for behold, the chariot of the Tramways Trust hath arrived and we mount for our threepen'orth of standing*'.

The Housewife, September-October 1942, p13.

Liana France

Class assignment -1997

I never quite know exactly when I'm going to make this journey as it usually occurs after a brief phone call 'do you want to go for a run'. Within five minutes I'm usually out the door and heading for the lake with a close friend of mine. We use the time to catch up and where we are is really irrelevant. But location often prompts the subjects we talk about.

Before we reach the lake we pass through the hockey grounds, cricket pitch and a soccer field and this usually gives us reason to talk about such sports. When we reach the lake there's nearly always people fishing and as often as there are we make the comment 'Why would anyone want to fish here?', 'Why would anyone want to fish at all?'. Conversation is usually dominated then by whoever decided to go around the lake using the time to tell a story that they have been dying to share. The other party listens and stares at the lapping water against concrete steps and looks for their dream home.

By the time we reach one of three small beaches we debate whether we're walking on sand or stone and always wonder if anyone uses these breaks in the concrete foot path. By the time we reach a large shopping mall to the east of the lake one of us always says 'We should have brought some money, we could have gone shopping' though we both know this is something we could do any time and really have no desire to do so. We reach a four star hotel and realize we have to make a decision, do we do a full lap or do we turn around? Usually we turn around. At this stage we've usually exhausted the original story that needed to be told and spend the time conversing about this and that. We now have more time and reason to take in the sights around us. Looking at the rows of units with lake front views, the cluster of expensive houses with their own private lake. The occasional pelican that watches carefully as we pass it by. Once again reaching the patient fishermen we are astounded that they are still there and wonder how long they'll stay. At the hockey fields we're dying for a drink and wish home was that bit closer but it's not so we silently stare at the lush green grass then asphalt then concrete until we finally reach the red bricks of my front path. We're home.

Reproduced by permission of the author

These are all stories by Australian women, indigenous and non-indigenous, about their experiences of travelling through or being in Adelaide's urban (or emerging urban) environment. They are written through diaries, women's magazines, books, class assignments, and, until the 1970s, they were not included in Royal Commissions on traffic and transport or expert discourses on urban travel. When stories about women's travel were eventually heard within policy making and expert forums, they were listened to as documentaries of lament. Women were heard as being captive, confined, entrapped, and constrained.

Introduction

The road construction schemes of the 1960s and the ensuing free-way debates mark a shift in the objectification of urban travel. From this moment on, the study of transport was established as a field of investigation beyond calculating and conducting vehicle movements. Transport researchers applied tools from different disciplines to identify the problems created by travel and the points at which these problems undermined the health, wealth, and well-being of the population. The study of transport was concerned with determining optimal travel and the free-way debates drew attention to travel excess. At the same time that too much travel, specifically over-use of automobiles, was problematised, the opposite extreme of such excess, too little travel, also began to be analysed. Those journeys that fell below the travel norm in terms of distance, duration, destination, purpose, frequency, and resources were identified and brought under scrutiny.

The disaggregation of travel data according to the characteristics of individual travellers made it possible to distinguish patterns of travel among different segments of the urban population. Particular groups of people were found to be at greater risk of falling below the travel norm; these included women, young people, ethnic minorities, the elderly, the poor, and the disabled. Once identified, the travel practices of these different groups were investigated to determine: the precise ways in which they deviated from the travel norms, the factors that served to impede or constrain their travel choices, the effects of these constraints, and the strategies which could be employed to overcome such constraint. These studies constituted investigations into transport 'disadvantage'. The present chapter examines and problematises the knowledge created about one group identified as transport disadvantaged – namely women.

Urban theorists writing in the 1960s identified women who were wives and mothers as one social group at risk of transport constraint. Gans stated in 1961 that '...the increase in two-car families and women's greater willingness to drive are gradually reducing the traditional immobility of the housewife'.[1] A few years later Peter Mann observed: 'Transporting the infant on buses becomes a major tactical operation'.[2] These claims undoubtedly resonated with many women. Occasional commentaries in local newspapers and magazines provide glimpses of the difficulties women in Adelaide experienced when managing children on trams and buses or carrying heavy

---

[1] Cited in J Tivers, *Women Attached: The Daily Lives of Women with Young Children*, Croom Helm, London, 1985, p53.
[2] Cited in Tivers, p53.

loads during the war years of petrol rationing and suspension of home deliveries.[3] Further, the 'captive' suburban housewife had been used in advertising campaigns in 1920s America to sell motor vehicles to women while in 1950s Australia advertisers incited women, to enhance their roles as mothers by acquiring a motor vehicle.[4]

Gans's construction of housewives as 'traditionally' immobile clearly paints over the diversity amongst women. The South Australian branch of the Housewives Association exhorted women in their 1930s campaign to 'shop locally' rather than being enticed into the city, indicating that some middle-class women were highly mobile.[5] Further, many working- class women participated in employment outside the home before the advent of travel technologies such as bicycles, trams, buses, and motor vehicles. Universalising the mobility of women as wives and mothers should be treated with skepticism; however, what is especially significant in the current context is that the (im)mobility of women was being widely problematised.

The concern with transport constraint coincided with an emergent feminist literature which problematised women's lives in terms of their exclusion from activities outside the home, particularly their exclusion from paid employment. Risa Palm and Alan Pred brought together the work of feminist writers Betty Friedan and Anne Oakley with the time-geographic approach of Thorsten Hagerstrand.[6] In his theorisation of mobility, Hagerstrand argued an individual's travel behaviour was determined by a conjunction of three factors: the social characteristics of the individual; the temporal framework established by institutions (schools, banks, government offices) and significant others (e.g. children, partners, parents); and the spatial context within which the individual lived.[7] Palm and Pred argued that the temporal and spatial context that framed women's lives, especially those who were wives and mothers, combined with women's access to and use of transport resources to determine their participation in meaningful activities outside the home, specifically paid employment.

---

[3] ME Skitch, 'A Housewife Reads the News', *Housewife*, April-May 1947, p11; SRO: MTT, Press Cuttings, Vol 10, 1948-52, GRG 22, Series 51, p4, p2.
[4] R Miller, 'Selling Mrs Consumer: Advertising and the Creation of Suburban Socio-Spatial Relations', *Antipode*, 23(3), 1991, pp263-301.
[5] *Housewife*, January 1930, p5; *Housewife*, February 1930, p16.
[6] Palm's and Pred's foundational work using time-geography draws on the work of, amongst others, Betty Friedan and Ann Oakley to problematise women's travel. R Palm & A Pred,'The Status of Women: A Time-Geographic View', in D Lanegran & R Palm (eds), *An Invitation to Geography*, McGraw Hill, New York, 1973, pp99-109.
[7] T Hagerstrand, 'What about People in Regional Science?', in E de Boer (ed), *Transport Sociology: Social Aspects of Transport Planning*, Pergamon Press, London, 1986, p148. (First published in 1970).

Feminist geographers such as Susan Hanson, Pat Burnett, Sandra Rosenbloom, and Jacqueline Tivers, amongst others, took Palm's and Pred's work beyond the hypothetical. These authors opened the field of transport to feminist inquiry as they began research into the relation between transport and the position of women within society. Feminist geographers, like feminists working in a range of disciplines, sought to map the forms and extent of women's subordination.[8] These modernist feminist transport researchers sought to describe, explain, and demonstrate the effects of gender differences in access to destinations. This empiricist approach has been critiqued on the basis that it universalises women from a particular white, middle-class, western perspective.[9] Indeed, the possibility of a singular white, middle-class, western perspective is itself questionable and feminist geographers have addressed this tendency to universalise the experiences of women. For example, Hanson's and Pratt's *Gender, Work and Space* examines the formation of gendered identities of workers within different spatial contexts. What has remained constant in Hanson's and Pratt's work, however, is their conceptualisation of travel.[10]

This chapter examines and problematises the modernist feminist literature on transport. It is argued that modernist feminists successfully intervened in the field of transport but they did not fundamentally challenge the field. Rather, these researchers used the conventional concepts, objects, and analytical tools made available within mainstream transport literature as they made women visible within the field. The following chapter simultaneously examines as it renders problematic the discursive strategies deployed by feminists to locate their work and women's journeys within the field of transport.

The texts analysed in this chapter include research papers and commentaries on women's travel published or presented in Australia, Britain, and the United States. This literature has been assembled on the basis of its explicit concern with women's travel through the urban environment. These texts have been produced by and circulated amongst academics, planners, transport policy makers, as well as 'community' and welfare organisations for more than thirty years. It is an old literature, the average date of publication being 1986, and, apart from the occasional article and conference, this sub-theme in feminist and transport studies has been

---

[8] For an overview see, L McDowell, Space, Place and Gender Relations: Part I. Feminist Empiricism and the Geography of Social Relations', *Progress in Human Geography*, 17(2), 1993, pp157-79.
[9] L McDowell, 'Space, Place and Gender Relations: Part II. Identity, Difference, Feminist Geometries and Geographies', *Progress in Human Geography*, 17(3), 1993, p308.
[10] S Hanson & G Pratt, *Gender, Work and Space*, Routledge, London, 1995. See especially chapter four 'The Friction of Distance and Gendered Geographies of Employment'.

abandoned for the present.[11] It appears there is nothing left to say about the journeys of women.

The first section of this chapter examines and problematises the points of convergence between modernist feminist and mainstream transport research. The section begins with a brief review of the conceptualisation of travel, the object of transport study, and the analytical framework used by mainstream transport researchers. The discussion then turns to an examination of these three factors within the feminist literature and the problems they pose in comprehending and intervening in the conduct of women's journeys. The second section explores how specific objectives have informed feminist studies of women's journeys. In particular, the discussion elaborates on feminist analyses of the modes of transport used by women, the constraints different modes impose upon women's movements, and the recommendations made in overcoming such constraint. It is argued that these feminist analyses have actively reproduced the transport conception of travel and the transport hierarchy. The final section discusses alternative ways of thinking about women's experiences, understandings, and practices of travel. This section draws on the stories reported at the outset of this chapter and elsewhere to demonstrate different ways in which women might acknowledge themselves as travellers.

Transport, Trips, and Trip Characteristics

It has been demonstrated through Chapters Six and Seven that, from the 1950s, urban travel has been conceptualised as transport: that journey from point A to point B, generated by the activities at each of those points. This view continues to be reiterated in the South Australian context as local transport experts Andrew Allan, Mike Taylor, and Glen D'este put it recently,

> "Transport is derived demand" is a fundamental axiom for urban and transport planners. Travel occurs because individuals need to move between places...[w]hen the person or physical object is moved in space, travel takes place and a transport task is undertaken. The

---

[11] *Women on the Move*, First National Conference on Women and Public Transport, State Transport Authority, Adelaide, 31 October - 1 November, 1994; *Women on the Move: Maintaining the Momentum*, Second National Conference on Women and Public Transport, TransAdelaide, Adelaide, 31 October - 1 November 1995; R Dowling & A Gollner, 'Women and Transport: From Transport Disadvantage to Mobility Through the Motor Vehicle', *Proceedings of the 21st Australasian Transport Research Forum*, Transport Systems Centre, University of South Australia, Adelaide, 1997, pp337-54; M Kwan, 'Gender and Individual Access to Urban Opportunities', *Professional Geographer*, 51(2), 1999, pp210-22; R Law, 'Beyond "Women and Transport": Towards New Geographies of Gender and Daily Mobility', *Progress in Human Geography*, 23(4), 1999, pp567-88.

transport activity seldom has a purpose of itself, rather it occurs to meet other demands.[12]

The transport conceptualisation of travel has facilitated the production of knowledge about urban movement, the objective of which has been to secure and guide travellers in the economical conduct of journeys. 'Economical' has been understood both in terms of efficient use of time, energy, and money and in terms of maximising travel choices.

The object of transport study is the 'trip', the actual performance of moving from one point to another. This performance has been subjected to observation, measurement, and analysis through a framework of characteristics including origin, destination, distance, duration, purpose, frequency, timing, and mode of travel. The analytical framework employed by transport researchers has brought the urban journey and urban travel patterns into effect. It has also enabled researchers to calculate the most economical conduct of journeys and identify tactics to guide the traveller in the economical conduct of their travel. The trip characteristics observed, measured, and analysed within transport discourses effectively constitute the trip choices available to travellers. It is these choices in the timing, duration, destination, and so forth of the journey that transport experts seek to guide and maximise.

In line with mainstream transport researchers, feminists have also divided urban travel practices as transport and non-transport journeys. In her introductory chapter to *Urban Transportation,* Susan Hanson, a North American-based geographer who has published articles on women's travel in the urban environment over three decades, identifies those journeys which are not included as transportation: 'Only occasionally do people engage in travel for its own sake, as in taking a Sunday drive or a family bike ride'.[13] We might add to this list, taking children out for a walk after dinner on a summer's evening, taking a restless baby for a drive to lull it into sleep, taking the dog for its daily exercise. Hanson effectively writes other travel possibilities into her text in order to write them out as she goes on to state:

> **Most** urban travel occurs as a by-product of trying to accomplish some
> other (nontravel) activity such as work or shopping. In this sense the
> demand for urban transportation is a *derived demand*, derived as it is

[12] A Allan, MAP Taylor, & G D'este, *Adelaide 21: Access and Movement,* Adelaide 21 Steering Committee, Adelaide, 1996, p2.
[13] S Hanson, 'Dimensions of the Urban Transportation Problem', in Susan Hanson (ed), *The Urban Transportation Problem,* Guilford Press, New York, 1986, p4.

from the need or desire to do something (other than travel) at some place other than home.[14]

This claim begs the question: Why, given that transport data sets do not include the enumeration of "non-transport" journeys nor the interrogation of either transport or non-transport travel, are the transport researchers and planners so sure that most urban travel is transport related travel?.

Hanson's assertion has been echoed in texts by Australian and British feminists. For example, Deborah Foy and Sue Crafter claim in an Adelaide study: 'Transport is primarily a secondary aspect of economic, recreation and social activities, but it has a profound impact on the ability to satisfy needs'.[15] Jill Lang, in her study of Sydney, states: 'Travel is generally not an end in itself but is a function of the distance between the location of various activities in the city'.[16] The British writers Hamilton and Jenkins comment: '...travel is rarely an end in itself, but almost always a means of reaching particular facilities...'.[17] The transport conceptualisation of travel as a 'by-product' of other activities has gained widespread currency, because it has been adopted uncritically by many feminists in English-speaking countries.

As feminist researchers have accepted transport as the motivation for travel, they have also taken the trip as their object of study. Commenting on travel-diary data collected for a study undertaken in Sweden, Hanson and Hanson state:

> Each departure of an individual from the residence was considered to initiate a trip, that is, a series of movements among locations *where travel was interrupted so that one or more activities could be undertaken.*[18]

The trip is constituted as that series of movements between two or more locations and it is this movement which is brought under scrutiny. The trip is made the object of study both explicitly through Hanson's and Hanson's statement and implicitly through the framework of trip characteristics instrumentalised within their travel survey.

---

[14] Hanson, *The Urban Transportation Problem*, p4. Bold emphasis added, italics emphasis in text.
[15] D Foy & S Crafter, 'Mobility and Access Needs of Women in New Communities', *Metro Planning: Social Costs and Benefits*, Paper presented to the conference, Urban Research Unit, Australian National University, Canberra, Date Not Stated, 1989, p1 (in possession of the author).
[16] J Lang, 'Women and Transport', *Urban Policy and Research*, 10(2), 1992, pp14.
[17] K Hamilton & L Jenkins, 'Why Women and Travel?', in M Grieco, L Pickup & R Whipp (eds), *Gender, Transport and Employment*, Avebury, Aldershot, 1989, p21.
[18] P Hanson & S Hanson, 'Gender and Urban Activity Patterns in Uppsala, Sweden', *Geographical Review*, 70, 1980, p293. Emphasis added.

Before going on to discuss feminist observations and analyses of the trip, it is important to note the ambiguous way in which the terms 'travel' and 'transport' are used in both mainstream and feminist discourses. Each of the researchers identified above have introduced the distinction between transport and non-transport related travel at the outset of their texts, thereby establishing and acknowledging that travel can extend beyond transport. However, within their narratives there is constant slippage between the terms 'travel' and 'transport'. Transport surveys are always called 'travel surveys' and yet their very design does not enable the inclusion of journeys which do not specify destinations nor discourses and practices beyond the object of reaching a destination.[19] For example, the activity of travel could only be included in Hanson's and Hanson's study, cited above, if it was punctuated by non-travel activities (e.g. shopping, working, banking, playing sport). It is clear that actions of travel (walking, cycling, driving) are necessary, but not exclusive, to physically transporting oneself from one point to another. However, the frequent slippage in terminology between transport and travel which occurs in all transport literature threatens to reduce all actions of travel to the status of transport, a 'by-product' of other activities.

The clear statements transport writers make about the intent of travel and what constitutes transport and non-transport journeys pervade the transport literature (feminist and otherwise). However, even where authors do not define journeys as transport in such precise terms their analytical framework constrains the journey to a transport intent. The work of Jacqueline Tivers provides an example of how the characteristics of origin, destination, distance, duration, frequency, timing, and purpose have been deployed in the analysis of women's journeys. This framework (re)inscribes the transport understanding of travel and the object of travel as the trip.

Tivers' study of the quality of life of women with young children in London included a discussion of women's participation in activities outside of the home. Tivers' did not identify the journey itself as an out-of-home activity. Rather, she anchored journeys to *destinations* as the type of activities (purpose) at each destination and the frequency with which women accessed destinations acted as measures of women's participation in out-of-home activities and hence their quality of life. Out-of-home activities were 'read off' the journey destination and the (presumed) activity at that destination. The destination dominates how the journey is discussed as the trip

---

[19] Hanson and Hanson, p293; Ampt Applied Research, *Adelaide Household Travel Survey*, Director-General of Transport, Adelaide, 1986; Transport SA, *Adelaide Household Travel Survey*, Transport SA, Adelaide, 1999.

choices (mode, frequency, distance of travel) are examined exclusively through reference to accessing the destination.

This reading of women's journeys as a desire to reach a destination to participate in the activities at that destination made it difficult for Tivers to account for and interpret some journeys. For example, in discussing journeys to the shop, a journey usually made daily and on foot, Tivers took a cue from Elizabeth Gittus, arguing:

> Perhaps, in this case, shopping on a daily basis may be seen as a way of simply taking children out and as 'something to do', rather than as a purely servicing task.[20]

Tivers acknowledges the possibilities of this journey beyond reaching the destination of the shop for the activity of shopping. However, she trivialises these other possibilities by referring to them with terms such as 'simply' and 'something to do', thereby leaving them vague and ill-defined.

But further, in rereading Gittus, the latter's argument is that, 'Many [women] said that they shopped every day "to give the children some fresh air" and also make their own informal contacts'.[21] This account of 'getting children some fresh air' and making 'informal contacts' opens out the journey in and of itself. The journey no longer sounds like the cry of a bored housewife; instead, its practice can be contemplated in terms of long-standing discourses about travel and health and a more recent discourse on travel and creating community networks. The discourse on health, as demonstrated in Chapter Four, has been critical in facilitating the use of the street as a site of circulation. In Elizabeth Gittus' account the shop is not so much a destination as a *turning point* in the journey. The purpose of the journey as interpreted by the respondents is health and friendship, the shop serves, perhaps, to mark the half-way point.

Similarly, in her discussion of park visits, another journey made almost exclusively on foot, Tivers describes the variable use of parks and playgrounds amongst women in her study. Again, she concentrates on the park as destination, describing class differences in *frequency* of park visits, *distance* of parks from residences, and the *mode* by which women travelled to the parks. In this account, the park and the children's activities presumed to take place therein are the purpose for the journey.

---

[20] Tivers, *Women Attached*, p141.
[21] E Gittus, *Flats, Families and the Under-Fives*, Routledge & Kegan Paul, London, 1976, p63.

However, like walking to the shop on a daily basis, the journey as practised may be an integral part of the outing, if not the reason for going to the park. The park, like the shop, may be *in service of the journey* rather than vice-versa. The journey effectively spills out over its destination suggesting that the end point of the trip is not the only, or necessary, aim of travel. The destination of the park makes the journey visible as a transport task but the destination remains subordinated to a travel practice constituted through other discourses.

As Tivers places the analytical focus upon the destination of the park, she not only (re)states the transport conceptualisation of travel, but also invokes the modernist divisions of urban space (discussed in Chapters Four and Five) in which the appropriate place for children to play and take fresh air is the park, not the street. The journey is contained by and subordinated to its apparent end-points and the space inbetween the origin and destination, the street, is once again inscribed as a site which facilitates the most economical conduct of this journey. As pointed out in Chapter Six, by anchoring the journey to land uses, these enclosed spaces act within a transport discourse to regulate what shall take place in the troublesome spaces 'inbetween'.

Transport and non-transport journeys have been classified through the continual process of dividing and naming specific practices of travel. Feminists have participated in this process of division and separation, actively (re)inscribing the conceptualisation of travel as transport. Non-transport journeys have been separated out and excluded from scrutiny, while trips and the various trip characteristics have been traced, enumerated, measured, aggregated into patterns, and extrapolated into future trends. These studies were intended as both a challenge to mainstream transport research and a demand for inclusion within it. Feminists succeeded in making women's journeys visible but they did not fundamentally challenge the field of transport. They did not question the transport conceptualisation of travel, the object of transport study (the trip) nor the framework through which this trip could be examined, that is, distance, duration, origin, destination, frequency, and so forth. It may be argued that feminists have had to retain the objects and categories of the field of transport in order for their studies to be recognised, accepted, and authorised as truths about travel. Feminists have regulated their statements about travel in order to be included in the transport fraternity.[22] None the less, this failure to challenge the

---

[22] J Bonham & D Ferretti, 'Imagining the Street: From Road Networks to Cultural Boulevards', in E Stratford (ed), *Australian Cultural Geographies*, Oxford University Press, Melbourne, 1999, pp109-30.

fundamental assumptions of the field of transport raises a number of problems for feminist researchers and policy makers.

First, the mainstream transport literature is founded upon the notion of a subject, the individual, which at its innermost core is a unique being that pre-exists society. Feminist transport studies have challenged the naturalisation of male and female travel differences, arguing this to be an outcome of the socialisation of women or the structuring of social relations. However, they have not interrogated the fundamental notion of the individual. It was argued in Chapter Three that the individual has come into effect at a particular historical moment and this 'individual's' innermost being is produced through the very public circulation of discourse. This theoretical position was used in Chapter Five to interrogate the assumption that the traveller is an individual who selects and discards transport resources at will. It was argued that the body has been worked upon through an intersection of power/knowledge relations to conduct movements in particular ways: to cross roads, drive motor vehicles, catch buses. Bodies have been objectified, conferred with identities, and incited to acknowledge themselves, more or less perfectly, as subjects of transport. Subjects of transport regulate their conduct according to the subject positions constituted through reference to the speed and order of different means of mobility: bus, foot, bicycle, car, skateboard, and so forth.

Second, and following from the first point, feminists, in accepting that the activity of travel derives from the origin and destination of the journey, have ignored the traveller as a subject in and of itself. Rather, the identity of the traveller is always assumed to be constituted through other sites, for example, the home, the workplace, and the community or shopping centre. The traveller and their travel practices are discussed through reference to women as subjects of non-travel activities, specifically wives, mothers, workers, carers, volunteers, and consumers. The identity of the traveller, like the journey, derives from the origin and destination of the journey. This mistaken identity has led feminists to focus on the privileging of certain destinations and individuals over others. For example, some feminists have criticised the intellectual and financial resources put into securing the journey to work, especially for male motorists, over journeys that women make to destinations of consumption or social activity by public transport or on foot.[23] Following from this, the privileging

[23] G Wekerle, 'Women in the Urban Environment', in R Stimpson et al (eds), *Women and the Amercian City*, University of Chicago Press, Chicago, 1981, pp200-4; E Harman, 'Capitalism, Patriarchy and the City', inB Cass (ed), *Women, Welfare and the State*, Allen & Unwin, Sydney, 1983, p108; D Hayden, *Redesigning the Amercian Dream*, WW Norton & Coy, New York, 1984, p151; J Wajcman, *Feminism Confronts Technology*, Allen & Unwin, St Leonards, 1991, pp110-36.

effects inherent within transport discourses have eluded any thorough-going feminist critique.

In failing to interrogate the transport conceptualisation of travel, modernist feminists have not only found it difficult to comprehend some journeys (note Hanson and Tivers), but also they have actively reinscribed the logic of transport and the travel order constructed through reference to that logic. Travel, conceptualised as a trip between two points that is generated through the activities at those two points, can be accomplished more or less economically. As a by-product of other activities, the journey should be undertaken as economically as possible to minimise waste (in time, energy, money, etc.) and to secure the economical operation of the urban environment. Following from this, journeys can be ordered into a hierarchy and privileged according to the efficiency with which they are conducted. Feminist transport studies have remained within the logic of transport (the economical journey) and consequently (re)inscribed the travel hierarchy and its privileging effects. Journeys continue to be ordered according to their economical conduct with slow, disorderly journeys being devalued over fast, orderly movement. In spite of their intentions, many feminists have fitted women's bodies into the transport hierarchy rather than challenging that hierarchy.

Because as modernist feminist writers have failed to question the objects, subjects, and language of the field of transport, they have been constrained to recreate the objective of transport research, namely, the economical conduct of the journey. They have also been fated to repeat the policy recommendations of mainstream transport theorists as they seek to guide female travellers in the economical conduct of their journeys, privileging the economical journey over all others. The following section examines how the specific objectives of feminist travel studies have informed the analysis of women's journeys and thereby assisted in (re)creating the transport hierarchy and the values which underpin that hierarchy.

Women in the Transport Hierarchy

As stated above, modernist feminist transport research has been underpinned by a concern to increase women's capabilities in participating in out of home activities. The point of the journey for these feminists has been the destination and the economic, social, and political opportunities opened up to women by engaging in the activities at those destinations. Women's liberation from the private sphere of the home, their ability to participate in the public domain, and their equality with men in

this sphere were seen to rely, in part, on their mobility. Women's mobility, the trip choices available and the constraint experienced by women in accessing destinations, was explored principally through comparisons of male and female trip characteristics.

Women's journeys were found to be more complicated than those made by men: they tended to be over shorter distances, to local destinations, and for different activities. Women's journeys also comprised more stops and frequently involved travelling encumbered by children and shopping. Further, women were found to be more likely to walk or travel as passengers, either by car or public transport, and less likely to have access to a car than men. These differences, it was argued, had significant implications for women's access to activities outside of the home and consequently their status within society.

Gender differences in journeys had been reported within mainstream transport research but they had not been interrogated by researchers. This failure to question trip differences effectively rendered them unproblematic. Researchers such as Hanson, Burnett, and Rosenbloom employed feminist theoretical frameworks to interrogate and explain gender differences in accessing destinations. These differences were explained in terms of patriarchal relations as expressed in the household, the workplace and the urban environment. Feminists examined: the relation between the domestic responsibilities conferred upon women and their trip making behaviour; the relation between women's journeys and their position in the labour market; and the influence of transport resources on women's use of public spaces and participation in public forums (e.g. political and community activities). The uneven social relations between men and women were found to work within and coalesce across sites to impede women's choices for all trip characteristics.

In analysing the role of women's mobility in their exclusion from, or marginalisation within, the public domain, modernist feminist transport studies have reproduced the dichotomies which pervade the modernist transport literature. Dichotomies such as transport and non-transport, public and private, freedom and constraint, choice and captive, mobility and immobility, independence and dependence, motorised and non-motorised have been used by feminists in comparing men's and women's journeys. Some feminist researchers have sought to revalue the devalued side of these dichotomies, but generally feminists have sought to secure women's equality with men in terms of mobility. Few have contested the categories of public and private, freedom and constraint, and so forth, or interrogated the limits set by each

dichotomy.[24] The remainder of this section turns to examine how feminists have (re)inscribed the transport hierarchy and the dichotomous relations it maintains.

The priority of movement accorded to those means of locomotion which attain higher speeds has meant that mode of travel mediates the duration of journeys, the distances traversed, the destinations reached, and consequently the activities that can be accessed. The following discussion is organised around mode of travel and examines the feminist literature in order to articulate the way it analyses women's level of access to different modes and the implications of each mode for the other trip choices available to women. This analysis is by no means definitive; it simply begins the task of examining how feminists have engaged with the dominant discourse on transport and the possible consequences of remaining within the bounds of the established field.

Journeys of Constraint

Jacqueline Tivers' research, introduced above, was set against the British context of excluding journeys by foot from the study of transport, and her work sought to demonstrate the gendered effects of this exclusion. Tivers' study made walking visible as a significant mode of transport in the daily travel routines of women. Through her work, Tivers attempted to revalue and reinsert the pedestrian journey into the fields of transport and urban planning. However, in these attempts to have walking included within transport discourses, Tivers actively closed out or devalued a range of other practices and interpretations of travel (e.g. health and travel), thereby losing the complexity of the journey, its value outside of transport, and its relation to the conduct of the journey. Further, Tivers' attempt to revalue walking as a mode of transport could only have limited success given the logic of the economic journey. Once inserted into the field of transport, walking was necessarily devalued through its positioning within the travel hierarchy. As a means of transport, walking does not maximise choice in terms of trip destinations when measured against the 'normal' vehicle distance or duration of journeys, therefore as a means of transport it is positioned as inferior to other forms of travel. Contrary to her intent, Tivers seems to have participated in undermining the very practice of walking itself and the diverse ways of conducting that journey.

---

[24] Kym England has attempted to disrupt the spatial entrapment theory. K England, 'Suburban Pink Collar Ghettos: The Spatial Entrapment of Women', *Annals of the Association of American Geographers*, 83(2), 1993, pp225-42.

Hanson and Hanson, like Tivers, also closed out other interpretations of walking in their comparison of men's and women's travel in Uppsala, Sweden.[25] However, in contrast to Tivers, Hanson and Hanson excluded these other possibilities of the journey by foot precisely in order to identify it as an inferior mode within the transport hierarchy. They argued, '...women walk more because of lack of alternatives than for reasons of health and pleasure'.[26] The implication of this 'lack' of modal choice is that women are impeded in their participation in activities in social, economic, and political life. Hanson and Hanson undermined the significance of other meanings of walking in an attempt to highlight gender differences in travel and access to destinations. They thereby sharpened a particular construction of travel 'inequality', that women walk and men drive cars, precisely through the derogation of the journeys' other possibilities. Tivers closes out these possibilities as she attempts to revalue walking as a mode of transport, while Hanson and Hanson close them out as they constitute walking as a mode which limits trip choices. Walking constrains women in the range (by type and location) of destinations they can reach and therefore confines them to the activities available within their local area.

Jones and Foy and Crafter, in their respective studies of suburbs in Adelaide, have reproduced this problematic of walking. In using an in-depth interview approach, Jones found amongst women respondents that 'Walking was seen only as a leisure activity, something to be done with the children when there was plenty of time...'.[27] In perceiving walking as a practice of leisure, Jones places both walking and leisure outside the task, and therefore the field, of transport. Foy's and Crafter's study uses data drawn from a quality of life survey undertaken in Salisbury, an outer northern suburb of Adelaide. The authors do not acknowledge walking outside of its transport possibilities and in these terms they, like Hanson and Hanson, represent it as constraint '...a 30 minute walk to the nearest deli and a 40 minute walk to the nearest shopping centre.'[28] Tivers' attempt to revalue walking within a transport context, too, is undermined by the 'failure' of this form of travel to enable long journeys: either in terms of distance or duration.

Walking and cycling, which rarely gains a mention in the feminist transport literature, are identified as *independent* modes of travel, as the individual has the transport resources necessary to the journey under their direct control. The individual

---

[25] Hanson and Hanson, *Geographical Review*. Although Hanson and Hanson are based in North America, no comment was made about the cultural differences between travel practices in Sweden and North America.

[26] Hanson and Hanson, p296.

[27] P Jones, 'Household Organisation and Travel Behaviour', in M Grieco, L Pickup & R Whipp (eds), *Gender, Transport and Employment*, Avebury, Aldershot, 1989, p59.

is, theoretically, wholly responsible for the timing, duration, route, destination, distance, and frequency of their journey.[29] However, these modes are identified as constraining women's choices in relation to the *distances* they can travel, the *duration* of their journeys, and therefore the *destinations* they can reach. Walking and cycling are also identified as constraining the *purposes* for which women might travel. For example, if the purpose of the journey is shopping or accompanying children, then women may have to carry packages or accommodate the physical abilities of their children – a task made difficult, if not physically impossible, by bicycle or on foot. Walking also limits women's choices in terms of the *timing* of the journey or the *route* they may take. Journeys by foot are more hazardous at night, in the heat of the day, or along dimly lit streets and sparsely populated estates.

The constraints of distance and trip purpose may be overcome, to some extent, through travel as a car passenger or on public transport and, according to Hanson and Hanson, 'Women relied to a far greater degree on public transport (bus) and on being driven to a destination...'.[30] British and Australian authors, such as Hamilton and Jenkins, and Foy and Crafter, have recommended increases in public transport coverage in order to address the constraints of walking. However, Rutherford and Wekerle are amongst many researchers who have investigated or commented upon the constraints imposed by public transport on the distance and duration of women's travel, specifically to employment destinations. Discourses on transport and paid employment are woven together within the feminist literature on urban travel as studies of the journey to work link together the home as the site of unpaid labour with the workplace as the site of paid labour. In their Canadian study 'Captive Rider, Captive Labor: Spatial Constraints and Women's Employment', Rutherford and Wekerle examine the gendered nature of the relationship between mode of transport used by workers and their employment mobility, across jobs and up the job ladder.

Rutherford and Wekerle explore gender differences in transport and employment through the established transport categories of 'choice' and 'captive' transit (public transport) user. The choice transit user, as indicated in Chapter Six, is an individual who has a car available for their use but, for whatever reason, has decided to use public transport. The captive transit user describes an individual who does not own or is unable to use a motor vehicle. Rutherford's and Wekerle's use of the terms

[28] Foy & Crafter, p5.
[29] Hanson and Hanson, p296.
[30] Hanson and Hanson, p295. Emphasis added.

'choice' and 'captive' serves to retain the dominant language of transport and so their work remains within the boundaries of the field of transport.[31]

Rutherford and Wekerle examine the individual as worker and transport user, constituting male workers using public transport as having 'freedom' of choice both in travel and employment. In contrast, female workers who use public transport are labour market and mobility captives. As *choice* public transport users, male workers are rewarded for their use of public transport as they are more likely to have highly paid, high status jobs, given that these jobs are concentrated in the city where public transport services are also concentrated - public transport is in their service.[32] Female workers are more likely to be identified as *captive* public transport users and they bear the burden of the spatial constraints of public transport through lower wages. Women's employment opportunities have been found by feminist geographers to be dispersed throughout metropolitan areas, while public transport networks serve particular locations, often central city areas where the jobs available to women have much lower wage scales. Although public transport offers women greater choice in destinations than walking, it still places spatial constraints upon them, leading in turn to employment constraints.

Women's lack of freedom in the labour market and their lack of freedom of movement are mutually reinforcing, as their inability to travel to high income employment opportunities undermines their ability to alternative access transport resources (such as motor vehicles). Following Feldman, Rutherford and Wekerle conclude that increasing the supply of public transport is a dubious solution, as it is likely to depress wages when large numbers of *cheap* workers (cheap because they cannot afford other forms of transport) are brought into an area. It is therefore not in the *real* interests of workers to have improved public transport, because it undermines their ability to randomly select employment and thereby resist the power of employers over workers.

Further, Rutherford and Wekerle argue that public transport not only places space and employment constraints upon women, but also it places greater constraints upon their time. As they state:

---

[31] B Rutherford & G Wekerle, 'Captive Rider, Captive Labour: Spatial Constraints and Women's Employment', *Urban Geography*, 9(2), 1988, pp116-37.
[32] This notion of the well paid worker using public transport to maximise their income was at the heart of a debate in the 1980s on whether public transport was inequitable, as it facilitated a redistribution of wealth in favour of the wealthy. D Hodge, 'Geography and the Political Economy of Urban Transportation', in *Urban Geography*, 11(1), 1990, pp87-100.

Using public transport means spending *more* time travelling and therefore having *less discretionary* time for family or other activities. Modes such as streetcars or buses may be *more* time consuming and frustrating than is rapid transit. Transit during off peak hours may be *slower* than it is during peak hours.[33]

Participation in remunerated work outside the home requires workers to use a certain amount of their time in travel, and public transport, according to Rutherford and Wekerle, is too costly for women in terms of the duration of the journey.

Stiles has expressed a similar concern about public transport to that raised by Rutherford and Wekerle. He argues that service operators do not value the time of their passengers, specifically women, because women's domestic labour is unpaid. Unpaid labour has, in the past, equated to unproductive labour, so that public transport services can be slow, circuitous, and tardy because they serve an 'unproductive' segment of the population. In identifying women's domestic labour as productive, it has been possible to argue for the provision of faster and more efficient public transport services.[34] This concern about time is certainly a reminder to public transport operators not to 'waste' the time of their passengers because they are on their way to engage in productive activities. However, it simultaneously reminds passengers that travel time is time 'inbetween' and as such it is not productive time.

The concerns of Stiles and Rutherford and Wekerle over the duration of the journey serve as reminders of the functional nature of urban travel. Travel is not an activity in itself but, as a by-product (unintended product, waste product, product available for secondary uses), it is the dubious outcome of other activities which necessarily consumes the resource of time. Further, the practices pursued on the bus, often morally suspect in themselves, such as chatting to, or observing strangers, relaxing, reading magazines or novels, and watching the scenery, are 'filling in' time rather than using it productively or constructively. Travel time is a 'forced' expenditure which directly competes with 'discretionary' and productive/ constructive ways in which that time might be spent. The female traveller trades her time in travel *for* time with the family (that is unpaid productive work at home) *or* time in other activities (perhaps the opportunity for constructive leisure). Following the argument of Rutherford and Wekerle, it seems that women as public transport users are captured on the bus doing unproductive or unconstructive time. Travel, as a dubious economic

---

[33] Rutherford and Wekerle, p119. Emphasis added.
[34] Hamilton and Jenkins, pp23-24.

and social undertaking, should be kept to a minimum, while those engaging in travel beyond the minimum requisite time may be in danger of 'wasting' time.

The term transit, generally used in relation to collective travel, sharpens the sense of being in between places or in transition between activities, and as such it is lost or wasted time. Time is the currency in which the traveller trades and, according to Rutherford and Wekerle, public transport trades 'more' than the normal amount of time in travel and reduces the time available for activities of the individual's 'choice'.

The passenger is *unproductive* by virtue of being in between destinations (activities) and in terms of her lack of participation in her own locomotion. The bus/car passenger does not put direct effort into her own locomotion and is therefore unproductive in relation to the (bus/automobile) driver whose actions ensure the movement of the vehicle. The passenger does not make her own journey but relies on others to transport her from one point to another. This reliance has been subsumed under lack of control over and responsibility for the journey. According to Hanson and Hanson, public transport and travelling as a passenger in a car are '...both modes of transport that *deny* individual independence in the choice of trip timing, duration and destination selection'.[35] The passenger, passive in *her* own locomotion (being driven), has been simultaneously constituted as passive through the trip decision-making process. As passengers, women are positioned as dependents and their travel is by reference/deference to (male) partners or a paternalistic State. The possibility that female travellers actively negotiate with their partners or choose their travel by bus is effectively refuted. Woman as a passenger is never 'chauffeured'; rather, she is a victim of the timetables of others. Women who are inactive in their own locomotion are consequently dependent upon others for their travel; they are not independent, self-reliant or responsible.

Modes of transport in which women are identified as taking control of their own travel, walking and cycling, limit the destinations women can access in terms of the distance, duration, and purpose of their journeys. Those modes of transport which allow women to travel greater distances, as car/bus/train passengers, put constraints upon women's independence and this lack of independence can also be read as 'lack of responsibility'. Feminists have recommended improvements in walking (but rarely cycling), and public transport facilities and services, depending on their own cultural

---

[35] Hanson and Hanson, p295. Emphasis added.

218

context. However, the logic of the economic journey frequently contradicts the implementation of such improvements: if the objective of the journey is to reach a destination as economically and efficiently as possible, then facilitating slow and disorderly journeys is counter-productive.

Overcoming Constraint

The logic of the economic journey necessarily limits the possible solutions to women's travel. The numerous stops women make, the difficult and cumbersome tasks they undertake, the inconvenient times at which they travel, the narrow time frames available between each activity, the 'awkward' locations they must access, in short, all the complex patterns women weave through the urban environment can be achieved with consistent efficiency only through resort to a motor vehicle. Many North American authors, but also Australian and British researchers, regardless of how sympathetic they are to non-auto modes of travel (Hanson's dedication to cyclists, Hamilton's and Jenkins' vehement demands for better public transport, Tivers' plea for improved pedestrian facilities), have often conceded the need for women to increase their access to automobiles.

The motor vehicle is consistently offered as the solution that does not take away gender differences but certainly helps overcome the *problems* of being a female gendered traveller. First, as wife and mother, the automobile enables women to manage their domestic and child care responsibilities better. The activities and relations within the home that both generate and constrain women's travel can be accommodated through ready access to a motor vehicle. The spontaneous lives of children can quickly change how, when, where, and often whether journeys can be made. The motor vehicle, always available, provides women with a means to accommodate this spontaneity, offering maximum choices in purposes (as designated by the journey's end), timing, frequencies, and number of stops.

Second, as worker, woman is constrained by her familial responsibilities or held captive by her position in the labour market. Most research undertaken into women's journeys has investigated the extent to which household characteristics or labour relations have impacted on women's work-related travel and their access to employment destinations (trip distribution). Motor vehicles not only make it possible for women to combine paid and unpaid labour efficiently, but also transport mobility is linked to labour market mobility. Policy recommendations which aim to increase women's access to motor vehicles are often framed in terms of providing women

with freedom of choice in employment through freedom of mobility. The motor vehicle in this instance shifts from a symbol of capitalist accumulation and individualism to a tool of the worker in overcoming capitalist oppression.

Third, as a female, woman is vulnerable in her use of public space, whether that be because of the spatial arrangement of the built environment or her vulnerability to attack. The route (trip assignment) she takes is constrained by the spatial and temporal context. Motor vehicles are seen to enable women to protect themselves from aggressors in different spatial and temporal contexts. Thus, through the different trip choice categories, the motor vehicle enables women to overcome their confinement in trip making.

Freedom and constraint, choice and captivity are linked in very particular ways to private and public forms of travel, as it is beleived that it is only through one's access to private travel, in the form of the motor vehicle, that women can make their journeys efficiently and maximise their choices. Hanson and Hanson, Rutherford and Wekerles, Stiles and many other writers, discursively bind women's freedom and constraint to particular modes of transport, specifically the car and public transport respectively. The automobile is not seen to provide women with freedom in quite the same way as it does men. Women are identified as relational in contrast to men who are autonomous and this weighs heavily upon women as travellers. Driving a motor vehicle allows women to take responsibility for their own transport as well as that of the family. As pointed out above, motor vehicles have been advertised to some groups of women as a means of enhancing, not negating, their roles as wives and mothers.[36] The possibility of 'Mum's Taxi' is enabled through strategies that invest travellers with responsibility for their own travel and that of their families. Feminists have participated in, rather than challenged, this rendering of women as responsibile for the mobility of others.

The consistency with which automobiles are identified as the solution to women's travel needs returns us to the two broad issues raised in the introduction. First, this solution ignores fundamental problems about women's trip choices including: the reasons that lead women to feel so vulnerable in public space that they resort to car ownership; the issue for carers that their car ownership is bound up with having to transport children; or the financial burden car ownership poses, especially to lower

---

[36] See also: V Scharff, 'Putting Wheels on Women's Sphere', in C Kramarae (ed), *Technology and Women's Voices*, Routledge & Keegan Paul, New York, 1988a, pp135-46; V Scharff, *Taking the Wheel: Women and the Coming of the Motor Age*, Free Press, New York.

income earners. As pointed out in the introduction these latter problems are not exclusive to women, nor are they problems for all women, but they have been identified within the feminist literature as particularly relevant to women. Further, getting women into automobiles does not address the human health and environmental consequences of car usage, from respiratory diseases and carcinomas to water pollution and the greenhouse effect.

Second, the consistency of the automobile solution suggests that the way travel is problematised is itself problematic. If urban travel could be understood beyond transport, the economic journey, would it be possible to arrive, so confidently, at solutions which privilege the fastest and most orderly travellers over the 'slow' and 'disorderly'? This question is not to romanticise the difficulties women, amongst others, might face in their journeys. Rather, it is to suggest that by working within the logic of the economic journey, feminists will continue to reproduce the hierarchy of transport, the ordering of journeys according to economical principals, and the privileging of some travellers over others. Further, in knowing travel as transport, feminists and the women they speak to are left with nothing to say about travel unless it is in relation to their 'problems' in making their journeys efficiently and economically. The following section draws on women's travel stories to explore alternative ways of understanding travel and bring new travelling subjects into effect.

Re-Reading Women's Travel

From the late 1960s, women's ability to negotiate urban space was being problematised in English-speaking countries through reference to the trip choice standards set by the motor vehicle. Imagining space almost exclusively as a problem to be overcome, rather than a place to 'be' in, researchers were led to catalogue those factors which inhibited women reaching destinations. In producing this catalogue, women were heeded in relation to the problems they experienced in transporting themselves and their children through the urban environment. In discussing walking, Tivers stated:

> In this survey, on the other hand, 81 per cent of respondents state that they find no difficulties at all with walking to various places with their children.[37]

In regard to public transport, she states:

---

[37] Tivers, p188.

Perhaps surprisingly, 37 per cent (80 respondents) of those using buses admit to no particular problem.[38]

Tivers provided a detailed list of the difficulties women experience in boarding and alighting buses, controlling children while travelling on public transport, the speed or ability of children to walk long distances; traffic problems; and problems or difficulties with pushers and strollers. However, in focusing upon problems, Tivers could not elaborate on the 'problem-free' journeys. Women who experience walking or public transport use without any problems are effectively silenced as the only stories represented are those of lament.

Further, travel by motor vehicle and the problems it may raise have not been interrogated. In questioning respondents about automobile usage, Jacqueline Tivers problematises the availability of the car not the vehicle itself. For example, her questions include: Do you have a car in this household? Is there a car available for you to use during the daytime on weekdays - that is, is there normally one here, not on special occasions? Do you hold a current driving license?[39] The only *problems* women were expected to express in relation to motor vehicles were in terms of its availability. If women have a motor vehicle available, it is assumed they have nothing further to say about their journeys; they, like women who have different experiences of walking, travelling as a passenger, or using public transport, are effectively silenced.

Stories told by women such as Mary Kay Blakely have generally gone unheard. In her description of car-pooling in Connecticut, Blakely includes a discourse on parenting in which the journey to school provides a space in which to be with her children:

> Given the lousy hours, the minimal recognition, and the enormous frustration, it takes a great deal of imagination to regard car-pooling as "quality time" with children. Fortunately, women have an abundance of imagination.
> ...
> It's clear that car-pooling is not a relaxed, amusing way to spend time with children, but it's the time we have, and time, for any mother, is not to be wasted. That is, overwhelmingly, what impresses me about the faces I see behind the wheels. Watching the furrowed brows and querulous eyes, the earnest reminders and affectionate pats - the innumerable rituals that accompany parting with children for the day - an exceptionally moving

---

[38] Tivers, p184.
[39] Tivers, p314.

picture emerges for me. It is a glimpse of women in love, and in touch, with their children.[40]

Blakely, like many other women, tells her travel story from the subject position of mother but her journey is more complex than getting to the destination. The rituals created in the process of these journeys are not 'filling in' time, nor can they be regarded simply as an example of the impoverished relations between mothers and their children brought about through 'lack of time'. Blakely's story is not a lament; rather, she tells a travel story rich with social interactions and meanings outside of/in between destinations. Her journey is filled with numerous, tangled, and contradictory emotions, but, as 'the time we have', the journey to school is part 'Sunday drive' part 'family bike ride'. Blakely inscribes urban travel with a discourse on parenting which values spending time with children as much as facilitating their participation in activities outside the home.

Although Blakely's story demonstrates how journeys come to take on other possibilities, the story risks returning to an on-going concern with not wasting time. The rituals of travelling with children can be understood as making travel time into productive parenting time (just as people who continue their paid work on the bus or train when they leave the office) rather than creating a journey with children.

The stories reported at the outset of this chapter are rich with interpretations of travel. They tell of replacement and displacement, acts of knowing and claiming places, relations and negotiations between travellers, and reflections upon those encountered both between and within place. The reminiscences of British settler Mary Thomas registers her tentative claim to the place in which she travels. The practice of the journey, naming places, physically locating others, and describing her path inscribes a new knowledge and new claim upon the land. However, this journey also indicates a gap in her knowledge of the cultural landscape ('...I was not aware that the whole native tribe was in the neighbourhood...') and the uncertainty of her place within it ('...I walked on, nodding to those who nodded to me').

Mary Thomas registers the fear that might accompany the lone, woman coloniser, while a century later Fran Kernot turns her displacement from the land back upon hostile, or fearful, members of the white community. Fran, a member of the Narrinyeri not the Kaurna peoples, has (re)placed herself in Adelaide and resists the racism expressed with the quip, 'It's all right, lady. The colour won't come off'.

---

[40] M K Blakely, 'On The Road Again, And Again And Again', *Ms*, April 1986, p14 & p2.

Fran's comment, however intended, provokes laughter from the other bus passengers. The laughter might be read as a widespread disapproval with the overt racism of the mother, or it might be read as relief from the other passengers, a tense situation averted - she won't cause trouble, she's like us. None the less, it is a polite refusal on Fran's behalf to be subjected to acts of racism.

VM combines the position of the housewife with that of the flâneur as her journey provides a point of entry into reflections upon war, women, and the condition of society. The housewife in the public domain has much to say about that domain. Liana France uses her journey through the public domain to deepen and cement her friendship. The flow of conversation is linked to particular places ('When we reach the lake...we make the comment 'Why would anyone want to fish here?', 'Why would anyone want to fish at all?') as past observations are re-stated, or new information is shared ('Conversation is usually dominated *then* by whoever decided to go around the lake...'. Emphasis added.). The statements (old and new) and the silences together with their timing and place make this journey into a ritual.

It is precisely these 'other' possibilities which Susan Hanson closes out of her text when she juxtaposes the family bike ride with trips designated as transport, such as the trip to the shop. Clearly a cycling enthusiast, given the dedication at the opening of her book *Urban Transportation*, Hanson closes out this enthusiasm in line with the serious stuff of transport. Hanson does not recognise or acknowledge how this very closure in itself affects the possibilities of how journeys are simultaneously known and practised. Even if most urban travel could be reduced to a by-product of its destinations, this does not of itself exclude other motivations or meanings being practised through the journey.

In closing out other experiences, the literature on women's travel has not only delimited particular ways in which women can tell their stories or interpret their travel, but also it forecloses how they can be listened to and what other travel practices might go unacknowledged. We can only wonder at what Rutherford's and Wekerle's 'captive' and 'choice' travellers might have said if given the opportunity to tell their travel stories. Perhaps he might explain that 'his' partner uses the car during the day to access his/her highly paid job in the suburbs or take the children touring so he has no choice but to catch the bus to work. Perhaps 'she' might explain that 'she' prefers to catch the bus to her poorly paid job in the city because 'her' partner takes the car to 'his/her' poorly paid job in the suburbs. Perhaps she prefers to work in the city because of a raft of other 'non-work' possibilities offered within the

city (part-time study, drama school, friendship networks, liveliness of cities) and hence has decided it is unnecessary to own a car. Perhaps she believes a car to be a waste of money which does not give her freedom but causes her considerable stress. Perhaps she does not need a highly paid suburban job because she does not need to run a car. Perhaps she is angry because she hates public transport and her under-paid job in the city has limited her choices and entrapped her in a difficult life. Following Dowling and Gollner, women may draw upon a range of different discourses to explain their travel; not owning a car only makes a person a captive if our freedom is understood as being derived from our ability to move and specifically at the level of mobility afforded by a car.

Both Elaine Stratford and Robyn Dowling have argued the need to listen to women's explanations of their travel experiences. However, it must be recognised that these explanations are themselves mediated by the subjectivities made available to and assumed by women. Rather than listening to women for some fundamental truth about urban travel, their stories might be analysed in terms of how women have been produced as subjects of transport through discourses of transport; how this subjectivity is inscribed in and manipulated through policy documents produced by a range of agencies interested in shaping the conduct of the population; and the practices through which subjectivities are assumed or resisted, and the consequent privileging enjoyed or rejected through these practices.

In assuming transport as derived demand and the transport categories of choice which make up the trip, the motor vehicle is once again positioned as the most economical form of transport as it makes people responsible for their own travel and that of their families, thereby reducing mobility costs to society. The automobile has maintained its privilege through being produced as the only form of transport to offer choice. Therefore, any alternatives to the motor vehicle are immediately inferior because they do not provide the same degree of choice. Further, the provision of improved forms of public transport has often been on the basis of women's unequal position. Improving public transport will improve women's opportunities. However, given that the motor vehicle provides the most choice within a transport meaning of urban travel, then improving public transport only provides a partial measure and as such may be ignored. If we contemplate urban travel as having a myriad of meanings and possibilities, then choices are opened up via whatever form of travel one takes. To challenge the privilege of the motor vehicle and the motorist requires that the notion of transport as derived demand is itself challenged. The transport discourse successfully promotes the motor vehicle because this form of travel provides

maximum choices in terms of the transport framework of trip choice categories. To challenge this discourse requires demonstrating the multiplicity of choices outside of leaving one place in order to arrive at another. If choice is constituted in terms of meanings and practices rather than destinations, then it may be possible to re-value other ways of travelling.

Conclusion

This chapter has demonstrated how authors writing about women and transport have participated in the production of the transport discourse by failing to question the meanings or categories of that discourse. In accepting a transport meaning of urban travel, they have re-inscribed the economic journey and the privileging enabled by that meaning. Further, in accepting transport as derived demand, the transport problem for women has been constructed as one of not having that demand met. The solutions then are in terms of how that demand might be met and the strategies identified have included: changing the shape of the urban environment; increasing women's car usage; and improving public (including 'community') transport networks. All of these responses deny women's diversity.

The first fails to consider those women who prefer suburban rather than urban lifestyles and the importance of providing a variety of choices. The second solution, increasing women's car ownership and use, denies the importance to some women of the choice not to own or use a car and entrenches the norm as motor vehicle use. Conversely, the third solution denies the importance to some women of having a car available. Further, calls for improvements in public transport can readily be ignored by transport planners in those instances where the journey by car is faster than by bus or train. In this latter case, investments in public transport will not facilitate the efficient conduct of the journey.

Transport professionals (planners, administrators, and researchers) provide only one way of telling travel stories. Feminists need to explore new ways of talking about and analysing journeys if they are to disrupt, rather than slot women into, the existing order of urban travel. This chapter has already made some tentative steps in this direction. It is through tracing out diverse meanings and practices of urban journeys that researchers are likely to create new ways of resisting the present organisation and hierarchisation of spaces, bodies, and performances of travel.

9

CONCLUSION

This thesis began with the observation that feminist stories about women's urban travel have come to sound like nagging. It appeared that feminists were speaking the 'problem' of women's mobility in such a way that particular claims and policy recommendations (e.g. improvements in conditions for those who walked or caught public transport) could be readily ignored. The metaphor of nagging has provided a useful point from which to reflect on the field of transport. In this final chapter, I would like to begin by exchanging Morris' domestic metaphor for the sporting metaphors that seem to be favoured by some male transport professionals.[1] Sporting metaphors are certainly problematic but they do provide another way of contemplating feminist approaches to urban mobility.

The transport discussion takes place on a field that has been laid out, over time, by men. The ground markings, game rules, scoring system, and goals have been firmly established through the interactions of mainly male engineers, economists, planners, medical researchers, and psychologists. It appears that many feminists have entered this arena believing it to be the only way of addressing what they understand as women's mobility concerns. Of course, this game plan has meant playing on the established surface and by the existing rules. Feminists entering the discussion of transport have been obliged to reflect upon, create knowledge about, and intervene in the field according to well entrenched procedures. Some feminists, like myself, have been troubled by the apparent biases in the field, from its surfaces of exchange, scoring system, and shadowy referees, to the fact that some players never seem to lose while others never get to win. Feminist transport researchers, in agreeing to discuss urban mobility in the same way as their male colleagues, are bound to reproduce the differential valuing of journeys.

In order to explore the different values attributed to different types of journeys, I have stepped away from theories of urban travel which explain travel practices in terms of the evolution of urban life or the relations of power inherent to capitalist and/or patriarchal societies. As stated at the outset, these overarching theories offer little hope of changing dominant practices. Further, they ignore all those actions which disrupt, resist, or otherwise undermine the economical conduct of the journey. This study has drawn on the insights of post-structuralist theorists to argue that the use of language (discourse) is an

---

[1] Thanks to my colleague, Donna Ferretti, for bringing this metaphor to my attention.

important, but disparate and unstable, mechanism through which human beings make meanings about their travel. In particular, I have examined the ways in which the spaces, bodies, and conduct of travel have been brought into discourse and the effects of these discursive techniques. This close attention to language has made explicit the historical and cultural specificity of contemporary discourses on, and practices of, travel. Further, it has made apparent the way in which different discourses have coalesced at a particular historical moment thereby enabling, entrenching, and ultimately naturalising the valuing of some travel practices (fast, orderly, uninterrupted) and some travellers (motorists) over others.

The ordering of the 'Adelaide' landscape into streets and the minute internal arrangement of street spaces has been fundamental to the production of a discourse on transport. As pointed out in Chapter Four, discourses on health, safety, morality, economy, planning, and engineering, were deployed throughout the nineteenth and twentieth centuries to intervene in the spaces of the street and the conduct of urban inhabitants upon the street. These discourses are essentially different ways of objectifying the lives of urban populations and they enable experts to develop a multiplicity of tactics as they seek to guide the conduct of the population.[2] At times, the strategies that are elaborated through these discourses act to target urban subjects in contradictory ways (e.g. clashes over the cutting through of Adelaide's public squares). At other times, these strategies have coalesced to facilitate and entrench particular uses of street space (e.g. filling in pot holes and tar paving address the health of the population and economical conduct of its movement). Changes in the internal organisation of the street and conduct upon it have opened new ways of reflecting upon the urban population which, in turn, have multiplied the strategies and tactics through which the urban population might be governed. It is precisely these discursive mechanisms which have enabled economical movement (in terms of the time and energy used for a journey and expressed more generally in terms of 'speed') to become a principal mechanism for the organisation of street space.

This ordering of street space was (and continues to be) inextricably linked to discourses on the body as/and the machine. The 'problem' of road crashes provided an important focus for researchers to think about the interaction between travelling bodies and travelling machines. Chapter Five traced out the production and effects of these knowledges. One of the most profound effects of the proliferation of road safety discourses has been the marginalisation of all other ways of speaking about the negative consequences of modern travel practices. Further, a new set of knowledges has been created about road accidents:

---

[2] T Osborne & N Rose 1999, 'Governing Cities: Notes on the Spatialisation of Virtue', Environment and Planning D: Society and Space, 17, pp737-760.

the conditions under which accidents occurred (time, place, location on the street, weather conditions, etc.); the modes of travel involved (animal, human, mechanical, characteristics and qualities of vehicles); and the persons who were involved (age, gender, actions at the time of the accident, etc.). These knowledges have enabled new techniques and tactics to be devised and deployed to guide the conduct of urban travel.

The disciplines of psychometrics and psychology were important in producing knowledge about the physiology of the body that travelled. Researchers teased out those capacities of the body necessary to interacting with machinery, whether the body was in charge of the machine (e.g. a driver) or negotiated its passage around the machine (e.g. a pedestrian). Having identified these capacities, psychometrists could examine the body in relation to the machine for reaction times, acuity of vision, hearing, concentration, neuro-muscular co-ordination, and so forth. The information they gathered was used in sorting, comparing, and ranking bodies, which, in turn, enabled norms to be established and bodies to be positioned in relation to those norms. Bodies that fell outside of the bandwidth of the optimal norm were excluded, by degrees, from interacting with vehicles. Some bodies were able to interact at the level of walking, cycling, or using public transport but they were excluded from driving. Only those bodies located within the range of the optimal norm could take up the subject position of the motorist. As norms have been established in reaction times, vision, hearing, etc., the interaction of bodies with machines has also been naturalised. Individuals have been incited to take up and discipline themselves according to the position which asserts their normality - the motorist.

The gross ordering of urban street spaces together with the minute ordering and development of the body's capacities have facilitated the reflection upon travel as 'transport'. Transport provides a way of thinking about 'what is to be governed' (urban movement) that makes the practice of governing it (travel) both thinkable and practicable.[3] Reflecting on journeys as 'transport tasks', has enabled transport professionals to create a raft of instruments by which to scrutinize the journey and determine the 'actual' amount of time and energy expended in completing each journey. Further, transport experts have devised an entire vocabulary through which to carry on the discussion of travel. Terms such as 'trip', 'derived demand', 'generator', 'desire lines', 'origin-destination', 'purpose', 'flow', and 'platoon', provide transport experts with a way of imagining and communicating travel stories. From these stories, tactics and strategies are developed to guide the travelling subject toward the economical conduct of their journey.

---

[3] This idea, borrowed from Colin Gordon's discussion of rationalities of government, seems equally applicable in thinking about specific governmental strategies. C Gordon, 'Governmental Rationality: An Introduction', in G Burchell, C Gordon & P Miller, *The Foucault Effect: Studies in Governmentality*', University of Chicago Press, Chicago, p3.

Chapter Six demonstrated the application and effects of the language of transport in the context of Adelaide. By using the 'trip choice' categories, transport researchers could transcribe journeys into numbers then measure, compare, and rank these journeys according to their economical conduct. Once again, these procedures allowed norms to be established in relation to movement but this time at the scale of the urban environment. Movement was gradually normalised, from the minute details of eye and muscular actions through to the gross actions necessary in moving along the street and across the city. Travellers could be positioned in relation to a series of norms and in each case the motorist was found to be the optimal traveller. Those travellers identified as deviant in studies of the street or the body were readily omitted from the routine study of journeys at the metropolitan scale. The origin-destination surveys implemented from the 1940s onward re-inscribed the marginalisation of these 'problem' travellers. These travellers continued to be brought under scrutiny but they were observed and intervened upon for their deviancy.

The normalisation of the rapid, orderly, uninterrupted journey has operated to naturalise both the economical conduct of travel (the transport journey) and the use of the motor vehicle. This process of naturalisation serves to position all 'non-transport' journeys as deviant and all non-motorists as 'unnatural' or 'abnormal'. This naturalisation of transport and the motor vehicle has several important effects. First, travellers are incited to take up the position of the motorist because in doing so they are identified as 'natural' or 'normal' (fully human). Second, as this traveller regulates their journey in line with the 'norm' they also regulate the behaviour of all other travellers. The motorist does not dominate other travellers, as argued by Lewis Mumford.[4] Rather, motorists regulate other travellers at the same time as regulating themselves. Finally, the naturalisation of the transport journey and the subject position of the motorist places these phenomena outside of the political domain. Put another way, the interactions between travellers are identified as social relations and, as such, the exercise of power which imbues these relations are placed beyond interrogation.

To date, critics of contemporary urban travel practices have had limited success in changing these practices. The free-way projects planned for Adelaide in the 1960s were not built in the form recommended; however, MATS was essentially deferred rather than abandoned. The clover leaf interchanges, overhead roads, underground railways, and concrete embankments were cancelled but the routes laid out in the 1968 plan have continued to guide transport planning in Adelaide throughout the past 30 years. Further, automobile use has continued, and in fact been entrenched, as the pre-dominant form of travel in Adelaide. As pointed out in Chapter Seven, the reason architects, urban designers,

environmentalists, and social scientists have failed to bring about deep and lasting changes in urban travel is because they have failed to question the naturalisation of either the motorist or the economical journey.

Architects Rolf Jensen and Newell Platten, amongst many others, invoked the subject of liberal discourse as they identified the use of a motor vehicle as an expression of the natural desire of the free individual.[5] Critics of the free-ways were concerned about the negative effects of the individual's choices upon urban society, specifically: society's appreciation of the aesthetic; environmental quality; supply of social goods; and ultimately social cohesion. These commentators assumed the existence of both the self-interested individual whose actions stimulated the economy and the social being that relied for its existence on community cohesion. Retaining these categories of the economic and social, individual and community, free-way critics linked the motor vehicle to self-interest and public transport (walking, cycling) to social responsibility. The natural desire to use the automobile provided a starting point for transport planning. For the overall good of society, this desire had to be kept in check through the supply of public transport services. The naturalisation of motor vehicle usage operated, once again, to position all other means of travel as deviant.

Feminists have also attempted to get the mobility issues of women recognised by transport policy makers and planners. They have disrupted the naturalisation of the social positions assigned to men and women as well as the travel behaviour associated with those positions. However, they have not interrogated the naturalisation of travel itself. They have continued to assume that travel is essentially a question of moving between locations. This has condemned feminists to fall into line with traditional transport researchers and continue the differential valuing of journeys. Further, as the economical journey and the motor vehicle have been established as the norm, women have been identified as 'deviating from the norm'. Feminists have argued this deviancy does not arise from any natural characteristics of women but from their specific disadvantage. Put another way, women would be 'normal', in terms of their mode of travel and the economical conduct of their journeys if they were not disadvantaged by their roles as wives, mothers, and carers. Women have been incited to position themselves as closely as possible to the travel 'norm' and an important step to achieving the normal journey is to obtain a motor vehicle. This solution

---

[4] L Mumford 1961, *The City in History*, Penguin, Harmondsworth.
[5] R Jensen 1968, 'Commentary on the MATS Report Proposals and the Adelaide Development Plan', *The Metropolitan Adelaide Transportation Study and the Future Development of Adelaide*, Conference Proceedings, University of Adelaide, Adelaide; N Platten 1968, 'The Effects of MATS on the Urban Environment', *The Metropolitan Adelaide Transportation Study and the Future Development of Adelaide*, Conference Proceedings, University of Adelaide, Adelaide, pp110-112.

operates to (re)inscribe the motor vehicle as the norm and (re)position the motorist in regulating all other travellers.

This thesis has used post-structuralist and feminist theoretical insights to open the field of transport to question. The work begun in all of the preceding Chapters could benefit from further research and elaboration. The ordering of street spaces has not been finally settled. These spaces are re-made, and resisted, as sites of circulation on a daily basis. Researchers might begin to explore those instances of resistance or negotiation where the travel hierarchy or circulation itself are momentarily placed in doubt or suspended. Georgine Clarsen's work on the gendering of travel technologies in the 1920s resonates with the story of the relation between spaces, bodies, and mechanisms of mobility (mechanical, human, or otherwise), commenced in Chapter Five.[6] This relation could be explored through categories of class, race, gender, and sexuality.

There is still more work to be done on all those discursive techniques that have enabled urban travel to be transcribed into documentation. These latter studies would assist in challenging the normalising and naturalising effects of transport knowledge. Further, the effects of discourses which establish male and female travel 'norms' might also be brought under scrutiny. Finally, this study has not considered the implications of changing rationalities of government on the government of urban travel; however, this line of investigation is likely to be quite fruitful.

The most important work to be done in the study of travel is to de-naturalise the transport conceptualisation of the journey, the economical traveller, and the use of the motor vehicle. In this respect, the present study is a beginning rather than an ending. It has demonstrated the breadth of insights to be gained from applying post-structuralist and feminist theoretical frameworks to the field of transport. Rather than continue in the traditional vein of transport research, I have argued that feminists should consider new ways of telling travel stories. As new stories are told, researchers and policy makers are likely to find alternative ways of challenging the normalisation of the motor vehicle and the authority of transport professionals in ordering and intervening in the spaces, bodies, and conduct of urban travel.

---

[6] G Clarsen 2000, '"The Dainty Female Toe" and the "Brawny Male Arm": Conceptions of Bodies and Power in Automobile Technology', *Australian Feminist Studies*, 15(32), pp153-63.

REFERENCE LIST

HISTORICAL SOURCES

Newspapers, Newsletters and Journals
Adelaide Independent
Advertiser
The Australasian Engineer
British Medical Journal
Housewife
The Human Factor
The Lancet
Mail
Medical Journal of Australia
Mental Hygiene
Observer
Psychological Abstracts
Register
South Australian Motor

Adelaide City Council Archives
Annual Reports: 1908; 1911; 1912; 1913; 1914; 1915; 1916; 1919; 1921; 1936-37; 1947; 1954-55; 1957-58; 1958-59;1959-60.
By-Laws: 1871; 1874; 1906.
Mayoral Report: 1890-91; 1895-96;1898-99; 1899-1900;
Parking and Traffic Control File: Report on the Human Factor in Traffic Accidents, 1934, Accession No. 34.
Parking and Traffic Control File: Motor Cars Standing in Streets, 1923, Accession No. 34.
Report of Committee Appointed to Enquire into the Duties of the Inspectors of Nuisances: 1858, ECR/0059 BD3D:01, NU 1858, 0730.
Reports of Inspectors of Nuisances: 1849-1850, ECR/0038 BD2:01.
Reports of the Committee of Streets, Sewers and Bridges: 1852, ECR/0030 BD2B:01.

Mortlock Library of South Australia
JD Allen, Diaries 1851-7, 5028 (L).
Pictorial Collection, B22415, B691, B14968, B13403.

South Australia, Government Gazettes
Education Gazette.
Government Gazette.

South Australia, Parliamentary Debates

Debates: 1859; 1874; 1895; 1904; 1907; 1908; 1910; 1913; 1917; 1918; 1920.

South Australia, Parliamentary Papers

Adelaide, Glenelg and Suburban Railway Bill, Parl Paper 106, 1871.

City of Adelaide By-Laws, Parl Paper 142, 1868.

Commissioner of Police - Reports: 1916; 1920; 1926; 1930; 1931; 1937.

Committee Appointed to Report on the Municipal Tramways Trust Adelaide: Interim Report, Parl Paper 22, 1952a.

Committee Appointed to Report on the Municipal Tramways Trust: Final Report, Parl Paper 22A, 1952b.

Director General of Transport: Report on Public Transport in the Adelaide Metropolitan Region, Parl Paper 109, 1972

Engineer of Roads and Bridges: Report on Road Systems in America and England, Parl Paper 65, 1922.

Government Town Planner: Report on Planning and Development of Towns and Cities in South Australia, Parl Paper 63, 1919,

Highways and Local Government Department - Annual Reports: 1926-27; 1927-28; 1928-29; 1929-30; 1930-31; 1931-32; 1932-33;1945-46; 1946-47; 1947-48; 1948-49; 1949-50; 1952-53, 1954-55; 1955-56; 1957-58; 1958-59; 1959-60; 1960-61; 1961-62; 1962-63.

Honorary Committee Appointed to Report upon The Road Traffic Act 1934: Report and Recommendations, Parl Paper 20, 1936.

Local Government Department - Annual Reports: 1917-18: 1918-19; 1924-25.

Railway Commissioner's Regulation No.21, Parl Paper 50, 1908.

*Registrar General: Annual Reports - Births, Deaths and Marriages:*1915, 1916a, 1916b.

Royal Commission on Railway Construction: Report, Parl Paper 22, 1875.

Royal Commission on Railways: Report, Parl Paper 33, 1903.

Royal Commission on Main Roads: Report, Parl Paper 22, 1908.

Royal Commission on State Transport Services: Third Interim Report: Traffic Within the City of Adelaide, Parl Paper 15, 1951a.

Royal Commission on State Transport Services: Final Report, Parl Paper 17, 1951b.

Royal Commission on Traffic Control: First Progress Report, Motor Bus Traffic, Parl Paper 56, 1926.

Royal Commission on Traffic Control: Second Progress Report: Control of Road Freight and Passenger Services, Parl Paper 56, 1927.

Royal Commission on Traffic Control: Third and Final Report, Parl Paper 56, 1928.

Royal Commission on Transport: Report, Parl Paper 20, 1938, p2.

Select Committee Appointed to Report on the Adelaide and Suburban Tramways Bill: Report and Minutes of Evidence, Parl Paper 49, 1876.

Select Committee of the House of Assembly: Report on the Motor Vehicles Bill 1918, Parl Paper 77, 1918.

Select Committee of the Legislative Council: Report on the Victoria-Square Thoroughfare Bill, Parl Paper 159, 1883.

Select Committee on the Motor Omnibus Bill: Report, Parl Paper 51, 1925.

Statistical Register of the State of South Australia: 1899; 1912; 1919; 1916; 1921; 1926; 1928; 1930; 1936.

Town Planning Committee, *Report on the Metropolitan Area of Adelaide*, Government Printer, Adelaide, 1963.

South Australia, Statutes

'Ordinance No 19, 1844', *Acts and Ordinances of the Governor and Council of South Australia*, 1844.

'Ordinance No 11, 1849', *Acts of and Ordinances of South Australia*, 1849.

'Municipal Corporations Act, 1880', *Acts of the Parliament of South Australia*, No 190, 1880,

'The Municipal Corporations Act, 1890', *Acts of the Parliament of South Australia*, No 497, 1890.

'The Motor Traffic Regulation Act, 1904', *Acts of the Parliament of South Australia*, No 866, 1904.

'The Municipal Tramways Trust Act, 1906', *Acts of the Parliament of South Australia*, No 913, 1906.

'The Motor Vehicles Act, 1907', *Acts of the Parliament of South Australia*, No 938,1907.

'The Local Government Act, 1910', *Acts of the Parliament of South Australia*, No 1033, 1910.

'The District Councils Act, 1914', *Acts of the Parliament of South Australia*, No 1182, 1914.

'Motor Vehicles Act, 1921', *Acts of the Parliament of South Australia*, No 1480, 1921.

'Road Traffic Act, 1934', *Acts of the Parliament of South Australia*, No 2183, 1934.

'Amendment Act (No 2) to "Motor Vehicles Act, 1960"', *Acts of the Parliament of South Australia*, No 55, 1960.

State Records Office

City of Adelaide, Traffic Survey – Report prepared by the City Engineer and Surveyor 1957,GRS 266.

Coroner, Statistics 1932, GRG 5, Series 44, 1932; SRO: GRG 5, Series 2.

Municipal Tramways Trust, Board Room Letter Books 1907-35, GRG 22, Series 30.

_____ Press Cuttings, Vol. 9, 1945-48, GRG 22, Series 51.

_____ Press Cuttings, Vol. 10, 1948-52, GRG 22, Series 51.

_____ Proceedings of the Australasian Tramways Officers Association Third Conference, GRG 22, Series 19.

_____ Agency Registration Sheet, GRG 22.

Police Department of South Australia, Correspondence, GRG 5, Series 2.

REFERENCES

Adler S, 1987, 'Why BART but no LART? The Political Economy of Rail Rapid Transit Planning in the Los Angeles and San Francisco Metropolitan Areas, 1945-57', *Planning Perspectives*, 2, pp149-74

Alexander C, Ishikawa S, Silverstein M, Jacobson M, Fiksdahl-King I & King S, 1977, *A Pattern Language*, Oxford University Press, New York.

Allan A, Taylor MAP & D'este G, 1996, *Adelaide 21: Access and Movement*, Adelaide 21 Steering Committee, Adelaide.

Amery R, 1998, *Warrabarna Kaurna: Reclaiming Aboriginal Languages from Written Historical Sources: Kaurna Case Study*, PhD Thesis, University of Adelaide, Adelaide.

Ampt E & Rooney A, 1998 'Reducing the Impact of the Car - A Sustainable Approach: TravelSmart Adelaide', *Proceedings of the 22nd Australasian Transport Research Forum*, Transport Data Centre - NSW Department of Transport, Sydney, pp805-22.

Anderson S, 1978, (ed), *On Streets*, MIT Press, Cambridge, Mass.

Appleyard D & Lintell M, 1969, 'The Environmental Quality of City Streets: The Resident's Viewpoint', *Journal of the Amercian Planning Association*, 35, 1969, pp84-101.

Appleyard D, Lynch K & Myer J, 1964, *The View from the Road*, MIT Press, Cambridge, Mass.

Atkins S, 1989, 'Women, Travel and Personal Security', in M Grieco, L Pickup & R Whipp (eds), *Gender, Transport and Employment*, Avebury, Aldershot, pp169-89.

Australian Bureau of Statistics, *Census of Population and Housing 1986*, ABS, Canberra, 1989

_____ *Cdata96*, Commonwealth of Australia, ABS, Canberra, 1999

_____ *South Australia: A Statistical Profile*, ABS, Adelaide, 2001.

Badger G, 1968, 'Opening Address', *Metropolitan Adelaide Transportation Study and the Future Development of Adelaide*, Conference Proceedings, University of Adelaide, Adelaide.

Barrell D & Hills P, 1972, 'The Application of Cost-Benefit Analysis to Transport Investment Projects in Britain', *Transportation*, 1(1), pp29-54.

Barrett M, 1991, *The Politics of Truth*, Polity Press, Cambridge.

Barry A, Osborne T & Rose N, (eds), 1996, *Foucault and Political Reason: Liberalism, neo-Liberalism and Rationalities of Government,*, UCL Press, London.

Bastalich W, 2001, *Politicising the Productive: Subjectivity, Feminist Labour Thought and Foucault*, PhD Thesis, University of Adelaide, Adelaide.

Beckman J, 2001, 'Automobility: A Social Problem and Theoretical Concept', *Environment and Planning D: Society and Space*, 19, pp593-607.

bell hooks, 1992, 'Representing Whiteness', in L Grossberg, C Nelson & P Treichler (eds), *Cultural Studies*, Routeledge, New York, pp338-46.

Blacket J, 1911, *History of South Australia: A Romantic and Successful Experiment in Colonisation,* Hussey & Gillingham Ltd, Adelaide, pp160-61.

Black S, 1966, *Man and Motor Cars: An Ergonomic Study,* Secker & Warburg, London.

Blakely MK, 1986, 'On The Road Again, And Again And Again', *Ms,* April, pp14 & 62.

Bonham J, 2000, 'Safety & Speed: Ordering the Street of Transport', in C Garnaut & S Hamnett (eds), *Fifth Urban History/Planning History Conference,* Proceedings, University of South Australia, Adelaide, pp54-66.

_____ 1997, 'Nagging Doubt: Spaces for Women in Transport Knowledge', *Women on the Move: Maintaining the Momentum,* Proceedings of the Second National Conference on Women and Public Transport, TransAdelaide, Adelaide, pp59-61.

_____ 1994, *Women and Transport: A Review of the Literature,* Report to the State Transport Authority, Adelaide, South Australia, in possession of the author.

Bonham J, & Ferretti D, 1999, 'Imagining the Street: From Road Networks to Cultural Boulevards', in E Stratford (ed), Australian Cultural Geographies, Oxford University Press, Melbourne, pp109-30.

Boyd R, 1963, *The Australian Ugliness,* Penguin, Ringwood.

Breugal I & Kay A, 1975, 'Women in Planning', *Architectural Design,* 45(8), pp499-500.

Brine J, 1993, 'Diagrams of Utilitarianism: the Panopticon and the City of Adelaide', in R Freestone (ed), *The Australian Planner: Proceedings of the Planning History Conference held in the School of Town Planning 13 March 1993,* University of NSW, Sydney, pp11-16.

Brown-May A, 1995, *Highways of Civilisation and Common Sense: Street Regulation and the Transformation of Social Space in Nineteenth and Early Twentieth Century Melbourne,* Urban Research Program Working Paper No. 49, Australian National University, Canberra.

Brown W, 1994, *States of Injury: Power and Freedom in Late Modernity,* Princeton University Press, Princeton, p85.

Bruton M, 1970, *Introduction to Transportation Planning,* Hutchinson & Co., London.

Bunker R, 1998, 'The Foundation and Laying Out of Adelaide', *Planning Perspectives,* 13, pp243-255.

Butler J, 1990, *Gender Trouble,* Routledge, New York.

_____ 1990, 'Gender Trouble, Feminist Theory, and Psychonalytic Discourse', in LJ Nicholson (ed), *Feminism/Postmodernism,* Routledge, New York, pp324-40.

Cardew H, 1922, 'Roads and Road Making in England', *The Australasian Engineer,* 19(69), pp14-16.

Cartensen G, 2002, 'The Effect on Accident Risk of a Change in Driver Education in Denmark', *Accident Analysis and Prevention,* 34(1), pp111-21.

Castells M, 1977, 'Towards a Political Urban Sociology' in M Harloe (ed), *Captive Cities,* John Wiley & Sons, London, pp61-78.

Certeau M, 1984, *The Practice of Everyday Life,* University of California Press, Berkeley.

Church A, Frost M & Sullivan K, 2000, 'Transport and Social Exclusion in London', *Transport Policy,* 7(3), pp195-205.

Clarke P, 1991, 'Adelaide as an Aboriginal Landscape', *Aboriginal History,* 15(1/2), pp58-60.

Clarsen G, 2000, '"The Dainty Female Toe" and the "Brawny Male Arm": Conceptions of Bodies and Power in Automobile Technology', *Australian Feminist Studies,* 15(32), pp153-63.

Clifford J, 1992, 'Travelling Cultures', in L Grossberg, C Nelson & P Treichler (eds), *Cultural Studies,* Routledge, New York, pp96-112.

Coppel S, 1995, *Linocuts of the Machine Age: Claude Flight and the Grosvener School,* Scolar Press, Aldershot.

Corbin A, 1986, *The Foul and the Fragrant,* Papermac, London.

Costain A M, 1997, 'European Trends in Women's Transport Initiatives: Food for Thought', *Women on the Move: Maintaining the Momentum,* Proceedings of the Second National Conference on Women and Public Transport, TransAdelaide, Adelaide, pp5-15.

Crary J, 1999, *Suspensions of Perception,* MIT Press, Cambridge-Mass.

Cresswell T, 1997, 'Imagining the Nomad: Mobility and the Postmodern Primitive' in G Benko & U Strohmayer, (eds), *Space and Social Theory: Interpreting Modernity and Postmodernity,* Blackwell Publishers, Oxford - England, pp360-82.

Cullen G, 1961, *Townscape,* Architectural Press, London.

Davison G, 1993, *The Unforgiving Minute: How Australians Learned to Tell the Time,* Oxford University Press, Melbourne.

Dean M, 1999, *Governmentality: Power and Rule in Modern Society,* Sage, London.

De Jong R, 1986, 'The Recapture of the street', in E de Boer (ed), *Transport Sociology: Social Aspects of Transport Planning,* Pergamon Press, Britain, pp77-91.

De Leuw, Cather and Company, 1968, *Metropolitan Adelaide Transportation Study,* MATS Joint Steering Committee, Adelaide.

De Leuw, Cather & Company, 1966, *Metropolitan Adelaide Transportation Study, Basic Data for Transportation Planning,* MATS Joint Steering Committee, Adelaide.

Dowling R & Gollner A, 1997, 'Women and Transport: From Transport Disadvantage to Mobility Through the Motor Vehicle', *Proceedings of the 21st Australasian Transport Research Forum,* Transport Systems Centre, University of South Australia, Adelaide, pp337-54.

Dreyfus H & Rabinow P, 1982, *Michel Foucault: Beyond Structuralism and Hermeutics,* Harvester - Wheatsheaf, Brighton, p156.

Duruz J, 1994, 'Romancing the Suburbs', in K Gibson & S Watson (eds), *Metropolis Now,* Pluto Press, Leichardt, pp17-32.

Elmberg C, 1972, 'The Gothenburg Traffic Restraint Scheme', *Transportation,* 1(1), pp1-27.

Engels F, 1969, *The Condition of the Working Class in England,* Panther, London.

Engwicht D, 1992, *Towards an Eco-city: Calming the Traffic,* Envirobook, Sydney.

England K, 1993, 'Suburban Pink Collar Ghettos: The Spatial Entrapment of Women', *Annals of the Association of American Geographers,* 83(2), pp225-242.

_____ 1991, 'Gender Relations and the Spatial Structure of the City', *Geoforum,* 22(2), pp135-47.

Fagnani J, 1987, 'Daily Commuting Time: The Stakes for Working Mothers in France', *Transportation Research Record,* 1135, pp26-30.

Fazakerly R & Bonham J (in press), 'Intersections: Public Art and Road Space', *Twentieth Century Heritage: Our Recent Cultural Legacy,* Proceedings of the 2001 Australia ICOMOS National Conference, 28 November - 1 December 2001, Adelaide, South Australia.

Feldman M, 1977, 'A Contribution to the Critique of Urban Political Economy: The Journey to Work', *Antipode,* 9(2), pp30-50.

Fellman G, 1969, 'Neighbourhood Protest of an Urban Highway', *Journal of Amercian Institute of Planners,* March, 35, pp118-122.

Ferretti D, 2002, *From Rational Planning to Risky Business: Notions of Ecological Stustainability in Planning Discourses,* PhD Thesis, Flinders University of South Australia, Bedford Park.

Ferretti D & Bonham J, 2001, 'Travel Blending: Whither Regulation?', *Australian Geographical Studies,* 39(3), pp302-12.

Finch L, 1993, *The Classing Gaze,* Allen & Unwin, St Leonards.

Fincher R & Jacobs J (eds), 1998, *Cities of Difference,* Guilford Press, New York.

Flink J, 1975, *The Car Culture,* MIT Press, Mass.

Focas C, 1989, 'A Survey of Women's Travel Needs in London', in M Grieco, L Pickup & R Whipp (eds), *Gender, Transport and Employment,* Avebury, Aldershot, pp150-168.

Forer P & Kivell H, 1980, 'Space-Time Budgets, Public Transport and Spatial Choice', *Environment and Planning A,* 13, pp497-509.

Foster R, 1992, '"The Aborigines" Location in Adelaide: South Australia's First "Mission" to the Aborigines', *Journal of the Anthropological Society of South Australia,* 16(1), pp11-37.

Foucault M, 1991, 'Governmentality' (Translated by Colin Gordon), in G Burchell, C Gordon & P Miller (eds), *The Foucault Effect: Studies in Governmentality,* University of Chicago Press, Chicago, pp87-104.

_____ 1988, 'The Ethic of Care for the Self as a Practice of Freedom', in J Bernauer & D Rasmussen (eds), *The Final Foucault,* MIT Press, Cambridge – Mass.

_____ 1986, 'Of Other Spaces', *Diacritics,* 16(1), pp22-27.

_____ 1982, 'The Subject and Power', *Critical Inquiy,* pp777-795.

_____ 1980, *Power/Knowledge,* C Gordon (ed), Harvester Wheatsheaf, Hertfordshire.

_____ 1981, 'Omnes et Singulatum: Towards a Criticism of "Political Reason"', in S McMurrin (ed), *The Tanner Lectures on Human Values,* University of Utah Press, Salt Lake City, pp223-54.

_____ 1979, 'History of Systems of Thought', *Philosophy and Social Criticism,* 8, Pp353-359.

_____ 1978, *The History of Sexuality Vol. 1,* Penguin, London.

_____ 1977, *Discipline and Punish: The Birth of the Prison,* Penguin, London.

_____ 1970, *The Order of Things,* Routledge, London.

Foy D & Crafter S, 1989, 'Mobility and Access Needs of Women in New Communities', Unpublished Paper Presented to the Conference on *Metro Planning: Social Costs and Benefits*, Urban Research Unit, Australian National University, Canberra, Date Not Stated, pp20-22 (in possession of the author).

Franks H, 1986, 'Mass Transport and Class Struggle', in E de Boer (ed), *Transport Sociology:Social Aspects of Transport Planning*, Pergamon Press, Britain, pp211-222.

Freeman J, 1888, *Lights and Shadows of Melbourne Life*, Sampson Low, Marston, Searle and Rivington, London.

Freund P & Martin G, 1993, *The ecology of the automobile*, Black Rose Books Ltd., Montreal.

Flyvbjerg B, 1998, *Rationality and Power*, University of Chicago Press, Chicago.

Gittus E, 1976, *Flats, Families and the Under-Fives*, Routledge & Kegan Paul, London.

Glaister S, Burnham J, H Stevens & T Travers (eds), 1998, *Transport Policy in Britain*, MacMillan, London.

Gleeson B, 1998, 'The Social Space of Disability in Colonial Melbourne', in N Fyfe (ed), *Images of the Street: Planning, Identity and Control in Public Space*, Routledge, London, pp92-110.

Gonner E, 1895, *Ricardo's Political Economy*, George Bell & Sons, London.

Grosz E, 1990, 'Contemporary Theories of Power and Subjectivity', in S Gunew (ed), *Feminist Knowledge: Critique and Construct*, Routledge, London, pp59-120.

Gordon DJ, 1908, *Handbook of South Australia*, Government Printer, Adelaide.

Gordon C, 1991, 'Governmental Rationality: An Introduction', in G Burchell, C Gordon & P Miller (eds), *The Foucault Effect: Studies in Governmentality*, University of Chicago Press, Chicago, pp1-51.

Grigsby J & Campbell B, 1972, 'A New Role for Planners: Working with Community Residents in Formulating Alternative Plans for Street Patterns - Before Decision Making', *Transportation*, 1(2), pp125-150.

Guiliano G, 1988, 'Commentary: Women and Employment', *Urban Geography*, 9(2), pp203-208.

_____ 1979, 'Public Transportation and the Travel Needs of Women', *Traffic Quarterly*, 33(4), pp607-615.

Gutman R, 1978, 'The Street Generation', in S Anderson (ed), *On Streets*, MIT Press, Cambridge – Mass, pp248-264.

Hagerstrand T, 1986, 'What about People in Regional Science?', in E de Boer (ed), *Transport Sociology: Social Aspects of Transport Planning*, Pergamon Press, London, pp143-158.

Hajek J, 1977, 'L $_{eq}$ Traffic Noise Prediction Method', *Transportation Research Record 648*, pp48-53.

Hall S, 1996, 'Introduction: Who Needs Identity?', in S Hall & P du Gay (eds), *Questions of Cultural Identity*, Sage, London, p1-17.

Hamilton K & Jenkins L, 1989, 'Why Women and Travel?', in M Grieco, L Pickup & R Whipp (eds), *Gender, Transport and Employment*, Avebury, Aldershot, pp17-45.

Hanson S, 1986, *The Urban Transportation Problem*, The Guilford Press, New York.

Hanson P, & Hanson S, 1980, 'Gender and Urban Activity Patterns in Uppsala, Sweden', in *Geographical Review*, 70, p291-296.

_____ 1978, 'The Impact of Women's Employment on Household Travel Patterns: A Swedish Example', S Rosenbloom (ed), *Women's Travel Issues: Research Needs and Priorities*, US Department of Transportation, Washington DC, pp127-169.

Hanson S & Johnston I, 1985, 'Gender Differences in Work Trip Length: Explanations and Implications', *Urban Geography*, 6 (3), pp193-219.

Hanson S & Pratt G, 1995, *Gender, Work, and Space*, Routledge, London.

_____ 1994, 'On Suburban Pink Collar Ghettos: The Spatial Entrapment of Women by Kim England', *Annals of the Association of American Geographers*, 84(3), pp500-502.

_____ 1991, 'Job Search Strategies and the Occupational Segregation of Women', *Annals of the Association of American Geographers*, 81(2), pp229-253.

Harman E, 1983, 'Capitalism, Patriarchy and the City', in C Baldock & B Cass (eds), *Women, Welfare and the State*, Allen & Unwin, Sydney, pp108-33.

Harrison B, 1927, 'Electrical Accidents', *Medical Journal of Australia*, 24 September, pp439-445.

Hart S, 1968, 'The Relationship of the Metropolitan Adelaide Transportation Study to the Metropolitan Development Plan', *The Metropolitan Adelaide Transportation Study and the Future Development of Adelaide*, Conference Proceedings, University of Adelaide, Adelaide, pp11-12.

Harvey D, 1973, *Social Justice and the City*, Edward Arnold, London.

_____ 1989, *The Urban Experience*, Blackwell Publishers, Oxford.

Hass-Klau C, Nold I, Bodker G & Crampton G, 1992, *Civilised Streets: A Guide to Traffic Calming*, Environment and Transport Planning, Brighton.

Hayden D, 1984, *Redesigning the Amercian Dream*, WW Norton & Coy, New York.

Hensher D, 1976, 'The Structure of Journeys and the Nature of Travel Patterns', *Environment and Planning A*, 8(6), pp655-72.

_____ (ed), 1974, *Urban Travel Choice and Demand Modelling*, Australian Road Research Board, Canberra.

Hillman M, 1974, 'Not a Carborne Democracy', *Built Environment*, 3(7), pp342-344.

Hillman M, Henderson I & Whalley A, 1986, 'Unfreedom Road', in E De Boer (ed), *Transport Sociology: Social Aspects of Transport Planning*, Pergamon Press, Britain, pp183-189.

_____ 1973, *Personal Mobility and Transport Policy*, PEP, London.

Hindess B, 1996, *Discourses of Power: from Hobbes to Foucault*, Blackwell, Oxford.

Hine J, 2000, 'Integration, Integration, Integration... Planning for Sustainable and Integrated Transport Systems in the New Millennium', *Transport Policy*, 7(3), pp175-177.

Hirst RR, 1968, 'The Economics of Public and Private Transport Modes', *Metropolitan Adelaide Transportation Study and the Future Development of Adelaide*, Conference Proceedings, University of Adelaide, Adelaide, pp123-136.

Hodge D, 1990, 'Geography and the Political Economy of Urban Transportation', *Urban Geography*, 11(1), pp87-100.

Home R, 1997, *Of Planting and Planning*, E & FN Spon, London.

Hovell PJ, Jones WH & Moran AJ, 1975, *The Management of Urban Public Transport,* Gower, Great Britain.

Howe A & O'Connor K, 1982, 'Travel to Work and Labour Force Participation of Men and Women in an Australian Metropolitan Area', *Professional Geographer,* 34(1), pp50-64.

Hunt A, 1996, 'Governing the City: Liberalism and Early Modern Modes of Governance', in A Barry, T Osborne & N Rose (eds), *Foucault and Political Reason Liberalism,Neo-liberalism and Rationalities of Government,* UCL Press, London, pp167-188.

Huxley M, 1997, 'Ecologically Sustainable Cities, Environmentally Friendly Transport or Just "more work for mother"', *Women on the Move: Maintaining the Momentum,* Proceedings of the Second National Conference on Women and Public Transport, TransAdelaide, Adelaide.

_____ 1994, 'Panoptica: Utilitarianism and land-use control', in K Gibson & S Watson (eds), *Metropolis Now: Planning and the Urban in Contemporary Australia,* Pluto Press, Leichhardt, pp148-160.

Jacobs J, 1961, *The Death and Life of Great American Cities,* Penguin Books in Conjunction with Jonathon Cape, Harmondsworth.

Jaggar A, 1983, *Feminist Politics and Human Nature,* Rowman & Littlefield, New Jersey.

James J S, 1983, *The Vagabond Papers,* Hyland House, Melbourne.

Jensen R, 1968, 'Commentary on the MATS Report Proposals and the Adelaide Development Plan', *The Metropolitan Adelaide Transportation Study and the Future Development of Adelaide,* Conference Proceedings, University of Adelaide, Adelaide.

Jervis C, 2000, *Traffic Calming in Unley,* Honours Thesis, University of South Australia, Adelaide, pp51-65.

Johnston-Anumonwo I, 1988, 'The Journey to Work and Occupational Segregation', *Urban Geography,* 9(2), pp138-154.

Johnson D & Langmead D, 1986, *The Adelaide City Plan,* Wakefield Press, Adelaide.

Jones P, 1989, 'Household Organisation and Travel Behaviour', in M Grieco, L Pickup & R Whipp (eds), *Gender, Transport and Employment,* Avebury, Aldershot.

Kern S, 1983, *The culture of time and space 1880-1920,* Harvard University Press, Cambridge, Mass.

Kilmartin L, Thorns D & Burke T, 1985, *Social Theory and the Australian City,* Allen & Unwin, Sydney.

Klenke A, 2000, 'For Show or Comfort? A History of Victoria Square', *Journal of Historical Society of South Australia,* 28, pp97-104.

Koutsopoulos K & Schmidt C, 1986, 'Mobility Constraints of the Carless', in E De Boer (ed), *Transport Sociology: Social Aspects of Transport Planning,* Pergamon Press, Britain, pp169-181.

Kwan M, 1999, 'Gender and Individual Access to Urban Opportunities', *Professional Geographer,* 51(2), pp210-222.

Lang J, 1992, 'Women and Transport', *Urban Policy and Research,* 10(2), pp14-25.

Langmead D, 1994, *Accidental Architect: Kingston, George Strickland 1807-1880,* Crossing Press, Darlington.

Latif CA & Mufti R, 'Philadephia Air Quality Control Region: Need and Recommendations for Revision of Transportation Control Plan', *Transportation Research Record 648,* pp59- 65.

Laub Coser R, 1982, 'Stay Home, Little Sheba: On Placement, Displacement, and Social Change', in R Kahn-Hut, A Kaplain-Daniels & R Calvard (eds), *Women and Work: Problems and* Perspectives, Oxford University Press, New York, pp153-159.

Law J, 1986, 'On the Methods of Long-Distance Control: Vessels, Navigation and the Portuguese Route to India', in J Law (ed), *Power, Action, Belief,* Routledge & Kegan Paul, London, pp234-263.

Law R, 1999, 'Beyond "Women and Transport": Towards New Geographies of Gender and Daily Mobility', *Progress in Human Geography,* 23(4), pp567-588.

Little J, 1994, *Gender in Planning and The Policy Process,* Pergamon, Oxford.

Lloyd M, 1997, 'Foucault's Ethics and Politics: A Strategy for Feminism?', in M Lloyd & A Thacker (eds), *The Impact of Michel Foucault on the Social Sciences and Humanities,* MacMillan Press Ltd, Houndmills, p78-101.

Loeis M & Richardson T, 1997, 'Development of a Welfare Index for use in Transport Analysis and Evaluation', *Proceedings of the 21st Australasian Transport Research Forum,* Transport Systems Centre, University of South Australia, Adelaide, pp355-374.

Loxton H, 1974, 'Transport Planning in Australia', *Australian Road Research Board Conference Proceedings,* 7(1), pp 57-66.

Lynch K, 1960, *The Image of the City,* MIT Press, Cambridge, Mass.

Mackenzie S & Rose D, 1983, 'Industrial change, the Domestic Economy and Home Life' in J Anderson, S Duncan & S Hudson (eds), *Redundant Spaces in Cities and Regions,* Academic Press, London, pp155-200.

Mackie A, 1978, 'Environmental Effects of Traffic in Ludlow, Salop' *Transport and Road Research Laboratory, Supplementary Report 245.*

Madden J, 1977, 'A Spatial Theory of Sex Discrimination', *Journal of Regional Science,* 17(3), pp369-380.

Mayhew H, 1967, *London Labour and the London Poor,* Cass, London.

Markusen A, 1980, 'City, Spatial Structure, Women's Household Work and National Urban Policy', in Stimpson et al, *Women and the American City,* pp20-41.

Marsden S, 1996, 'Playford's Metropolis', in B O'Neil, J Raftery & K Round (eds), *Playford's South Australia: Essays on the History of South Australia, 1933-1968,* Association of Professional Historians, Adelaide, pp117-131.

Marx K, 1954, *Capital, Vol. 1,* Progress Publishers, USSR.

Matrix, 1984, *Making Space: Women and the Man Made Environment,* Pluto Press, London.

McConnell A, 1996, *Salisbury State of the Environment Report,* Unpublished Graduate Diploma Thesis, Urban and Regional Planning, University of South Australia.

McDowell L, 1993, 'Space, Place and Gender Relations: Part I. Feminist Empiricism and the Geography of Social Relations', *Progress in Human Geography,* 17(2), pp157-179.

_____ 1993, 'Space, Place and Gender Relations: Part II. Identity, Difference, Feminist Geometries and Geographies', *Progress in Human Geography,* 17(3), pp305-318.

McLafferty S & Preston V, 1991, 'Gender, Race and Commuting Among Service Sector Workers', *Professional Geographer,* 43(1), pp1-15.

McLeod P B, 1974, 'A survey of Models Used to Forecast the Demand for a Transportation Mode with Emphasis on Behavioural Models of Mode Choice', in D Hensher (ed), *Urban Travel Choice and Demand Modelling, Special Report No. 12,* Australian Road Research Board, Canberra, pp29-59.

Miles G & Vincent D, 1934, 'The Institute's Tests for Motor Drivers', *The Human Factor,* vol. VIII, (7-8), pp245-257.

Miller R, 1991, 'Selling Mrs Consumer: Advertising and the Creation of Suburban Socio-Spatial Relations', Antipode, 23(3), pp263-301.

Mitchell R & Rapkin C, 1954, *Urban Traffic: A Function of Land Use,* Greenwood Press, Connecticut.

Mokhtarian P, Salomon I & Lothlorien R, 2001, 'Understanding the Demand For Travel: It's Not Purely "Derived"', *Innovation: The European Journal of Social Science Research,* 14 (4), pp355-380.

Morris M, 1988, *The Pirate's Fiancee: Feminism, Reading, Postmodernism,* Verso, London.

Morton P, 1996, *After Light, A History of the City of Adelaide and its Council 1878-1928,* Wakefield Press, Kent Town.

Moser P, 1972, 'Aesthetic and Ecological Disharmonies of Highways', *Transportation,* 1(1), pp55-67.

Moss R P, 1967, 'The Concept of the Community: Some Applications in Geographical Research', *Institute of British Geographers Transactions,* 41, pp21-32.

Mumford L, 1961, *The City in History,* Penguin, Harmondsworth.

Myers C S, 1935, 'The Psychological Approach to the Problem of Road Accidents', *Nature,* 9 November, p740-742.

Nance C, 1980, 'The Destitute in Early Colonial South Australia', *Journal of the Historical Society of South Australia,* 7, pp46-61.

Newman P & Kenworthy J, 1991, *Cities and Automobile Dependence: An International Sourcebook,* Avebury Technical, Aldershot.

Newman O, 1973, *Defensible Space,* Architectural Press, London.

Ohlenschlager S, 1990, 'Women also Travel', in S. Trench & T. Oc (eds), *Current Issues in Planning,* Gower, Aldershot, pp26-32.

O'Leary J, 1969, 'Evaluating the Environmental Impact of an Urban Expressway', *Traffic Quarterly,* 23(3), pp341-352.

Oliver K, 1989, 'Women's Accessibility and Transport Policy in Britain', in S Whatmore & J Little (eds), *Gender and Geography,* Association for Curriculum Development in Geography, London, pp19-33.

Osborne T & Rose N, 1999, 'Governing Cities: Notes on the Spatialisation of Virtue', *Environment and Planning D: Society and Space*, 17, pp737-760.

Palladio A, 1964, *The Four Books of Architecture* (reprint of English Edition 1737), Dover Publications, London.

Palm R & Pred A, 1973, 'The Status of Women: A Time-Geographic View', in D Lanegran & R Palm (eds), *An Invitation to Geography*, McGraw Hill, New York, pp99-109.

Parsons H, 1968, 'An Independent Planning View of MATS', *The Metropolitan Adelaide Transportation Study and The Future Development of Adelaide*, Conference Proceedings, University of Adelaide, Adelaide, pp173-188.

Pateman C, 1988, *The Sexual Contract*, Polity Press, Cambridge.

Peacock B & Karwowski W, (eds), 1993, *Automotive Ergonomics*, Taylor & Francis, Washington, DC.

Pickup L, 1989, 'Women's Travel Requirements: Employment with Domestic Constraints', in M Gierco, L Pickup & R Whipp (eds), *Gender, Transport and Employment*, Avebury, Aldershot, pp199-222.

_____ 1988, 'Hard to Get Around: A Study of Women's Travel Mobility', in J Little, L Peake & P Richardson (eds), *Women in Cities: Gender and the Urban Environment*, Macmillan Education, London, pp98-116.

Platten N, 1968, 'The Effects of MATS on the Urban Environment', *The Metropolitan Adelaide Transportation Study and the Future Development of Adelaide*, Conference Proceedings, University of Adelaide, Adelaide, pp110-112.

Pringle R & Watson S, 1992, '"Women's Interests" and the Post-Structuralist State', in M Barrett & A Phillips (eds), *Destabilizing Theory: Contemporary Feminist Debates*, Polity Press, Cambridge, pp53-73.

Probyn E, 1990, 'Travels in the Postmodern: Making Sense of the Local', in L J Nicholson (ed), *Feminism/Postmodernism*, pp176-89.

Rabinbach A, 1992, *The Human Motor: Energy, Fatigue, and the Origins of Modernity*, University of California Press, Berkley.

Rabinow P, 1989, *French Modern: Norms and Forms of the Social Environment*, MIT Press, Cambridge, Mass., pp76-78.

Retting R, Weinstein H, Williams A & Preusser D, 2001, 'A Simple Method for Identifying and Correcting Crash Problems on Urban Arterial Streets', *Accident Analysis and Prevention*, 33(6), pp723-34.

Rich D, 1996, 'Tom's Vision? Playford and Industrialisation', in B O'Neil, J Raftery & K Round (eds), *Playford's South Australia: Essays on the History of South Australia, 1933-1968*, Association of Professional Historians, Adelaide, pp91-116.

Riddle A, 1992, 'Adelaide's Parklands', in B Dickey (ed), *William Shakespeare's Adelaide 1860-1930*, Association of Professional Historians, Adelaide, pp106-25.

Rooney A, 1998, 'Transport Systems and Cities Viewed as Self Organising Systems', *Proceedings of the 22nd Australasian Transport Research Forum*, Transport Data Centre – NSW Department of Transport, Sydney, pp789-803.

Rose N, 1996, 'The Death of the Social? Re-figuring the Territory of Government', *Economy and Society*, 25(3), pp327-356.

_____ 1990, *Governing the Soul: The Shaping of the Private Self,* Routledge, London.

Rosenbloom S, 1993, 'Women's Travel Patterns at Various Stages of Their Lives', in C Katz & J Monk (eds), *Full Circles: Geographies of Women Over the Life Course*, Routledge, London, pp208-242.

_____ 1991, 'Why Working Families Need a Car', in M Wachs & M Crawford (eds), *The Car and the City*, University of Michigan Press, Ann Arbor, pp39-56.

_____ 1989, 'Trip Chaining Behaviour: A Comparative and Cross Cultural Analysis of the Travel Patterns of Working Mothers', in M Gierco, L Pickup & R Whipp (eds), *Gender and Transport and* Employment, Avebury, Aldershot, pp75-87.

_____ 1978, 'Women's Travel Issues: The Research and Policy Environment', in S Rosenbloom (ed), *Women's Travel Issues: Research Needs and Priorities*, US Department of Transportation, Washington DC, pp1-40.

Rutherford B & Wekerle G, 1988, 'Captive Rider, Captive Labour: Spatial Constraints and Women's Employment', *Urban Geography*, 9(2), pp116-137.

Saegert S, 1981, 'Masculine Cities and Feminine Suburbs: Polarised Ideas, Contradictory Realities', in R Stimpson, E Dixler, M Nelson & K Yatrakis (eds), *Women and the American City*, University of Chicago Press, Chicago, pp93-108.

Said E, 1984, *The World, the Text and the Critic,* Faber & Faber, London, pp226-27.

Sandercock L, 1977,*Cities for Sale*, Melbourne University Press, Melbourne, pp121-135.

Sarkar S, Nederveen N & Pols A, 'Renewed Commitment to Traffic Calming and Pedestrian Safety', *Transportation Research Record, 1578,* pp11-19.

Scharff V, 1991, *Taking the Wheel: Women and the Coming of the Motor Age,* Free Press, New York.

_____ 1988, 'Putting Wheels on Women's Sphere', in C Kramarae (ed), *Technology and Women's Voices*, Routledge & Keegan Paul, New York, pp135-146.

Schneider K, 1971, *Autokind vs Mankind: An Analysis of Tyranny, A Proposal for Rebellion, A Plan for Reconstruction,* Norton, New York.

Schumer L A, 1955, *The Elements of Transport*, Butterworth & Co, London.

Selling L S, 1937, 'The Physician and the Traffic Problem', *Journal of the American Medical Association,* 108(2), pp93-95.

Sen A & Smith T, 1995, *Gravity Models of Spatial Interaction Behaviour*, Springer, Berlin.

Sennett R, 1994, *Flesh and Stone: The Body and the City in Western Civilization*, Faber and Faber, London.

Sexton B, 1969, 'Traffic Noise', *Traffic Quarterly*, 23(3), pp427-439.

Sheller M & Urry J, 2000, 'The City and the Car', *International Journal of Urban and Regional Research*, 24(4), pp737-757.

Sinclair A B & Winton J E D, 1966, 'A comparative Review of Capital City Transportation Studies in Australia'. *Australian Planning Institute Journal,* October, pp214-218.

Singell L & Lillydahl J, 1986, 'An Empirical Analysis of the Commute to Work Patterns of Males and Females in Two-Earner Households', *Urban Studies*, 2, pp119-29.

Smith S, 1993, *Subjectivity, Identity, and the Body: Women's Autobiographical Practices in the Twentieth Century,* Indiana University Press, Bloomington.

South Australian Department of Transport, *Road Accidents in South Australia, 1986,* Road Safety Division, South Australian Department of Transport , Adelaide, 1987

Stiles P, 1979, 'The Consequences of "Who Gets the Car" in the One-Car Family', *Proceeding of the Fifth Australian Transport Research Forum*, Adelaide, pp100-115.

Stradling G, Meadows M & Beatty S, 2000, 'Helping Drivers Out of Their Cars: Integrating Transport Policy and Social Psychology for Sustainable Change', *Transport Policy,* 7(3), pp207-215.

Stretton H, 1970, *Ideas for Australian Cities,* Hugh Stretton, North Adelaide.

Tivers J, 1985, *Women Attached: The Daily Lives of Women with Young Children,* Croom Helm, London.

Tong R, 1989, *Feminist Thought: A Comprehensive Introduction,* Routledge, London.

Topliss H, 1996, *Modernism and Feminism: Australian Women Artists 1900-1940,* Craftsmand House, NSW, pp143-53.

Transport SA, *Road Crashes in South Australia, 1999,* Transport Information Management Section, Transport SA, Adelaide, 2001

Trench S, T Oc, & S Tiesdell, 1992, 'Safer Cities for Women: Perceived Risks and Planning Measures', *Town Planning Review*, 63(3), pp279-296.

Truelove P, 1992, *Decision Making in Planning,* Longman Scientific and Technical, Harlow.

Unwin R, 1909, *Town Planning in Practice,* T Fisher Unwin, London.

Valentine G, 1992, 'Images of Danger: Women's Sources of Information About the Spatial Distribution of Male Violence', *Area*, 24(1), pp22-29.

Villeneuve P & Rose D, 1988, 'Gender and the Separation of Employment from Home in Metropolitan Montreal, 1971-1981', *Urban Geography*, 9(2), pp155-179.

Voas R & De Young D, 2002, 'Vehicle Action: Effective Policy for Controlling Drunk and Other High Risk Drivers', *Accident Analysis and Prevention,* 34(3), pp263-270.

Wajcman J, 1991, *Feminism Confronts Technology,* Allen & Unwin, St Leonards.

Walby S, 1990, *Theorizing Patriarchy,* Blackwell, Oxford.

Wall G, 1974, 'Complaints Concerning Air Pollution in Sheffield', *Area,* 6(1), pp3-8.

Warren C, 1932, 'Effects of Noise on the Nervous System', *Medical Journal of Australia,* 9 January, pp49-50.

Weber A, 1899, *The Growth of Cities in the Nineteenth Century: A Study in Statistics,* Macmillan, New York.

Wekerle G, 1981, 'Women in the Urban Environment', in R Stimpson et al (eds), *Women and the Amercian City,* University of Chicago Press, Chicago, pp200-204.

Wekerle G & Whitzman C, 1995, *Safer Cities: Guidelines for Planning, Design, and Management,* Van Nostrad Reinhold, New York.

Whitt J & Yago G, 1985, 'Corporate Strategies and the Decline of Transit in U S Cities', *Urban Affairs Quarterly*, 21, pp37-65.

White P, 1976, *Riders in the Chariot*, Cape, London.

_____ 1960, *Tree of Man*, Penguin, Harmondsworth.

Wilson E, 1991, *The Sphinx in the City: Urban Life, the Control of Disorder, and Women*, Virago Press, London.

_____ 1992, 'The Invisible Flaneur', *New Left Review*, 191, pp90-110.

Winston D, 1968, 'Cities Today: Challenge But Insufficient Response', *Australian Planning Institute Journal*, 6(2), pp40-42.

Wolff J, 1990, *Feminine Sentences: Essays on Women and Culture*, Polity Press, Cambridge, pp34-50.

_____ 1993, 'On the Road Again: Metaphors of Travel in Cultural Criticism', *Cultural Studies*, 7(2), pp224-239.

Women and Transport Forum, 1988, 'Women on the Move: How Public is Public transport?', in C Kramarae (ed), *Technology and Women's Voices*, Routledge & Kegan Paul, New York, pp116-134.

Worsnop T, 1878, *Worsnop's History of the City of Adelaide*, J Williams, Adelaide.

Yago G, 1983, 'The Coming Crisis of US Transport', *International Journal of Urban and Regional Research*, 7(4), pp577-601.

_____ 1980, 'Corporate Power and Urban Transportation: A Comparison of Public Transit's Decline in the United States and Germany', in M Zeitlin (ed), *Classes, Class Conflict and the State: Empirical Studies in Class Analysis*, Cambridge, Winthrop, pp296-323.

Young I M, 1990, 'The Ideal of Community and the Politics of Difference', in L Nicholson (ed), *Feminism/Postmodernism*, Routledge, New York, pp300-323.

Young S, 1980, '"You Can't be in Two Places at Once"', *Social Alternatives*, 1(8), pp17-22.

Zipf G, 1949, *Human Behaviour and the Principle of the Least Effort: An Introduction to Human Ecology*, Addison-Wesley Press, Cambridge, Mass.