

# **Car use and gender: The case of dual-earner families in Utrecht, the Netherlands**

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## Introduction

This chapter focuses on the gender dimensions of car use in everyday life. In so doing I draw on, and hope to contribute to, the rich academic literature about this topic distributed across the fields of geography, transport studies and feminist scholarship. Interest into the gender dimensions of car use is not new. Researchers have chartered and tried to explain differences between men and women in car use for more than thirty years (Rosenbloom, 2006; Hanson, 2010). Most of this work is embedded in the *women and transport* (Law, 1999) literature and has adopted a quantitative approach, relying on survey data. It not only has been very effective in dispelling the myth of the neuter user of transport modes and infrastructure, but has also allowed us to grasp that many women need cars because of their complex space-time activity schedules: cars help them to negotiate the otherwise incompatible demands imposed by employment and housework and caring responsibilities (Hanson and Hanson, 1980; Fox, 1983; Pickup, 1988; Rosenbloom and Burns, 1994; Dobbs, 2005).

Whilst extremely insightful, this body of work about women's and men's car use is inevitably partial. Gender differences are typically explained in terms of the social relations of the household and workplace but other dimensions of gender – in particular gender as a set of continually evolving meanings, discourses, identities, embodied skills and practices – have received less attention (Law, 2000; Hanson, 2010). In the past decade, a small number of studies about women's car use have adopted a more holistic and social theory-based understanding of gender (e.g. Dowling, 2000; Siren and Hakamies-Blomqvist, 2005; Murray, 2008). These studies of *gender and mobility* provide a more subtle understanding of the gendering of car use but are partial in other respects. As Hanson (2010) also notes, they tend not to measure car use, access to different transport modes and the gender division of paid and unpaid work as precisely as do researchers in the women and transport literature.

In short, there exist two sets of knowledge regarding women, gender and car use. One is 'extensive' and provides mostly quantitative descriptions of the regularities characterising men's and women's car travel for larger numbers of respondents; the other is 'intensive', offering 'thick' descriptions of car mobility for (much) fewer participants. It is fair to say that two types are poorly integrated with each other – a situation I, much like Hanson (2010), consider undesirable. Richer, more textured and context-sensitive understandings of (persisting) inequalities in car use between and within men and women in particular places and times would become possible, if both types of knowledge were brought together. Such integrative knowledge of gender and car use would not only be of academic interest but also have policy relevance. It might, for instance, contribute to the designing of policies to decarbonise road transport without compromising women's possibilities to juggle homework and care-giving – for which they remain disproportionately responsible in Western societies – with paid labour.

It is against this background that this paper examines the multifaceted gendering of car use, by paying attention to gender differences in access to cars, household

responsibilities, employment situation as well as to norms, discourses, practices and cultures of mobility. To this end, I will use in-depth interviews in conjunction with a specifically designed questionnaire among dual-earner households with young children (at least one child aged 0-8 years) in the Utrecht region of the Netherlands. Importantly, the study focuses on car use and the home-work link – i.e. the use of the car to travel to/from work and to weave this together with the ferrying of children to elementary school and childcare provided by crèches, nurseries, after-school programmes and others. This focus is related to the increase in mothers' participation in the labour force and the shift from the breadwinner family towards the multiple adult worker model as the norm promoted by (national-level) social policies in the Netherlands and elsewhere in the western world (Van Wel and Knijn, 2007; Lewis and Giullari, 2005).

The study also draws disproportionately on the experiences of well-educated families in the higher echelons of the middle-class society in both suburban and urban areas. And this is no coincidence. Women in these households tend to work the most hours per week in the Netherlands (Van Wel and Knijn, 2007; De Meester and Van Ham, 2009). These households also rely most on the childcare by nurseries and related institutions and hence have to balance the temporal regimes of such institutions with their own employment hours most frequently (SCP, 2006). Further, whilst attitudes towards gender roles are more egalitarian in more highly educated households, the normative idea that mothers' care for children is the best for a child's development continues to be pervasive in the Netherlands (Van Wel and Knijn, 2007). Hence, many mothers in the households in this research find themselves in a particular situation: generally well-educated, often with a partner who is quite supportive of their paid work and career, they still have to negotiate norms about traditional gender roles in their everyday activities and social interactions with colleagues, relatives, friends and neighbours.

## **Women, gender and cars**

### *Women and transport*

The academic literature about women and transport emerged at the intersection of transport studies, time-geography and feminism and sought to make visible and explain women's 'transport disadvantage' (Law, 1999). Following in the footsteps of Ericksen (1977), Giuliano (1979) and Hanson and Hanson (1980), many researchers set out to describe women's travel behaviour and contrast this with men's in the 1980s and 1990s. Space limitations do not permit this literature to be summarised in detail; suffice it say that studies have repeatedly shown that women tend to have shorter commutes, conduct more household-serving trips, make less use of the car, and chain trips into complex tours more often than do men (e.g. Fox, 1983; Gordon et al, 1989; Turner and Niemeier, 1997). Most of the literature focused, however, on commute distance and time.

Various explanations for the observed differences in commute behaviour (and car use) were put forward in the literature, including the gendering of access to such transport resources as driver's licences and cars (e.g. Giuliano, 1979; Fox, 1983), the unequal division of household responsibilities within the household (e.g. Johnston-Anumonwo, 1992; Rosenbloom and Burns, 1994), the lower occupational status and income of women (e.g. Madden, 1981; White, 1986), and differences in the spatial distribution of male and female-dominated jobs (e.g. Hanson and Johnston, 1985). Put otherwise, differences between men and women in commute behaviour and car use have often been attributed to social relations in the household and workplace. Women travel differently from men because they:

- have more limited access to cars;
- have to seamlessly weave together paid work, the bulk of a household's shopping, errands and the ferrying of kids and – if time permits – social and leisure activities;
- hold lower paid and often part-time jobs in occupations and sectors that are distributed more evenly throughout urban areas.

Note that these three factors may have contradictory effects on car use, with the second likely to enhance and the first and third factors reducing car use. Further, given that these factors collectively could not explain all gender differences in commute behaviour (see e.g. Gordon et al, 1989; Turner and Niemeier, 1997), it seems that additional factors need to be taken into account to explain differences in women's and men's car use. It is, therefore, not surprising that researchers have sought to extend studies from the 1970s, 1980s and early 1990s and to enhance our understanding of the gender dimensions of commuting and car use in a variety of ways. First, some authors have sought to ascertain whether the gender gap in commuting behaviour varies spatially (Wyly, 1998; Schwanen et al, 2004) or diminishes over time (Crane, 2007). This work suggests that geographical variations exist and that differences seem to narrow slightly but also that the inequalities in mode use and trip length are more obdurate and stable than planners and activists might have hoped.

Second, from 1990 onwards, studies began to appreciate differences between men and women in non-work travel to a greater degree (e.g. Mauch et al, 1997; Kwan, 1999). Also, more explicit attention was paid to differences among women: variations within women's travel behaviour along lines of race/ethnicity, class, age and so on began were studied more systematically (e.g. McLafferty and Preston, 1992; Rosenbloom 1993, 2006). This followed from the recognition that the travel practices of, say, well-to-do, white women in their early twenties are too different from those of elderly women from African descent on a state pension to be lumped together in a single category. Third, additional explanations for differences between men and women in car use have been put forward. Studies in Germany and Sweden suggest that women's lower car use may be related to their greater environmental concerns (Matthies et al, 2002; Polk, 2004). Some researchers – most notably Robin Law (Law, 1999) and Susan Hanson (Hanson and Pratt, 1995; Hanson, 2010) – argued for a deeper engagement with social and feminist theory and for a move from 'women and transport' towards 'gender and mobility'.



## *Gender and mobility*

In an influential review paper, Law (1999) praised the achievements of the women and transport literature but criticised this strand of work for “drawing on concepts from the gender literature in an *ad hoc* manner” (page 572). She, much like Hanson and Pratt (1995), sought to develop more comprehensive conceptualisations of gender and mobility. Accordingly, she proposed to understand gender as a category that structures social relationships and produces inequality through the gendering of the division of labour and activities, access to resources and the construction of subject identities. Gender, according to her, also provides a symbolic code by which items, activities (including movement through physical space) and the built environment are imbued with meaning. In so doing, she moved beyond the instrumentalist conceptualisation of everyday trip as getting from A to B but as something that is invested with meaning and emotion, embodied and constitutive of feminine and masculine identities. This more-than-instrumental understanding of mobility resonates with more recent work in cultural geography, such as Tim Cresswell’s. For him mobility is the entanglement of actual and potential physical movement, meaning and embodied practice (Cresswell and Uteng, 2008).

The potential of perspectives propounded by Law, Hanson and Cresswell is exemplified in studies of parenting and mobility. Dowling (2000) shows that for suburban mothers in the Sydney region the car is an instrument to enact middle-class cultural norms of being a ‘good’ mother – someone who strives after the ‘moral imperative’ of meeting her children’s needs and invests much energy and emotions in their (future) wellbeing (Valentine, 1997; Duncan, 2005; Murray, 2008). The car allows those mothers to ferry their children to schools, nurseries and to extra-curricular activities that need not be the nearest available but rather the ‘best match’ with the children’s needs and competences and that prepare them optimally for adult life. Mothers use the car to this end even if this implies sacrificing their own preference for other transport modes, which are generally perceived inadequate for and inappropriate to responsible mothering. But car use is imbued with meanings in other ways too. It is a means of getting children to places safely, minimising the risk of injury from traffic incidents and reducing ‘stranger danger’. It is also an opportunity to spend precious quality time with one’s children. In sum, a distinctive car culture – an acculturated style of doing and making sense of things premised on cars – could be identified among Sydney’s suburban mothers.

Later studies in other geographical contexts have corroborated and extended Dowling’s findings. For instance, Laurier et al. (2008) show that parents – and especially mothers – and children use shared car trips as an opportunity to talk with one another. The car trips is, then, a site of social learning where children train their argumentation skills, are taught about rules and rights and learn how to renegotiate those. According to Bean et al. (2008), car use in Auckland, New Zealand is often understood by people as caring for children and others (by ferrying them around), as providing safety for oneself and others and as facilitators of social life. The construction of car use as caring emerged very dominantly in a study among older women drivers in Finland (Siren and Hakamies-

Blomqvist, 2005). The authors suggest that, for older cohorts of women, the aligning of car use to care-giving, social responsibilities and altruism legitimated that they obtained driver's licenses, that cars become available to them, and that they were able to benefit from the independence and flexibility cars afford. Hence, cars were both emancipatory tools and means that reproduced the gender division of household labour for older generations of women.

In short, these and related studies (Jain, 2002; Murray, 2008) suggest in the words of Sheller (2004, pages 232-233) that "*cars become ... also members of families, repositories for treasured offspring and devices for demonstrating love, practicing care and performing gender [that] link human and machine in a deeply emotive bond*".

## **Empirical context**

As the above demonstrates, both strands of research have rendered important yet also partial insights into the gender dimensions of car use. In an attempt to put these two bodies of work in greater dialogue with each other, I am using qualitative and quantitative data about the everyday mobility of heterosexual, dual-earner family-households with at least one child younger than eight years old in the Utrecht region in the Netherlands. These data have been created in two phases.

The first consisted of interviews with one male or female parent per household, loosely structured around a one-day activity/travel diary that participants kept on the day prior to the interview. Forty respondents were recruited via a primary school and a nursery in the city of Utrecht and a nursery in one of the city's more distant suburbs and via snow-balling methods (whereby participants were asked whether they knew other parents in dual-earner families who would be interested in taking part in the research). The interviews were recorded, transcribed and analysed using an approach informed by grounded theory (Corbin and Strauss, 2008): I translated the raw interview data into meaningful concepts, whose properties and dimensions I developed in several iterative rounds of analysis. I also related concepts to each other and grouped them into higher-level categories or themes. Finally, I employed the developed scheme of concepts and themes to compare and contrast participants' narratives. In this way I identified broadly representative and/or particularly insightful excerpts from those narratives for discussion in this chapter.

The second phase consisted of a mail-out/mail-back questionnaire about how mothers and fathers coordinate and balance employment duties and the caring for children on workdays. This focus was derived from the interview phase. Respondents were recruited via five primary schools and nineteen childcare providers in the city of Utrecht and surrounding suburbs where some 2,350 invitation letters were distributed among parents. Parents were asked to return the included registration form if they were a dual-earner family (both parents working at least ten hours per week) or a single working parent. 715 households were willing to participate, of whom 557 returned a mail-

out/mail-back survey (24% response rate). After screening, 490 households with adequate information about both parents were included in the analysis. I chose to recruit households via a sample of nurseries and elementary schools in and around the city of Utrecht because these are institutions where parents in dual-earner households with young children can be reached effectively; it was also justified in that prior Dutch research had shown that many parents find it challenging to reconcile the opening hours of childcare services with their own employment times (SCP, 2006).

It should be emphasised that the participants in both phases are not representative of all dual-earner families in the Utrecht region. Highly educated parents (university degree or high vocational training) are overrepresented with 50% in the interview and 80% in the survey phase. Households in strongly urbanised neighbourhoods (i.e. within the city of Utrecht excluding the large Greenfield development of Leidsche Rijn, which is located to the immediate west of the city) are also overrepresented with 65% and 38%, respectively. Further, I conducted the bulk of the interviews (75%) with mothers, presumably because their framing as explorations of work/life balance issues resonated more with them than with fathers. Despite the relatively urban and highly educated profile of the participants, the families collectively exhibited significant variation in terms of employment situation, age and number of children and residential location to allow detailed insights in transport mode use and everyday mobility more generally. A more detailed description of the participants is available in Schwanen (2007).

## **Who commutes by car?**

As a first step of analysis, I begin with discussing differences between men and women in commuting mode. Overall a majority of the study participants commutes by car. Table 1 suggests that about 61% of the fathers and 52% of the mothers in survey drive a car to access their primary employment location. As expected in the Dutch context, the bike ranks second for both sexes with shares of 29% and 24% respectively. This is followed by the train, which is used for one tenth of the commuting journeys by both men and women. These differences between the sexes are somewhat smaller than in the Dutch population as a whole, which seems to reflect the overrepresentation of highly educated parents among the participants.<sup>1</sup> This highly educated profile, together with Utrecht's excellent train connections to all major Dutch cities, are also the reasons why the share of train commuters is about twice as high as in the Dutch population as a whole.

*[Insert Table 1 around here]*

Table 1 further shows that the combination of both partners commuting as a car driver occurs most frequently in the participating households, followed by the arrangement of

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<sup>1</sup> In 2003, the most recent year for which the modal split for commuting trips for men and women are available online, 58% of Dutch men commuted as car driver, 21% by bike and 4.9% by train; the corresponding figures for women are 47%, 30.1% and 5.3% (Statistics Netherlands, 2010).



both travelling by bike. The gendering of commuting mode use implies not only that mothers drive cars less frequently but also that the combination of a father driving and his partner cycling occurs almost twice as often as the opposite.

Finally, the modal split is slightly different among the forty interview participants. With 53% among the women and 40% of the men, the bike is the dominant mode. The car driver mode ranks second with 33% and 40%, respectively. This difference with the survey phase reflects differences in participant recruitment. For the interviews I deliberately recruited a large share of parents residing and working in the dense parts of Utrecht as I was particularly interested in the challenges of juggling home and work demands in high-density areas in that stage of the research.

### **Exploring differences in commuting mode**

The survey also allows me to explore how differences in commuting mode between the participating mothers and fathers vary with access to transport resources, household responsibilities and employment situation – factors that have played a major role in the women and transport literature. Based on initial analysis of the interview transcripts, I measured transport resources, household responsibilities and employment factors separately for both parents in each household in various ways in the survey. For instance, I decided to use precise indicators of who actually performs such tasks as ferrying children in addition to the number and age of children, which have been used frequently as a proxy for household responsibilities (e.g. Madden, 1981; Turner and Niemeier, 1997). I also considered the opening hours of elementary schools and such childcare providers as nurseries and after-school care programmes. This is because the interviews had suggested that differences in commute behaviour seemed to depend on the temporal regime within which parents wove together employment and domestic responsibilities.

Table 2 shows that even among the highly educated households participating in my study, access to transport-related resources and activities in the domestic and employment spheres are gendered, albeit to varying degrees. The differences between fathers and mothers are smaller for possession of a driver's license, perceived car availability, one-way commuting time and employment time sovereignty. On the other hand, they are pronounced for position on the occupational ladder and the number of days and hours allocated to paid labour. There are also clear differences in terms of who ferries children around, especially in the afternoon and evening. Finally, mothers often work in different sectors than their partners: they work more often in (health)care, education and the non-profit and government sectors and less in manufacturing, construction, transport and logistics and the information technology (IT) and software development sector.

*[Insert Table 2 around here]*

To see how these different factors interacted with car use between home and paid work, I conducted a bivariate probit analysis with binary indicators of mothers' and fathers' car use for commuting as dependent variables. The coefficients of the equations for mothers' and fathers' car use are estimated simultaneously, because the decision to commute by car made by the male partner is likely to shape and be shaped by the female partner's decision. Not recognising such household-level interactions may bias coefficient estimates. In the model I used the factors in Table 2 as independent variables, as well as the number of cars available to the household<sup>2</sup>, the number and age of children, the number of days per week children are brought to childcare providers, the temporal schedules of elementary schools and childcare providers used, and the population density of the area (four-digit postal code area) around the dwelling and primary employment location.<sup>3</sup>

Before turning to the results in Table 3, I wish to emphasise that the model only indicates which factors are, all else equal, related to car use. It is not intended to convey causal relations. If anything, the interviews showed that the specification of unidirectional causal links between variables is inappropriate as far as the home-work link in dual-earner family-households is concerned. I use the bivariate probit analysis to see whether and how a certain factor statistically differentiates car commuters from those travelling with other modes whilst controlling for the confounding effects of other factors. Not all factors mentioned above are included in Table 3. This is because they were not statistically significantly related to the inclination to commute by car for either mothers or fathers (at  $p < 0.10$ ). The only exception in this regard is the share of weekly ferrying to childcare and/or school, which is included because of the contrast with the share of ferrying from childcare and/or school.

*[Insert Table 3 around here]*

### *Similarities between mothers and fathers*

The model indicates that various commonalities and differences in fathers' and mothers' use of the car during the home-to-work journey can be observed. At least three commonalities stand out. First, the number of cars and perceived car availability are clearly and strongly correlated with the inclination to commute by car in both sexes, although the effect of number of cars is considerably stronger for fathers than mothers. It appears that, among the study participants, (household-level) decisions about car ownership are tied more clearly to fathers' than to mothers' use of the car as main

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<sup>2</sup> A more precise indicator would be the number of cars relative to the number of drivers in the households. Yet, because driver licence rates are so high among the survey participants (Table 2), the car to driver ratio and the number of available cars are virtually equivalent indicators.

<sup>3</sup> The density variables served as somewhat crude proxies for the intensity and diversity of land use and availability of public transport services; these dimensions were too interdependent to be incorporated separately in the analysis.

commuting mode. In general, the effects of number of cars and car availability that access to transport is not a key factor in the gendering of car use among the participating households.

Second, the effect of commuting time is roughly the same across the sexes: as the duration increases, participants are more likely to commute by car, which reflects the dominance of the bike among the non-car driver modes (Table 1). Third, for both mothers and fathers, the share of ferrying from school or childcare providers to home in the evening is positively and more strongly correlated with car usage than the gender division of ferrying from home to school or childcare in the morning (although some of the coefficients are not statistically significant at  $p < 0.10$ , primarily because of the limited size of the sample). We might thus say the following: the more complicated the jigsaw puzzle of combining employment and picking up one's child(ren) from school or childcare provider, the more reliant on the car the participating parents of both sexes are. However, given that mothers are about twice as responsible for picking up the child(ren) (Table 2), the car is a more important 'sewing-machine' for them.

### *Differences between mothers and fathers*

There are also major differences by sex in terms of the statistical correlations with commuting mode. Put simply, mothers' car use on home-to-work journeys is, all else equal, associated more strongly with household responsibilities than fathers'; the latter is correlated more directly with employment-related factors. Thus, household responsibilities matter more to the participating mothers. This is evidenced by the result that the effect of the share of ferrying from nursery and/or school is only significant at  $p < 0.05$  for mothers. Additionally, there exists a statistical relationship between the closing time of the childcare provider and the inclination to commute by car for mothers but not for fathers: the longer the hours of childcare provision, the more likely mothers are to commute by car (although the effect of closing at 7:00 PM is not significant at  $p < 0.10$  because of the small number of observations in this category). It is less than straightforward to interpret this finding but, on the basis of the interviews, I am inclined to attribute this to a selection effect: mothers who wish to work longer hours – for career-related reasons or because they want to concentrate their paid labour on a few days – prefer childcare providers with temporally extended services and use a car to weave together paid labour and chauffeuring duties.

Additionally, the number of paid working days per week is correlated more strongly with fathers' than with mothers' inclination to commute by car. Differences in car use between economic sectors are also more pronounced for fathers. Those working in the IT and software development sector are most likely and those in the (health)care sector are least likely to commute by car. In contrast, mothers working in the (health)care sector are relatively car reliant, presumably because they hold different (lower-level) occupations within this sector (e.g. more irregular and non-conventional hours) than do men. Women are least likely to commute by car if they work in the government and to a

lesser degree the education sectors. The reasons for this pattern among mothers are unclear but may reflect that lower-level functions in these sectors are distributed relatively equally across space and that a culture of cycling to work is strongly developed in these sectors in the Netherlands.

There are also differences in the role of the built environment for mothers and fathers. For the latter population density around the primary workplace is (much) more important than around the home location. The fact that higher densities around the workplace reduce car use much more than around the dwelling for men cast doubt on the many studies into the effects of the built environment on travel behaviour that only consider the residential context. For mothers, population density at both ends of the commute matter: mothers living and working in a high-density environment are least likely to commute by car. Further analysis of the survey data has shown that this pattern reflects that mothers living and working with the city of Utrecht (excluding Leidsche Rijn) tend to commute by bicycle most frequently (see also the discussion of the interview analysis below).

Another result worth discussing is that the error terms of the equations of mothers' and fathers' car use is positive and clearly statistically significant at  $p < 0.05$ . This suggests that the decisions regarding commuting mode of both partners in the household are indeed correlated and should be analysed in conjunction to increase the statistical validity of the outcomes. Finally, the model's goodness-of-fit is acceptable but McFadden's  $\rho^2$  indicates that the specified bivariate probit model does not account for more than half of the information present in the (quantitative) data about mothers' and fathers' commuting mode. It would seem, then, that the interviews and insights from the gender and mobility literature should be capable of providing additional insights into mothers' and fathers' car use.

## **Dynamics in commuting mode use**

Despite the insightful outcomes generated, the limitations of using such statistical tools as bivariate probit analysis should not be disregarded. As already explained, treating mothers' and fathers' car use as dependent and other factors as independent variables tempts us to overlook the complex and reciprocal interactions between commuting by car and wider home-work arrangements, i.e. the times, places and particularities of paid labour, childcare and elementary school attendance. One thing the interviews suggested was that transport mode use was often not the critical dimension of home-work arrangements. The location of paid labour vis-à-vis the home and that of childcare providers as well as the time it took to connect these on an everyday basis featured more prominently in participants' narratives than transport mode use *per se* (although all these dimensions are, of course, intimately entwined).

Further, such analytical tools 'freeze' mode use on commuting journeys, rendering this as stable and a steady state rather than as something that is in flux. The interviews,

however, made clear that mode use is not stable but continually subject to adaptation (chapter 1), especially in the years after the birth of the first child. Various ‘rhythms of change’ could be identified. There are, first of all, short term fluctuations around more structural patterns. As described elsewhere (Schwanen, 2007, 2008), standard arrangements between partners about who ferries children to childcare and/or collect them are in many households provisional and fluid: they can be and often are adapted in the course of the day or the week to accommodate all kinds of contingencies. The weather can also trigger short-term fluctuations – especially when bicycling and walking are the normal modes for ferrying – with children being brought or collected by car more often when it is bad. Whatever the exact nature, short-term dynamics in ferrying arrangements sometimes entail adjustments to the transport mode used for commuting.

However, there are also more long-term processes that bear on mode use when children are young. These include changes in the employment situation, such as a new job.<sup>4</sup> Further, as a child develops from a baby to a toddler to a pre-school child to a school-aged child<sup>5</sup>, many parents adjust the frequency, duration, timing and location of childcare by crèches, nurseries, grandparents and other providers external to the nuclear family. This often implies that chauffeuring needs on the home-work link also change. Moreover, as children grow older and weigh more, the ease with which they can be taken along changes. Some (female) interviewees explained how ferrying children on a bike, for instance, is far from convenient if they are younger than two but becomes easier afterwards until they become too heavy and big to be taken in a child seat. Obviously these factors impinge less on car use, although this is not altogether unconstrained either: in the Netherlands children up to 1.35m have to travel in a certified child seat. A few women, including Vicky (see below) explained that the trouble of having to put one or more children in a seat deterred them from ferrying their children around by car.

### *Dynamics stronger for mothers?*

Overall, changes in households’ home-work arrangements triggered by the (anticipated) birth of children and their development from a baby to school age tended to have greater impacts on mothers than on their partners. The interviews suggest that men’s commuting behaviour was affected much less by household dynamics, if at all. Changes in men’s commuting situation occurred in the years following child birth but seemed more a consequence of employment career ambitions and coincidental factors than changes in household responsibilities.

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<sup>4</sup> It should be remembered that parents in the participating households generally belong to the younger half of the labour force, tend to be highly educated, and live in strategic locations – from in/around the city of Utrecht all major employment concentrations in the Randstad and the centre of the Netherlands can be reached relatively easy. All these factors are conducive to labour market mobility.

<sup>5</sup> In the Netherlands children are required by law to attend elementary school from the age of five but they commonly go the school from the age of four.

Two key changes in women's commuting surfaced. On the one hand, a few women became more reliant on cars for commuting and other trips. 'Nena', for instance, lives in a new development close to Utrecht and used to take most local trips by bike – including to her employment location but excluding weekly grocery shopping – even though she had a car available all the time. Now that she has two children, however, she does almost everything by car. She and her husband even exchanged cars: while he used to drive a bigger car, he now has the smaller one. She needed a bigger car to be able to take not just the kids along but also the pram and other items: *"I had a tiny car. When I had the pram and two kids with me, only a pack of soap powder fitted in (laughs)"*. The women in this group, like other interviewed car commuters, understood their car use clearly in terms of caring for their household (cf. Dowling, 2000; Bean et al, 2008). 'Nena', for instance, explained and justified her bigger car because she was responsible for the weekly grocery shopping and does most of the ferrying around of the children.

On the other hand, some women reduce or wanted to reduce the complexity of their home-work arrangements by working fewer hours or days or by shortening their commute. The latter reflected a desire not just to save time but especially to make it more reliable and reduce the risk of scheduling conflicts. After all, longer (car) commutes tend to make one more susceptible to unforeseen delays than local commutes by car and especially by bike – the most reliable of all commuting modes – and thus trigger anxiety and stress more often (Schwanen, 2008). There existed, however, a striking difference between thinking about reducing the complexity and actually enacting changes. Some mothers had changed their employment situation but more continued to merely contemplate adaptation.

### *Mothers stuck in car-based home-work links?*

To explore this tension between thinking and doing, I draw on the example of 'Faye' who with her husband and two daughters lives in a suburb at a considerable distance from Utrecht and works in another city some 30km away. She thinks regularly about looking for a job closer, working fewer hours and leaving the labour force altogether. None is, however, a truly viable option:

*"If I'd stop working to reduce stress, I'd have stress because every day is the same. Then I wouldn't be happier than I'm now ... Every week I think about it, and when I'm stuck in traffic once more, then I think: I'll look for something nearby. But I also know that that makes little sense, for if I'd work in Utrecht I'd be driving as long. Woerden [another city] might take 20-25 minutes, so well those 20 minutes that I now travel extra I can take on just as well, because you never know whether you'll have just as nice colleagues. And also, I do work at the level that I studied for. This occupation fits with my education ... If I look for something else, then I'd probably be a secretary and then I earn less and I won't like the job content"* [my translation]

Faye's case allows me to make a few more general points. For one, her car use is not fully habitual in the sense of simply deriving from a script that is implemented with little thought (Gärling and Axhausen, 2003; chapter 1) with little thought. Yes, she may get into the car unthinkingly in the morning, but her car use is subject to continual reflection. It is also less stabilised than repeated recording of her actual movements might suggest. Second, her car use is not merely the consequence of living in an outer suburb which is poorly accessible by public transport – there is no train station and bus services are spatially and temporally restricted where she lives – and a relatively long commute (45 minutes on average). Had public transport connections been adequate, it would not be of much use. In her (and many other interviewees) view, taking two infants on a bus from the nursery to home was a no-go option. Third, her car use is not merely a consequence of employment choices made earlier in the life course, household responsibilities or financial considerations either. With regards to the last aspect, she emphasised during the interview that her income was additional to her partner's and that most of it was spent on childcare expenses.

There is, I would argue, also an important cultural dimension to her car use. In a way that no other mode of transport affords, the car allows her to juggle not just responsibilities – she always picks up the children from the nursery – but also the identities and norms and values valorised in mainstream Dutch, middle-class society. It helps her to be a 'good' mother who does what is best for her children *and* a 'good' employee. She collects her children at an appropriate time, ensures seamless and safe travel from the nursery to the home, cooks for them, feeds them, prepares them for the night, plays with them and puts them to bed at an appropriate hour. On workdays she ensures their physical and mental wellbeing as well as she can and worries whether she does enough in this regard. At the same time, she tries to enact internalised neo-liberal aspirations and norms with regard to paid labour: she works as many hours she can, puts her acquired human capital to good use, and finds achievement in and enjoys her paid work. The car is thus key to her attempts to enact and 'work with'<sup>6</sup> normative ideals in a manner that is paced and stretched across physical space (Dowling, 2000). Whether this is emancipating is, however, a moot point. Yes, it provides the freedom to commute over a larger distance but this freedom is not unqualified; it is perhaps better thought of as coercing Faye and others into gendered spatiotemporal flexibility (cf. Urry, 2007).

Thus, as a *combined* effect of personal biography, care-giving needs, the built environment and culture, commuting by non-car modes is not a viable alternative for such mothers as Faye. Driving fewer kilometres might be, but the 'costs' in terms of reduced job satisfaction and not being able to enact a certain work-related identity would be considerable, not only for her but also for her children (for whom she would be

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<sup>6</sup> It should be emphasised that the participating mothers were not slavishly implementing these norms, deprived of any agency. These norms were sometimes worked around and adjusted to match people's situation and actual practices (cf. McDowell et al, 2005)

a different mother). For Faye these ‘costs’ were too high – when I spoke to her a year after the initial interview, her home-work arrangements had not changed much.

### Further reflections on transport modes, identity and parenting

While some interviewees found themselves in a similar situation, the experience of other mothers was quite different. Noticeable differences existed between mothers such as Faye who lived in suburbs and the greenfield development of Leidsche Rijn and women in the city of Utrecht. Additional home-work arrangements and lived experiences could be identified in the latter. One particularly prominent arrangement that was particularly prominent among the interview participants consisted of both parents commuting locally (i.e. within the city of Utrecht) and typically by bike.<sup>7</sup>

The arrangement of two local bicycle commutes is of interest for a variety of reasons. First, these mothers – and fathers – tended to experience the balancing of employment and domestic responsibilities as less stressful than those in households with long commutes. This was for a large part because shorter bicycle commutes made them less vulnerable to the effects of delays caused by road congestion, bad weather and other contingencies that can make the coordination of home and work demands very cumbersome (see also Schwanen, 2008). Second, while they also understood ferrying activity in terms of care, norms of good parenting often did *not* trigger car mobility among urban parents. ‘Vicky’ is illustrative of this group. She is a mother of three who lives in a neighbourhood built in the pre-car era and tends to do all ferrying by bike “even to the swimming pool” and “also when it rains”. This is in part because the bike is more convenient and quicker – her partner “*rather takes the car but I hate fastening the children in the car seats and then rushing with the car and you’re not faster*”. But, again, more factors matter. Various interviewees suggested that good parenting in an urban setting in the Netherlands also means teaching your child how to negotiate and take part in traffic on a bike. As Vicky commented, “*my son of five is still wobbly on his bike but well it’s the only way to learn and it goes quite well*”.

Interestingly, interviewees in the city mobilised a discourse around safety issues that differed from the more familiar emphasis on using the car to protect children from danger (cf. Dowling 2000; Murray 2008). They sought to reduce risks by accompanying their children to places on their bicycles rather than driving them around in a car. In keeping with contemporary notions of good parenting, they still exerted control and surveillance over children’s independent mobility but used an alternative transport technology that is both more practical in urban traffic and socially accepted as

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<sup>7</sup>The survey phase provided additional support for differences in home-work arrangements between the city of Utrecht and surrounding areas. For instance, the percentage of households where both partners commuted locally (within the place of residence) is 25% in the city of Utrecht, against 25% in the suburbs. Similarly, the share of households with both partners having local commutes by bike is more than three times higher in the city of Utrecht (14% versus 4%).



appropriate in the Netherlands (where cycling infrastructures are well-developed). They were also well aware of the risks of car use for themselves and for non-household members. Here is Vicky again, for whom using the car constitutes greater risk and is more stressful than biking:

*“I would take the car if it rained really hard. But then, if you’re driving in our neighbourhood, everything shines and rain on the windscreens and children in a damp car in a neighbourhood where children play or bike, narrow streets, many parked cars, one-way traffic everywhere, that is stressful. Then I prefer to bike with a cap and raincoat on and a windshield on the handlebars so that the children don’t get too wet. So I must say I feel much better with that than with driving”* [my translation]

What the narratives of mothers like Vicky suggest, then, is that the link between car use and ‘good’ parenting is not universal and inevitable. It is instead inherently spatialised and varies between places – it was in the city of Utrecht that the bike rather than the car aligned so well with notions of good parenting. This reflects the car-deterring built environment in many parts of the city but only partly: some urban interviewees did consider the car most appropriate for balancing employment and domestic responsibilities and ferrying their children around. Embodied practical experience and personal biography seemed to be at least as important. It was only among the mothers – and some of the fathers – who had used their bikes for commuting and getting around the city extensively before they got children, that the bike was central to home-work arrangements and integral to good parenting. Only these parents had found ways to successfully integrate internalised norms about good and responsible parenting with a disposition towards biking.

That is not to say, however, that the car played no role in these interviewees’ parenting practices. It tended to be used for trips involving bulky goods, such as weekly grocery shopping, and for more occasional (family) trips to destinations outside the city, such as trips to the forest and to visit relatives farther away. Some also alluded to the option value of the car, i.e. as a means available for possible use if contingencies demanded so (e.g. the sickness of a child). On the whole, however, the everyday juggling of home and work hinged on the bike in these interviewees’ households.

## **Conclusions and discussion**

In this chapter I have examined the linkages between gender and car use by focusing on dual-earner households with young children in Utrecht, the Netherlands and drawing on disparate strands of academic literature about women’s everyday mobility. The analysis suggests that situating those linkages in the social relations of the household and employment still makes sense, even for generally highly educated households with relatively egalitarian attitudes towards gender roles (SCP, 2006) are considered. With eight percent points (Table 1), the difference between men and women in the car’s

share in the modal split for commuting trips is not very large. However, important gender differences are masked by this simple statistic. Perhaps the most striking outcome of the quantitative aspects of the study is that differences in commuting mode are correlated more strongly with household responsibilities for mothers and with the employment situation for fathers. This suggests that the gendering of everyday activities and the traditional gender division of labour within households still matters with regards to transport mode use among highly educated households in the Netherlands.

However, the study has shown that car use was gendered in other ways than through activities among the households examined (cf. Law, 1999). On the basis of the women and transport literature, one would expect differences between fathers and mothers to constitute an important dimension of gender differences car use. However, analysis of the survey data suggests that the gendering of car access is not the key driver of the participating mothers' and fathers' transport mode use. Rather, drawing on the interview material, I would propose that, for the two-earner families examined, the gendering of transport mode manifests itself more clearly in, and results more directly from, dynamics in home-work arrangements and gendered identities and meanings. Not only is women's car use more subject to adaptation in response to changes in than men's, it is also tied more closely to cultural norms of being a 'good' parent, at least in certain parts of the Utrecht urban area. Suburban mothers in particular use the car to do what is best for their children (e.g. picking them up from the nursery on time and guaranteeing a smooth evening ritual) and for being a 'good' employee (e.g. working sufficiently long hours, capitalising on one's acquired skills and resources, and enjoying one's job). For them car use is instrumental in juggling not just activities but also identities and values and is often understood in terms of their caring role. They are embedded in, and interacting with, a distinctive culture – here understood as a style of doing things and associated values and meanings – of balancing home and work grounded in and producing car mobility.

It should nonetheless be emphasised that this gendering of car use is spatially specific: it differs between places and does not seem to be so widespread among family-households living in the city of Utrecht. In urban, higher-density neighbourhoods discourses of good parenting are much better compatible with, and indeed trigger, bicycle use for coordinating home and work. This suggests that the effect of the built environment on car use operates not only through an instrumentalist logic of the ease and convenience with which destinations can be used with different transport modes, as is commonly assumed in transport studies (e.g. Cervero, 2002; Boarnet, 2010). Built environment effects also work through the value-laden, gendered meanings that are being inscribed in and co-produced by cars and bikes.

Two final remarks are in order. First, caution is required with generalising my findings to other places or to other mothers and fathers – let alone women and men in general. Apart from the specificity of the study participants in terms of socioeconomic situation and residential location, the car use of the recruited mothers and fathers is profoundly contextual. It is a folding together of the complex interactions of a multiplicity of factors,

including but not limited to social relations within households, local and global cultures of mobility and parenting, the built environment and personal biographies (cf. Hanson, 2010; Schwanen and Páez, 2010). Both the factors involved and their interactions vary across space, time and households; outcomes may not be replicated elsewhere. Second, the merit of trying to bring together the two traditions of studying gender and car use lies in better grasping this contextuality. Combining those provides a richer and more nuanced understanding of the similarities and differences in the relationships between gender and car use across space, time and situation. More research along these lines is required to see how car use is gendered elsewhere and for men and women in other household types, classes, age and ethnic groups and places.

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Table 1: Main commuting mode by sex (survey participants only)

		Car driver	Bike	<i>Mothers</i> Train	Other mode <sup>a</sup>	Total
<i>Fathers</i>						
Car driver	N	192	60	20	25	297
	%	39.2%	12.2%	4.1%	5.1%	60.6%
Bike	N	35	61	15	6	117
	%	7.1%	12.4%	3.1%	1.2%	23.9%
Train	N	14	13	13	1.2%	22
	%	2.9%	2.7%	2.7%	0.8%	9.0%
Other mode <sup>a</sup>	N	16	10	2	4	32
	%	3.3%	2.0%	0.4%	0.8%	6.5%
Total	N	257	144	50	39	490
	%	52.4%	29.4%	10.2%	8.0%	100.0%

<sup>a</sup> This includes: car passenger, walking, bus/tram, different modes on trip to/from employment location and conducting paid work at home.

Table 2: Gendering of transport resources and activities in the domestic and paid labour spheres

	Mothers (n=490)		Fathers (n=490)	
	Percent	Mean	Percent	Mean
<i>Transport resources</i>				
Valid driver's licence for cars				
No	5.2%		1.7%	
Yes	94.8%		98.3%	
Perceived car availability				
No [=0]	10.7%		4.1%	
Yes, sometimes [=1]	10.7%		11.3%	
Yes, most of the times [=2]	18.1%		18.0%	
Yes, always [=3]	60.5%		66.6%	
<i>Household responsibilities</i>				
Share of weekly ferrying to childcare/school		52.5%		44.0%
Share of weekly ferrying from childcare/school		63.0%		32.4%
<i>Employment situation</i>				
Number of paid working days per week		3.4 days		4.5 days
Number of paid working hours per week <sup>a</sup>		28.0 hours		40.5 hours
Sovereignty regarding employment times				
Cannot determine own employment times	22.2%		14.5%	
Can partially determine own employment times	64.5%		64.4%	
Can fully determine own employment times	13.3%		21.1%	
Employment sector				
Business services	10.6%		8.4%	
Financial services	13.7%		13.5%	
Non-profit sector	12.7%		7.3%	
Government	10.0%		7.3%	
(Health)care	15.1%		6.9%	
Education	12.9%		8.6%	
Manufacturing/construction/ transport/ logistics	8.4%		21.2%	
IT/software dev. (fathers only)			11.0%	
Other	16.7%		15.7%	
Position at occupational ladder				
Directing no employees	74.2%		49.2%	
Directing 1-2 employees	7.8%		13.4%	
Directing 3-10 employees	12.5%		21.4%	
Directing >10 employees	5.5%		16.0%	
One way commuting time		29.8 min		35.1 min

<sup>a</sup> Calculated as difference between actual starting and ending time of paid labour per day of the week, summed across weekdays.



Table 3: Bivariate probit model of commuting mode (1=car driver; 0=other modes)

	Mothers (n=490)			Fathers (n=490)		
	Coefficient (B)	Standard error	p-value	Coefficient (B)	Standard error	p-value
<i>Transport resources</i>						
Number of cars [0-2]	0.490	0.186	0.009	1.198	0.231	0.000
Perceived car availability [0-3]	0.897	0.157	0.000	0.923	0.189	0.000
Population density around dwelling	-6.747	2.180	0.020	-2.004	2.196	0.362
<i>Household responsibilities</i>						
Share of weekly ferrying to childcare/school	0.030	0.214	0.157	0.010	0.236	0.664
Share of weekly ferrying from childcare/school	0.067	0.284	0.018	0.053	0.398	0.181
Closing time childcare provider						
6:00 PM	0.000			0.000		
6:15 PM	0.270	0.284	0.018	0.142	0.263	0.588
6:30 PM	0.510	0.243	0.036	-0.188	0.311	0.545
7:00 PM	1.001	0.752	0.183	0.124	0.429	0.772
Not applicable	0.399	0.337	0.238	0.097	0.261	0.710
<i>Employment situation</i>						
Number of paid working days per week						
Variable	0.053	0.344	0.877	-0.677	0.386	0.079
1-2 days (mothers only)	0.314	0.417	0.452			
3 days (mothers only)	0.103	0.234	0.658			
4-5 days (mothers only)	0.000					
3-4 days (fathers only)				-0.331	0.231	0.152
5-6 days (father only)				0.000		
<i>Employment sector</i>						
Business services	-0.262	0.353	0.458	-0.274	0.403	0.497
Financial services	-0.057	0.338	0.867	-0.017	0.374	0.964
Non-profit sector	-0.298	0.369	0.412	-0.404	0.442	0.361
Government	-0.748	0.333	0.025	-0.432	0.367	0.240
(Health)care	-0.092	0.341	0.788	-0.819	0.322	0.011
Education	-0.568	0.393	0.148	-0.544	0.368	0.140
Manufacturing/construction/transport/ logistics	-0.156	0.291	0.593	-0.024	0.228	0.292
IT/software dev. (fathers only)				1.164	0.536	0.030
Other	0.000			0.000		
One-way commuting time	0.0085	0.0045	0.057	0.0088	0.0042	0.036
Population density around employment location	-7.800	2.517	0.002	-9.494	3.341	0.005
Constant	-3.026	0.574	0.000	-3.324	0.546	0.000
Correlation of error terms for mothers and fathers	0.456	0.150	0.030			

Model fit: Log-Likelihood (constant only)=-664,8 Log-Likelihood (convergence)=-345.3,  $\chi^2=598.9$ , McFadden  $\rho^2=0.481$