Women and Transport: from Transport Disadvantage to Mobility Through the Motor Vehicle

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Abstract:

Specific and detailed understanding of how the motor vehicle fits into contemporary Australian life, how, if at all, this is changing with societal restructuring, and how the motor vehicle is used differentially by social groups like women, the elderly or poor, is sorely lacking With few exceptions, sustainable transport policy also exhibits little understanding of the factors determining car use. Without this knowledge, the effectiveness of policy measures to reduce the reliance on the motor vehicle will invariably be compromised. This paper examines the interconnections between the motor vehicle and social change for just one social group - women It sketches a response to one broad question: how are the economic, social and cultural circumstances of the 1990s determining women's transport patterns and car use ? Clearly, women are not only group of transport users worthy of attention. They do, however, have specific needs that merit analysis, while trends indicate that female motor vehicle use is increasing at a disproportionate rate to men's, thus challenging the relative effectiveness of policies intended to reduce motor vehicle use in urban Australia.

The paper is based on qualitative research commissioned by NRMA and undertaken by cultural geographer Dr Robyn Dowling of Macquarie University, Sydney.

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Introduction

Specific and detailed understanding of how the motor vehicle fits into contemporary Australian life, how, if at all, this is changing with societal restructuring, and how the motor vehicle is used differently by social groups like women, the elderly or poor, is sorely lacking With few exceptions, sustainable transport policy also exhibits little understanding of the factors determining car use Yet there is growing recognition amongst policy makers that human behaviour and cultural attitudes towards transport generally, and the motor vehicle specifically, are at the heart of increasing trends in Australian urban motor vehicle use and thereby central to responses developed to encourage more sustainable urban societies, transport solutions and travel habits

This paper examines the interconnections between the motor vehicle and social change for just one social group - women It sketches a response to one broad question - how are the economic, social and cultural circumstances of the 1990s determining women's transport patterns and car use? Personal values, social change and a changing urban environment influence greatly the relationship we have with our cars For women it seems the motor vehicle especially plays an integral role in the everyday management of their lives, helping to juggle work and family responsibilities in particular This paper outlines the findings of research commissioned by the NRMA into women's car use The study finding that the motor vehicle appears to offer women much more than mobility and convenience - in terms of time, for example, the motor vehicle seems to have become a tool used for every day urban survival in the 1990s

Clearly women are not the only group of transport users worthy of attention It would indeed be equally worthwhile to investigate men's travel habits, while other segments of our community, such as the elderly and the young also provide valuable topics for investigation For this study's purpose, however, it was believed that women did portray specific needs that merited analysis, while trends indicate that female motor vehicle use is increasing at a disproportionate rate to men's, thus challenging the relative effectiveness of policies intended to reduce motor vehicle use in urban Australia

The paper is based on a review of existing literature and research and new qualitative research commissioned by the NRMA, and builds on other work commissioned and undertaken by the NRMA - the more recent NRMA work on *Women, Men, Cars and Driving* (1996) and earlier investigations of women and transport disadvantage in 1992 (Lang, 1992)

Current understandings of women and transport

While care must be taken not to homogenise the female gender when considering differences between men's and women's travel habits and car use, there is a body of evidence that demonstrates that women and men generally do have different travel patterns and use different forms of transport

Women and men have different travel patterns and use different forms of transport Many international studies (eg Rosenbloom 1989; 1993; Whipp and Grieco 1989) have

shown that women's different forms of participation in the paid labour force - lower participation rates, part-time and suburban employment - and their domestic responsibilities produce different commuting patterns, more complex trip behaviour and different trip purposes. The purpose of this section is to use the findings of this literature to structure an outline of women's travel patterns in the Greater Sydney Region. Such an outline is worthwhile because, with the exception of Lang (1992), contemporary quantitative understandings of women's travel patterns in this region are rare. This outline is based on a data source known as the NSW Home Interview Survey. Conducted by the NSW Department of Transport in both 1981 and 1991, the survey collected and collated detailed travel data for each member (including children) of approximately 19,000 people in each of the years.

Purpose of trips

Men and women travel for different reasons. In particular, the journey to work is of lesser significance for women, for whom non-work related trips are of more importance (Richardson et al 1996). The purpose of men's and women's trips in NSW in 1991 is depicted in Table 1. The table shows that for men, the journey to work accounts for more than a quarter of trips, but only thirteen percent for women. In contrast, more than a quarter of women's trips are undertaken for shopping and social/recreational activities, compared to 22 percent for men. It is notable here that social and recreational definitions are very loosely defined in transport statistics, and include household tasks like chauffeuring as well as trips for pleasure. These statistics mask the substantial differences in women's and men's journeys to work, with women tending to make more linked trips than men. Women's journey to work is likely to also consist of dropping children off to childcare, and the journey from work involve shopping, whereas men tend to go directly to and from work.

Table 1: Purpose of Trip by Gender, NSW 1991

Trip Purpose	Percentage of All Trips Males	Percentage of All Trips Females
Work/Work Related	26	13.4
Education	4.8	4.9
Shopping	10.2	14.6
Social/Recreation	12.3	13.6
Personal Business	5.3	6.6
Serve Passenger	8.1	12.1
Other	33.3	34.7

Source: Department of Transport nd, Home Interview Survey Data

Although the importance of linked trips to women's travel patterns in Australia and Sydney is generally accepted (eg Lang, 1992) there is a paucity of empirical evidence to support the position. The most comprehensive data come from the United States, reported in a series of studies by Rosenbloom (1989, 1993). Using data from surveys conducted in the United States and the Netherlands, Rosenbloom reports that 65 percent

of married working women with children under six had linked trips to work, compared to 42 percent of married working men. In Australia, Lang (1992) reports an Adelaide study that found that men's trips are consistent from day-to-day whereas women make different sorts of trips everyday

Temporal and spatial distribution of travel

Women and men travel at different times of the day and to different locations. Unfortunately, Australian and international data are sparse on this point. However, social and employment trends can be used to infer travel behaviour. Temporally, women are more likely than men to be commuting out of peak hours. This is because of women's concentration in part-time employment (Toon, Glazebrook and Searle, 1994) and the fact that non-work trips like shopping and recreation tend to occur out of peak hours (Gee, Hay and Bell, 1996).

In terms of spatial distribution, women's journey to work tends to be more localised. That is their jobs are located within their immediate region, whereas men's jobs tend to be more inter-regional. The spatial location of women's employment is the key factor here, while preferences for working nearer to home is also assumed. This suggests that women are keen to reduce their journey to work times in order to fulfil their other daily tasks (shopping and caring tasks) which are also likely to be local. Figure 1 depicts the degree to which women's journeys to work are more localised than men's. The outer LGAs tend to have much more female employment self-containment than men. A pattern of reduced employment self-containment differences between men and women is evident as LGAs become more centralised. This is likely to relate to the larger concentration of employment opportunities in the inner and middle sectors of the metropolitan region, as well as the greater transport choices available in these areas to access employment

Distance travelled

Distance travelled per year and on a daily basis is also identified as a significant difference between men's and women's travel behaviour. Yet findings pertaining to distance travelled and time spent travelling are difficult to obtain and ambiguous. On the one hand, public transport trips tend to be longer than those in private vehicles, so to the extent that women are more likely to be public transport users then their trips may be longer than those of men. However, trains trips (more frequented by men than women) tend to be longer than bus trips (used more frequently by women), suggesting that women have shorter journeys than men. In terms of motor vehicle use, it is widely documented that women travel shorter distances per year and on a daily basis than men

In Sydney, a 1995 survey commissioned by the NRMA found that men drove an average of 20,000 kilometres per year compared to women's 14,000 (NRMA 1996). According to Lang (1992), in Australia it is well known that women travel shorter distances and take less time per trip than men

Figure 1: **Degree of Employment Self-Containment for Women:**
Greater Sydney Region (LGAs)
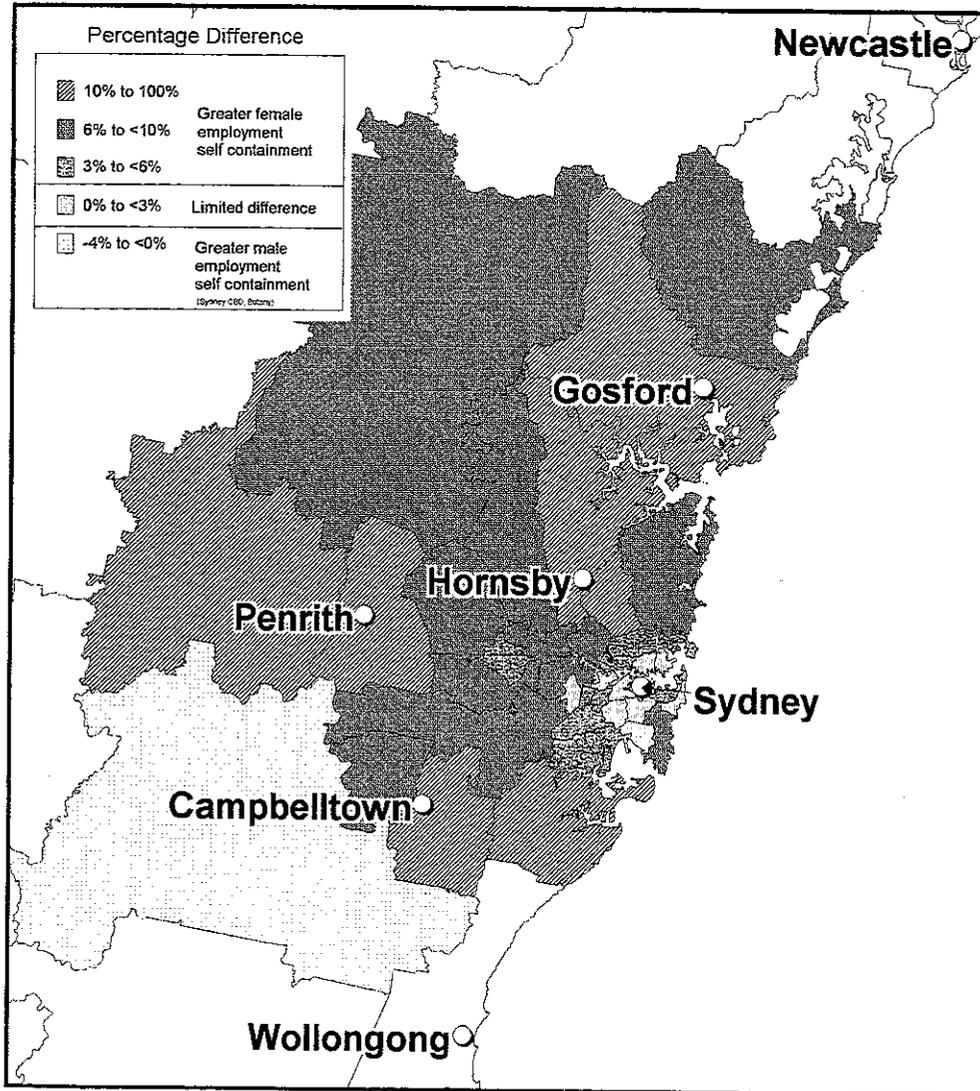
Source: Adapted from ABS Census 1991; Gollner, 1996 (unpublished)

Mode

Conventional analysis holds that the transport modes used by men and women are different In particular, women rely much more on public transport than do men. In other words, women form the majority of users of public transport, and a greater proportion of women than men use public transport This has been, and still is, the case in both Britain (Women and Transport Forum, 1988; Morris et al 1996), the United States (Rosenbloom, 1989) and Australia (Lang, 1992) It is also the case, though only

marginally so, in Sydney. In both 1981 and 1991, women in Sydney were more likely to use public transport than men. The NSW Department of Transport's 1991 Home Interview Survey found that eleven percent of women compared to ten percent of men used public transport as a mode of travel. Of the approximately 6 million weekday trips undertaken by vehicle drivers in Sydney in 1991, only 40 percent were undertaken by women (Gee, Hay and Bell, 1996). On the other hand, of the more than one million public transport trips undertaken, a little over half were by women, with women more likely than men to use buses rather than trains (Gee, Hay and Bell, 1996).

This picture of women's greater reliance on public transport is the one conventionally painted in the women and transport literature (eg Pickup, 1988). Its validity, however, is becoming questionable, for the differences between the transport modes used by men and women are declining. The NSW Department of Transport Home Interview Survey indicates that women's use of transport in contemporary Australia is dominated by one trend: women are gaining access to, and using, cars in unprecedented numbers.

Using data from the Department of Transport's *Home Interview Survey*, Gee, Hay and Bell (1996) find that the difference between men and women's use of public transport in Sydney declined between 1981 and 1991. This was not because proportionately more men were using public transport, but because women were using cars as drivers. Between 1981 and 1991 the number of trips by women as vehicle drivers increased by approximately 25 percent, whilst the same trips for men declined by 5 percent (Gee, Hay and Bell, 1996). As a result, according to Gee, Hay and Bell (1996), the "increase in total vehicle driver trips is solely accounted for by an increase in trips by females" (page 3). A remarkably similar pattern exists for weekend travel, where "females also accounted for the increase in weekend vehicle driver trips from 1981 to 1991"

Table 2: Average Weekday Mode Share by Gender, NSW 1991

Mode	Males 1981	Females 1981	Males 1991	Females 1991
Private Vehicle	69.5	58.8	69.2	65.1
Public Transport	10.6	14.1	9.9	11.0
Other Modes	19.9	27.1	20.9	23.9

Source: Department of Transport, Home Interview Survey Data

These data are echoed by the changes in the mode share of men's and women's trips. As shown in Table 2, whereas the share of men's trips using a private vehicle remained static, for women it rose from 59 to 65 percent between 1981 and 1991. That more women are driving is borne out by NSW Roads and Traffic Authority figures on drivers licences. In 1978, 39 percent of drivers licences in NSW were held by women. By 1994, whilst the absolute numbers of licences had risen for both men and women, the proportion held by women had increased to 46 percent (NRMA, 1996). Even more significantly, 75 percent of older women now hold drivers licences, compared to 50 percent in late 1970s (NRMA, 1996)

Understanding women's use of the motor vehicle

Studies of women's use of the motor vehicle, and the reasons underlying this use, are rare in the women and transport literature. Throughout the 1980s emphasis was placed on documenting the ways in which women are poorly and disadvantageously serviced by current transport arrangements, and in particular public transport (eg Lang, 1992; Pickup, 1988). The argument was that public transport accommodates neither complex, multi-purpose trips, nor domestic duties like shopping, nor women's across suburban, out-of-peak journeys, nor does it allay women's fears for their safety.

The evidence presented above suggests that this focus on disadvantage may be outdated. Women's increasing use of the motor vehicle also highlights a substantial gap in the women and transport literature, for there has been surprisingly little research on women's use of the car and of its roles in their daily lives (Wachs and Crawford 1991). On the one hand, critics of public transport suggest that cars may be becoming more important to women, but again no follow up investigations appear. There are some exceptions, such as Rosenbloom's (1991) analysis of why working families need cars. In Australia, Richardson et al. (1996) suggest that women working part-time are especially reliant on the motor vehicle. Still required is an in-depth examination of the social and cultural conditions that determine women's car use.

Current trends and some overseas studies make it possible to infer some of the social determinants of women's use of the motor vehicle. Australian women's increased participation in the paid labour force (McDonald, 1995) means that an increasing number of women are juggling family and paid work responsibilities. According to Rosenbloom (1991) and NRMA (1996, p.4), the car is essential to this model of family life. It provides the spatial and temporal flexibility required to do a job, raise children and maintain a house. The location and timing of women's paid employment may also make the motor vehicle most appropriate for women's journey to work. Women tend to work part-time (Toon, Glazebrook and Searle, 1994). The sectors in which part-time work for women has increased significantly, for example the retail sector, are also sectors that are increasingly suburbanised. These journeys are more likely to be undertaken by private vehicles because, as outlined in the first section, public transport loses its convenience out of peak hours and for cross-suburban travel. Suburban locations also suggest the wider availability of parking at the employment site.

The above explanations of how the motor vehicle fits into women's daily lives suggest that the motor vehicle may be central because it offers convenience and flexibility, especially in women's attempts to combine home and paid work. They are, however, largely based on inferences rather than more concrete studies. Because of this, a small exploratory study of women's motor vehicle use was undertaken. Its aim was to investigate, in a preliminary way, the role of the motor vehicle in women's daily routines. Is it, for example, a key coping and survival strategy given their complex time-space schedules? More specifically, what reasons do women themselves give for car use? Does it provide peace of mind with respect to children's safety? In other words, how are women thinking about the motor vehicle? What interpretations, values and priorities are determining its use?

Findings from a qualitative case study

A qualitative project to investigate how family and work activities impinged on travel needs and to explore the values and priorities that influenced use of the car, was undertaken between December 1996 and March 1997. A qualitative approach was adopted for two reasons. First, the paucity of information in this field meant that there were no clear hypotheses to be tested. Second, the explicit goal of the research was to investigate the social contexts and priorities that were governing women's use of the motor vehicle. Our primary interest was not in comprehensively documenting women's daily travel patterns, but in how and why women chose those particular modes and routines, what they thought about car use, and the intricate details and values that surrounded their use of the motor vehicle. Both these goals are best achieved through intensive analysis of a small number of cases, for reasons summarised in Minichiello (1995)

In brief, the level of detail required and the necessity of establishing rapport with respondents to elicit their perspective, led to a small number of face-to-face interviews being conducted. This section reports the preliminary findings from the first set of interviews. After outlining in more detail the methodology of the project, the main social and cultural determinants of car use found in the study will be briefly introduced. It is important to bear in mind that the analysis presented here is far from exhaustive. Rather, its aim is to identify factors that are important and that will be investigated further

Methodology

In order to explore how women use and interpret the role of the motor vehicle in their daily lives, semi-structured interviews were conducted with 10 women in each of two regions of the Greater Sydney region. This format was adopted to allow the women interviewed more freedom to raise and discuss issues and concerns, and to explore the connections between everyday life and transport constructed by the women themselves, not the researcher. Each interview was guided by a schedule that listed the issues to be covered: general demographic information, transport choices, motor vehicle use, neighbourhood interaction, parenting beliefs and practices, and general perceptions of transport. This interview guide meant that all issues were covered in each interview. However, the guide did not take the form of a questionnaire with rigidly defined questions. Rather, when each issue was discussed, and the depth with which each issue was covered, depended on the specific circumstances of each respondent and interview situation

Interviews were conducted in the Hills District and the Central Coast (see Figure 2). These sites were selected because they were suburban districts experiencing rapid population growth and housing a large proportion of families living in detached dwellings. It was felt that these locations were typical of the sorts of places in which many Australian families wish to live. The Hills and the Central Coast differ, however, in transport infrastructure. The Hills District consists of outer suburbs with a high level of car use and ownership. It is poorly served by public transport, especially trains. The Central Coast, though further from the CBD, has a frequent and reliable train service to
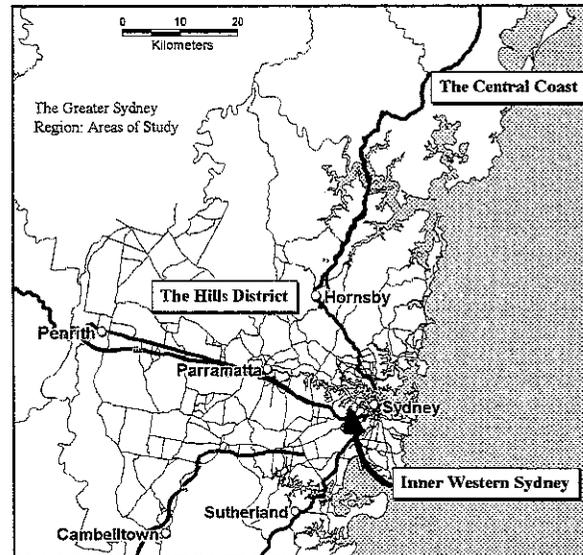
Sydney's CBD and North Shore, and was notable for its stable levels of car use in 1981 and 1991 (Department of Transport). Both areas are population growth areas.

Because of the qualitative approach adopted, respondents were not selected randomly. Articles that outlined the aims of the study and asked for volunteer participants were placed in local newspapers in each of the regions. When respondents subsequently contacted the NRMA a brief telephone survey was administered. The characteristics of those who respondents shown on Table 3. An attempt was made to interview different sorts of women according to labour force participation, age, age of children and length of residence. However, because of the nature of these who responded, those interviewed tended to be either not in the labour force or working part-time, with school-aged children, and with ready access to a motor vehicle. Interviews took place in the respondent's home and ranged in length from one to two hours. What follows is a presentation of the major themes to emerge from the interviews. Due to space constraints, differences between the two regions are not emphasised. Instead, interpretations common to the women interviewed are drawn out.

Table 3: Characteristics of Survey Respondents

Characteristic	Number of respondents (n=36)
Age	
19-24	2
25-29	3
30-39	10
40-49	10
50-69	7
over 60	3
Household Type	
Nuclear family	19
Single parent	4
Couple (no children)	7
Live Alone	3
Other	2
Employment	
Not in the labour force	16
Part-time	11
Full-time	8
Access to Motor Vehicle	
Ready	29
Limited	0
None	3
Do not drive	3
Use of Public Transport	
Never	5
Rarely	13
Occasionally	8
Daily	6
Twice weekly	1

Figure 2: Location of Case Studies

0   10   20
Kilometers

The Greater Sydney
Region: Areas of Study

The Central Coast

The Hills District Hornsby

Penrith

Parramatta

Sydney

Inner Western Sydney

Sutherland

Campbelltown

Women's transport patterns in the Hills District and Central Coast

Although it was not the primary purpose of the interviews to document travel patterns, it is necessary at the outset to provide information on the daily travel choices of the women interviewed With only one exception all were reliant on, and had ready access to, a motor vehicle In the Hills, the women's household had at least two cars, with one entirely at their disposal In the Central Coast, families were more likely to have one car, but because men travelled to work by public transport, women also had ready vehicle access Reasons for this level of access are explored below

Public transport time consuming and inflexible

The findings of the women and transport literature with regard to the inappropriateness of public transport were part of the everyday understandings of the women interviewed. Although some knew the public transport routes in their local area, most only used public transport rarely, typically when a car was temporarily unavailable This situation was because of a widely held perception that public transport, especially buses, was inappropriate for women with children Common to both buses and trains were difficulties encountered if travelling with young children Climbing train steps, or getting into buses, with toddlers and/or prams was described as almost impossible Safety was also an important issue One Central Coast woman would not travel on buses because of a lack of child restraints

The physical difficulties associated with public transport paled in comparison with its inapplicability to women's spatial and temporal schedules Services were described as

infrequent, which, combined with their rigid schedule, made them difficult to use. A woman in the Hills described her local bus service as especially inappropriate. With three children under five, she found it extremely difficult to be able to make it to the bus stop on time, either leaving from home or returning from the shops. The consequences of not making the bus were great since it only came once an hour. Returning home or waiting at the shops and/or bus stop at the other end for an hour was an extremely onerous situation for someone with three young children, so she preferred not to take the risk. Instead, she drove. On the few occasions she did get the bus to the local shop, she got a taxi home instead of waiting for another bus.

Time was also an important element in negative evaluations of public transport. Women both in and out of the paid labour force were unwilling to double their travel time by using public transport. When asked whether she could go to playgroup on the bus, one woman with two young children replied:

> Probably I could, yes, it would be cumbersome though. I would have to catch a bus to Castle Hill, change there and get another bus out. But I could probably do it. it would take a lot longer, yes. And playgroup starts at 10 o'clock and I'd be battling to get there. I'd be getting there just as its time to finish

Car use, then, was at least partly a response to the perceived inapplicability of public transport

Time, flexibility and convenience

Time, and especially lack of, and constraints on, time, also positively influenced car use. Getting somewhere quickest was the overarching goal of travel, possibly part of Mackay's (1993) documentation of a perception that people are being asked, and attempting, to fit more into their schedules. Many more minutes of the day are formally accounted for, with increasing demands on people's time. Attempting to fit many activities into a day made time more precious, and the motor vehicle was perceived to be an important means of maintaining any sense of spatial and temporal control.

Alongside complex time-space schedules is an unwillingness and/or inability to coordinate schedules with others. Families defined their travel needs individually rather than collectively. Children's activities were highly dispersed. Together, these two factors meant that car pooling was either not possible, or not considered. One Central Coast woman's child went to the same childcare centre as her neighbour's. They didn't share rides because the children either went on different days, or started at different times. Individual flexibility also occurred within families. According to one Hills woman:

> Well actually my son and my husband work in the same suburb but one starts an hour earlier than the other. Mostly they will go together but my husband travels, yesterday they went together but today they've taken their own cars".

Complex lives

Car use was also a response to women's other activities and priorities. The major theme to emerge was that women's continuing primary responsibility for home and family involves complex spatial and temporal needs that only the motor vehicle can accommodate. As suggested in the literature, women's trips are more diverse both spatially and temporally. Linked trips are important, especially to and from work. Take this woman with two children from the Central Coast as an example.

> I drop my son off at school then I drop my daughter off at pre-school which is another kilometre or so down the road and then I'm off to work. And then I pick my son up from school by 3 o'clock again I have to be back for that, and then at 4.30 I'll be in the car again to pick my daughter up from school.

Contrary to Rosenbloom's (1991) research on women's car use, it was not only combining home and paid work that influenced car use. For women not in the labour force their days at home with children were just as complex as those juggling work schedules, and their car similarly defined as central. An example from a Central Coast woman with a young child:

> I will take my husband to work in the mornings and pick him up in the afternoons ... And so I will drop him off there in the morning, then I come home and then I have swimming And then we come home and then we go to a meeting - a mother's meeting - and then we come home, and I might get something from the shops in the afternoon I usually get that on the way to going and picking up my husband up in the afternoon, and then we come home.

Indeed, it is arguable that the car is offering some key independence to some women at home full time. Says a woman from Central Coast: "Just so I could get out and about and do what I want and not be stuck at home and rely on other people". This was especially the case because her husband's commute meant that he was away from the house for 11 hours each day. Or another woman from the Hills, when asked if she had ever considered not having a second car:

> When we first moved here, we didn't know at that stage whether [husband] was going to get the company car and so I kept saying I needed a car to manage. And I still think that I could manage without it, but I would be restricted severely. ... I would have to cut things out, or rely on other people.

The car appears to be more than a response to complex time-space routines. It also offers women not in the labour force the mobility and independence they feel they need to combat potential suburban isolation.

Parenting cultures

Journeys undertaken by women were also influenced by perceptions of safe places and appropriate activities for children. In terms of safety, there is a common perception that Sydney is an unsafe place to live, especially for children. Alongside these safety concerns are more general changing attitudes toward parenting. Overseas and Australian studies (eg Dowling forthcoming; Richards 1990) have shown an increased involvement and

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valuation of formal rather than unstructured children's activities Consequently, children are enrolled in ever more activities and their spare time structured

Both these factors - fears for safety and an increase in organised activities - came out in the interviews It was widely held that it was best for children that they be involved in a number of extra curricular activities, like sport, music and dance Children were generally driven to these events and the description "taxi driver" easily applied to most of the women interviewed The driving of children to these activities was not only the product of factors such as location, safety, and distances involved Also important were what women considered important to being a good mother Being able to take their children to these activities, and participate in them, was important to their self definition

These notions of good mothering also underlay another factor that influenced car use: the spatial dispersal of children's and women's activities Distance and location were not accorded top priority when evaluating alternative locations The car enabled women to access what they defined as the best quality care/activities for their children For instance, one woman took her children to a playgroup a 20 minute drive away, even though there was one closer, because she felt that it was a better group Similarly, a Central Coast woman considered a preschool within walking distance, but preferred one a 10 minute drive away because of what she described as better facilities School decisions were similar One Hills woman had two high-school-aged sons who attended two different schools, neither of which were local She would drop each off them at school before going to work each morning She explained that she wanted her sons to have the best available opportunities, and that if it meant more driving for her, then that was a sacrifice she was willing to make

Summary

Together, these were the interpretations that the women interviewed gave to, and used to structure, their motor vehicle use Our argument is not that factors like the location of employment, shopping and childcare, women's incomes, and their domestic responsibilities are unimportant Rather, it is that women's interpretations of their positions as workers, wives and mothers, and what they define as important to each of these, may also be playing a role in determining women's use of the motor vehicle In particular, these women were using the car as a "management tool" They valued the mobility provided by the motor vehicle because it helped them to juggle competing demands most effectively in a context where time was scarce Access to, and use of, a car enabled them to put into practice what they defined as good mothering It allowed them to enrol their children in what they saw as the highest quality activities, regardless of their location Negative evaluations of public transport thus coincided with a positive and strategic use of the motor vehicle to manage their complex daily routines

Conclusions and policy challenges

This has been a small, exploratory study from which few general conclusions can be drawn The general approach of the study is worthy of comment, however In designing this research, we explicitly went against the trend in the women and transport literature

of documenting the ways in which women are poorly and disadvantageously serviced by current transport arrangements, in particular public transport. As late as 1995, a focus on the motor vehicle was still seen as inappropriate to women's travel behaviour. For example, according to Costain (1995) " The 1980s were the era of road building and the reshaping of many cities to accommodate the car which has had an adverse effect on the pedestrian environment and hence on women" We believed, as outlined in this paper, that a focus on documenting women's disadvantage had led to an inadequate and incomplete understanding of the role of the motor vehicle in women's lives. We have also not conceptualised transport as a constraining factor in women's lives, nor as passive victims of transport circumstances.

Certainly the availability of transport does operate as a constraint, but we also know that women modify the available transport alternatives to meet their needs. Women (and men) are active participants in the creation of transport choices. Our study confirms the benefits of this approach. For the women interviewed, transport was not constraining, but enabling. Transport, and in particular the motor vehicle, enabled them to meet expectations of them as wives, mothers and workers.

Women's actual use of the motor vehicle has also been a missing element of current policy debates. Now in an era of raised environmental awareness and debate on what solutions should be implemented to reduce increasing levels of car use, whether to reduce the incidence of traffic congestion, greenhouse gas emissions or improve urban air quality, women's mobility is once again in question as individual social justice considerations are played against community environmental aspirations. The irony too is that women are often the ones most concerned about the state of our urban environment (NRMA, 1995).

If social values and culture have as much to do with car use as do the location of urban activities and the availability of transport infrastructure then there is a real challenge ahead for policy makers. The findings of this study suggest that precise targeting of policy measures will be more difficult, but no less important. The challenge, however, should not be seen as an impossible one, but rather one of necessary policy integration and appropriate targeting of specific groups and types of travel.

The following is some food for thought when considering policy implication:

- Women's travel habits and patterns demonstrate to transport and urban planners the difficulty of their challenge to reduce dependence on the motor vehicle, but identifies the need for the integration of other complementary strategies to address behaviour change and community perceptions and values

- There is a demonstrated need to target and tailor strategies for reducing private motor vehicle travel according to demographic, spatial and cultural differences. Strategies that focus on individual behaviour changes might receive considerable backlash from groups who do not perceive there to be alternatives to motor vehicle use even in areas of reasonable public transport service availability.

- The conventional approach to transport planning, through the assessment of peak hour travel movements, the journey to work and focus on movements in and out of the CBD, does not result in the provision of a transport system which meets the need of the myriad of non-conventional trips being carried out by men and women More consideration and assessment of out of peak, non-work trips is required

- The design and location of suburban activities and their inter-connectivity in new and established areas could reduce the need for short car trips and improve the opportunity to carry out multipurpose trips

- While women's concerns for personal safety when using public transport may not be as serious as perceived, their concerns must be addressed nevertheless, to ensure a feeling of improved safety This requires a package of structural, educational and service improvement measures Safety concerns do not only translate to a reluctance to use public transport, but also to a reluctance of parents to encourage children to use public transport, thus aiding the development of another car dependent generation

Finally, it needs to be borne in mind that the findings of this study with regard to the centrality of the motor vehicle may not be confined to women, nor pertain to all women Just as women's use of the motor vehicle has been inadequately understood, so to has men's Information abounds on men's journeys to work, but not of their domestic uses of the motor vehicle Yet the factors outlined here as influencing women's use of the motor vehicle - such as notions of what it means to be a parent in the 1990s and time pressures - may not be specific to women Indeed, suggestions that men's involvement in parenting tasks is increasing may be leading to a similar use of the motor vehicle Further research is therefore needed on men and their cars

Similarly, the category "women" needs to be disaggregated It may be that there are as many differences among women as there are between men and women. Dimensions such as age, ethnicity, income, spatial location, and employment status differentiate women's transport practices and needs In further rounds of analysis in this study, and in future research, these differences between women will need to be heeded

Acknowledgments

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