

## Social exclusion, vulnerable groups and driving forces : towards a social research based policy on car mobility

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# Social exclusion, vulnerable groups and driving forces: Towards a social research based policy on car mobility



Hans Jeekel\*

Technical University Eindhoven, Group Technology, Innovation, Society, Faculty of Industrial Engineering and Innovation Sciences, Den Dolech 2, Postbus 513, 5612 AZ Eindhoven, 5600 MB Eindhoven, Netherlands

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## ABSTRACT

Social research was, until recently, not very important in the transport and mobility domain. There was a bias towards technical studies, engineering studies and towards transport economics. Social science was essentially a fringe activity; psychology was used in traffic management, under the name “human factors”, and human geography focussed on the relationship between the characteristics of urban and rural space and the production of mobility. Sociological studies, cultural studies and governance studies were scarce in the transport and mobility domains.

This state of affairs changed the last 15 years. The relations between social research and transport and mobility are intensified. In the scientific world there is now an ongoing production of studies that relate social, cultural and governance perspectives to transport and mobility. There is a stock of literature on social exclusion or inclusion in transport, on travel behaviour and on driving forces for car mobility. But is the body of knowledge that did arise in these 15 years used in the design and evaluation of transport and mobility policies? It looks like this research is first and foremost an activity within the boundaries of academia. The way in which results and insights of social research are included in the design, definition and evaluation of car mobility policies is the central theme in this paper. The paper is written from a policy-maker's perspective by someone who has some 20 years of experience in the relationships between transport policies in practice and transport research results.

Three domains and ten themes give an overview of the field. A summary of results of social research on car mobility shows interesting results. However, not many of these results are included in the design of national policies on car mobility. We show the state of the art and try to identify and analyse reasons for the rather difficult dissemination of results and insights from social research into national car mobility policies, with a focus on more socially inclusive and equitable policy outcomes in mind.

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## 1. Social research on car mobility: introduction

Car mobility and social science had in the past a rather weak relationship. When car mobility was studied this was mostly done from a traffic flow perspective, or from a “predict and provide” – perspective related to the provision of infrastructure. A third line of research was on traffic safety. Studies on choices related to car mobility, on the experiences of car users or on the role of car mobility in the functioning of societies were scarce. There were a few early publications (e.g. Schneider, 1971; Marsh and Collett, *Driving passion; the Psychology of the Car*, 1986; Sachs; *For the*

*love of the automobile*, 1992) but development of social research themes on car mobility seemed rather slow. A notable exception was the work of Hillman (1973) and Hillman et al. (1976). Hillman worked in his books consequently from a users perspective on mobility, and had his influence in transport policy in the U.K. in the pre-Thatcher period.

The state of art changed 15 years ago. There is now an ongoing production on articles and books on social and cultural aspects of car mobility. An important focus has been on social exclusion, and on vulnerable groups. It would be interesting to study why and how this acceleration in social studies related to car mobility did arise. In this article the spectrum of social research on car mobility is introduced. The results of research are summarised in a generic way, and the focus is on the implementation of these results in the national policies on car mobility.

\* Tel.: +31 651551561.

E-mail addresses: [hansjeekel@hotmail.com](mailto:hansjeekel@hotmail.com), [J.F.Jeekel@tue.nl](mailto:J.F.Jeekel@tue.nl)

## 2. Three domains of research related to car mobility

For this purpose systematisation of the social research on car mobility is necessary. Three domains will be presented. These domains were chosen in an intuitive way by the author. It was also necessary to set some boundaries. Included were articles and books from the social sciences. This creates especially in the second domain a split, as there is also a vast literature based on economics and on engineering disciplines. The first and last domain are more inherently of a social science nature.

The first domain consists of studies that focus on analysing social equity and inequalities in the transport domain. The key word here is inequality, of experiences and perspectives of different social groups related to car mobility. The second domain consists of studies that focus on understanding car mobility patterns and choices. Understanding is the key word; researchers try to understand the patterns in car mobility, and the choices made by car users. And the last domain consists of studies that reflect on future perspectives for car mobility. This is the domain of scenario builders, and of governance studies.

What type of results did the studies introduced in the three domains arrive at? What can be noted as the state of the art of the perspectives from the social sciences on car mobility? Such a question is easy to ask, but difficult to answer. Most scientists are rather reluctant to present a broad overview of results. They fear to overstress their academic power. And indeed; you need to overcome some barriers to present such a broad overview of results. On the other hand, such a broad inventory is exactly where policymakers can relate to for their work on defining, refining and designing policies on car mobility. Reluctance of the scientific communities to present generic and easily readable overviews of results of social studies can lead to a lack of knowledge of important results and ideas of social research in the worlds of the policy makers.

Finally it seems appropriate to mention that the author could not strive for comprehensiveness. Most relevant literature has been included, but certainly not all the relevant literature, as that seems a rather impossible task within the scope of this article.

## 3. Analysing social equity and inequality in transport

This domain is at the core when discussing social issues in car mobility. It is a vast growing domain, and especially in this domain a bias on studies from the Anglo Saxon world can be seen. Studies from the United Kingdom and Australia dominate the scene. France has its own tradition of equity and inequality studies. This domain is not frequently visited by researchers in more complete Welfare States like Germany, the Netherlands or the Scandinavian countries. It would be interesting to analyse this state of the art.

Three main themes can be identified.

The first theme is on specific groups in their relation to car mobility.

How do different groups approach car mobility, and which specific patterns and problems can be seen? Here we have studies on the specifics of *carless households* (Dittrich-Wesbuer and Freudenau, 2002; Jeekel, 2011, 2013; Sandqvist and Kristrom, 2001; Zumkeller et al., 2005). We have studies on the mobility patterns and problems of the *poorer segments* of western societies (Coutard et al., 2002; Grieco and Raje, 2004; Kim, 2002; Runge, 2005; Taylor et al., 2009), we have many studies about the mobility of *children* (Bachiri, 2006; Bachiri et al., 2008; Davidson et al., 2008; Fotel and Thomsen, 2004; Funk, 2009; Gough et al., 2001; de Groof, 2004; Hume et al., 2004; Lewis et al., 2006; Limbourg, 2005; Limbourg and Rieter, 2003; Lyons and Swinbank, 1998; Mackett et al., 2002; McDonald, 2005; Nelson et al., 2008; Paskins, 2004; van der Ploeg et al., 2008; Ridgewell et al., 2005; Risotto and

Tonucci, 1999; Sandqvist, 2002; de Singly, 2002; Sjolie and Thuen, 2002; Tillberg Mattson, 2002; Tranter and Malone, 2003; Tully, 2000, 2003; Turbin et al., 2002; Weston, 2005; Zwerts and Werts, 2003), on the mobility of *single parent households* (Chlond and Ottman, 2007; Titheridge, 2008), *elderly* (Davey, 2004; Gorti, 2004; Izumiya et al., 2007; Rosenbloom and Stahl, 2002; Scheiner, 2006; Tacken, w.y.), *students* (Choplin and Delage, 2011), *disabled* (Bakker and van Hal, 2007; Dejoux and Armoogum, 2010), and of *households living far from their work* (Dodson and Sipe, 2006; Halleux et al., 2002; Motte-Baumvol, 2007; Noack, 2010; Ortar, 2008; Rouge and Bonnin, 2009).

Social exclusion in transport is an important research theme. Carless households – mostly singles, elder women, disabled, single parent families, more frequent in urban areas than in rural areas – travel far less kilometres, and do sometimes have problems reaching services and locations without the help of others. Many poorer households have cars, but their mobility comes at a price; a great part of their household income goes to car mobility. Elderly people, especially men, fear the moment they have to stop driving. Elderly people then do only ask lifts for health care, but not for visiting friends, so their world shrinks without cars. Due to heavy traffic, to longer distances to school and to a general risk aversion in modern societies children nowadays have far fewer “free mobility” than in the past. They are very often escorted by their parents, who are anxious on what can happen. Children do not learn to become “streetwise” in all its aspects. From research is rather clear that *car mobility for vulnerable groups is an area for potential anxiety, because opportunities normally available for car users can be missed*. We still miss good data on the dimension of these missed opportunities.

The second theme is on accessibility of services and opportunities.

Are there problems in reaching important services like work or health care? (Bowden and Moseley, 2006; Kawabata and Shen, 2005; Larsen and Gilliland, 2008; Roberto, 2008; Sanchez et al., 2003; Stoll, 2005; Todman, 2003; Wright, 2008; Williams et al., 2001). And which persons and which households face these problems in which circumstances? (Lucas et al., 2001; Miller, 2004; Smith et al., 2006). What is the magnitude of social exclusion via transport? (Carson, 2003; Cass et al., 2003; Church et al., 2000; Currie et al., 2009; FIA Foundation, 2004; Gentili, 2003; Hine and Mitchell, 2001, 2003; Imanashi, 2003; Kemming and Borbach, 2003; Lucas, 2003; Lyons, 2003a,b,c; Orfeuill, 2004a,b; Social Exclusion Unit, 2003; Solomon and Titheridge, 2009). And are accessibility problems related to the characteristics of the afflicted households (Morris, 2006; Raje, 2003; Raje et al., 2004), or are they integral part of the development of modern western societies (Dowling and Lyth, 2003; Grieco, 2003; Sanchez and Brenman, 2007)?

Accessibility is an important theme in car mobility policies. It is mostly operationalised as “the time to reach destinations”. Social research studies the real and manifest accessibility problems. These are the *problems that poorer and carless households can face in reaching work locations, health services and cheaper shops*. As Orfeuill (2004a,b) states “basically the location of residences and amenities is more and more directed by the upper and middle class behaviour, for whom car use is not a problem”. A Spatial Mismatch seems to exist, between the housing locations and the work locations for poorer and less educated households. This problem becomes greater because these households mostly have smaller travel horizons, than their middle class counterparts. Services with rather easy access can than be perceived as unreachable.

The third theme is on social cohesion and car mobility.

Here broader studies dominate. There are studies on hypermobility (Adams, 1999, 2005; Ascher, 2006; Lipovetsky and Charles, 2004; Sager, 2005; Schokker and Peters, 2006), on the mobility in

acceleration society (Rosa, 2005, 2012; Wajcman, 2008) and on the role of the car in creating cohesion or in eliminating cohesion in modern societies (Dodson, 2003; Donaghy et al., 2005; Nuvolati, 2003; Ohnmacht et al., 2009; Orfeuill, 2010). And there are studies on ways in which IT-services develop *vis a vis* car mobility (Campbell and Park, 2008; Ling and Haddon, 2001; Manderscheid, 2012; Thulin and Vilhelmson, 2007; van Wee and Chorus, 2009).

Modern Western societies tend to hypermobility. Households are in constant flux, and invest in mobility, on labour markets, rather than living grounded lives in set locations. Social cohesion on a smaller geographical scale is diminishing. The question is still open whether cars facilitate the possibility to reach social cohesion in greater geographical areas, in networks. Households now tend to “community light”, identifying with their neighbours in a way characterised by a certain distance in combination with easy, flexible and shallow contacts (Hortulanus and Machielse, 2001). Their friends live further away. Being on the road means being a focus point for information. Journeys are not fixed, can be changed through new and real time information with IT-services. *Car use diminished the need to invest in the small radius near home, and created a possibility to invest in networks on greater scales.*

As a summary, social research brings in;

- Car mobility is for vulnerable groups an area of potential anxiety, because opportunities related to car use and car locations can be missed.
- Poorer and carless households can be faced with real accessibility problems in reaching work, health services and cheap shopping.
- Car use diminished the need to invest in the areas around your home, and created a possibility to invest in networks on greater scales.

#### 4. Understanding car mobility patterns and choices

This is a vast domain. What is studied mostly in this domain? The domain will be ordered into five important interrelated themes:

The first theme is on *mobility choices*.

Questions here are; why do travellers use a specific mode, is their choice behaviour constant or does it change? And what are variables for change? This theme has been studied rather often. We have studies on choice behaviour in general (see Bamberg et al., 2003; Exel and van en Rietveld, 2009; Garling and Loukopoulus, 2005; Stauffacher et al., 2005; Stradling, 2002a,b), on the role of habit in travel choices (Aarts and Dijksterhuis, 2000; Ajzen, 2002; Harms, 2003), on experiments offering other travel possibilities (Fuji and Kitamura, 2003; Thorgersen and Moller, 2007) on tipping points for change of travel behaviour (see Gladwell, 2000; Klockner, 2005), and on specific likes or dislikes of travel modes (see Burbridge et al., 2005).

On mobility choices we need to stress the importance of habit as an explanation for choosing a travel mode for a specific trip. When the trip was made earlier with success by a certain mode, the chance is great that the same trip will next time be made with that same mode. Most mobilists can and will change their habits preferably at tipping points. Most important tipping points are relocations, getting the driving license, going to a new school or work location, starting a new job, or starting a new education. These *tipping points* can be seen as “windows of opportunity” for a change of transport modes.

The second theme is on the cultural and psychological driving forces behind car mobility.

What is behind the popularity of the car? Here we have studies on car culture? (see Beckmann, 2001; Dahl, 2005; Lucas et al., 2011; Redshaw, 2004), on the psychology of car users (see Balkmar, 2007; Dant, 2004; Diekstra and Kroon, 2003; Gatersleben, 2007;

Gotz et al., 2002; Hagman, 2001; Sheller, 2003; Stradling, 2002a,b; Schwanen and Lucas, 2011; VanderBilt, 2008), on emerging new patterns of car mobility like the SUV (Aronczyk, 2008), or working in your car (Laurier, 2004; Lyons, 2003a,b,c). And we have studies on freedom (Carriline and Longhurst, 2002, on the fun of car use (Borden, 2005; Ory and Mokhtarian, 2005; Southerton et al., 2001; Webber, 1992), on cars as elements of self-actualisation (Dant, 2004; Laurier, 2005; Redshaw, 2008), and on frustration related to car use (Conley and Tigar McLaren, 2008; Moeckli and Lee, 2005; Maxwell, 2001).

On the cultural and social driving forces it has become clear that car use means far more for many people than just using a technical instrument to make a trip from A to B. Many people love their cars, for their looks, and for what cars can offer in terms of *feeling strong, free, powerful or skilled*. Being able to drive a nice car is for many people an expression of their success in life. Cars are important in self-actualisation, especially for men. Measures and procedures that hinder or even obstruct car use can create anger and sepsis. Cars connect for most people far more to freedom than public transport. Restricting freedom is difficult.

The third theme consists of studies on convenience, comfort, car consumption and related health problems.

Here we have studies on a central argument for car mobility, car mobility considered to be more convenient than other modes. What does this convenience mean? (Carrigan and Szmigin, 2004; Shove, 2002a,b), and which effects – like for example obesity (Ewing et al., 2003; Freund and Martin, 2008; Sturm, 2005; Woodcock and Aldred, 2008), traffic unsafety (Moeckli and Lee, 2005; Packer, 2008) or ethical questions (Bergman and Sager, 2008; Creswell, 2008; Martens, 2006; Mignot, 2004; Wee and van, 2012) – seem to be related to ubiquitous driving?

The most mentioned motive for car use is convenience. Cars are convenient because they can make the whole trip at once, seamless. Cars are comfortable because you are able to eliminate weather influences. And they are convenient with luggage.

But there is probably also a relation between frequent car use and obesity, as cars diminish the need to move your body for transport. Related to car mobility in western societies is a *form of ambivalence*, for at least a rather great part of car users. These users consider cars the best mode of transport, but are aware of the disadvantages of car use. Driving is useful, but there is the anxiety on the traffic safety of children. Driving is needed, but there are expressions of road rage. Driving is practical, but there is the stress related to driving in dense traffic. Driving for fun is accepted, but there are problems related to the environment and to sustainability. And it is interesting that there is now some notice of ethical questions related to frequent car use.

The fourth theme focusses on time use, time scarcity and car mobility.

In recent years many researchers have shown the intricate links between family life (Bianchi, 2006; Genre-Grandpierre and Josselin, 2008; Giger, 2008; Jarvis, 2005; Kaufmann and Flamm, 2002; Rammler, 2003; Vilhelmson, 2005, 2007; Warde et al., 2002; Schwanen, 2008), time consumption (Goddard et al., 2007; Heine and Mantz, 2000), and stress and car use (Jarvis, 2004; Moens, 2004; Shove, 2002b; Stutzer and Frey, 2004; Schwanen, 2004, 2007a).

The car seems to be a great helper in reaching the necessary flexibility to live a modern and fruitful life, as noted in studies on the role of women (Craig, 2005; Dobbs, 2006, 2007; Heine and Mantz, 1999; Skinner, 2003; Schwanen, 2007b) and on time scarcity (Gershuny, 2005; Hjortol, 2005; Skinner, 2005; Southerton, 2003).

A very important driving force for frequent car use is the urge for flexibility in our modern western societies. Households are expected to be flexible, and to be able to organise difficult



arrangements of combined activities in set time frames. Especially women in family households with children below 15 years have an important extra job on scheduling and organising different activities. In our societies with its spreading out of locations for the different activities, people that need to combine work, household activities, shopping and escorting are, with the words of Soron (2009) “driven to drive”. The phenomenon of “rushing around” with its related stress and anxieties is well researched. Time, time arrangements, and their pressures on car mobilities are now well studied, and from different perspectives.

And the last theme is on studies looking from a broader perspective.

In these studies car mobility is placed in the development of societies as they unfold (Urry, 2004, 2007). Here studies on the relationships between characteristics of modern societies like the urge for flexibility (Larsen et al., 2008; Urry, 2000a,b), the spacing and timing of societal functions (Augé, 1995; Larsen et al., 2006a,b; Pernack, 2005; Rammler, 2008), the individualisation trends (Heine and Mantz, 2000; Heine et al., 2001; Urry, 2000a,b, 2003), and the growth in car use and car dependence (Brindle, 2003; Jeekel, 2011, 2013; Stradling, 2002a,b, 2007) dominate.

Car mobility, and its growth in last decades in western societies, has an intricate relationship with the spacing and timing in society. Society asks of its members permanent flexibility, is constantly on the move, with streams of people, information and goods following criss-cross patterns. Networks of friends, family and acquaintances, once situated on a rather small scale, have now spread out in greater geographical areas. Only the car can overcome the distances to be travelled relatively easy, but this possibility creates its own wishes. We are *growing towards “systems of automobility” that steer further development of societies*. For example; highways are becoming important spots of life for modern societies, with housing, work and leisure developing nearer and faster along highways. People can feel free in their cars, but the essence of growing car dependence is that people are also obliged to take their cars to reach their destinations. The relation to sustainability, and also to future scarcities of fossil fuels seems problematic.

As a summary; social research brings in elements as;

- Tipping points are the moments on which change of transport modes seems best possible.
- Cars are for many of their users related to freedom, feeling strong, powerful and skilled.
- Car mobility has as a side effect a form of ambivalence for many car users.
- The need for ‘rushing around’, created by the societal arrangements around time, creates stress and anxiety.
- And our societies create “systems of automobility” that steer new developments.

## 5. Reflecting on perspectives for car mobility in the future

Car mobility is now in Western societies by far the most important form of mobility, and it looks as if car mobility is here to stay. However, we will probably face in the longer run, problems with the scarcity of fossil fuels, and problems related to climate change, with the only still growing CO<sub>2</sub> emissions coming from transport. What will the future of car mobility look like in our car dependent societies? Here we see social science contributions in two dominating themes.

The first theme is the creation of scenario’s.

Social scientists are now joining in scenario studies (e.g. Ackerman and Hojer, 2005; Crozet, 2008; Garling et al., 2002; Hickman and Banister, 2005, 2006; Lopez-Ruiz and Crozet, 2010; Lyons et al., 2000; Lyons and Urry, 2006; Moriarty and Honnery, 2009; Sperling, 2010; Sperling and Gordon, 2008; Sperling and

Clausen, 2003). And they sometimes present broad visions on the development of car mobility (Becker et al., 2009; Freudendal-Pedersen, 2008; Giddens, 2008a,b; Gorham, 2002; Hickmann and Schwanen, 2010; Raad, 1998; Rammler, 2010; Sperling, 2010; Staley, 2009; Vogt, 2003).

What will be the future of car mobility?

Car mobility has been a success story, and can possibly be continued when innovations in technology will be able to create real low emission cars, with smart onboard IT-services. However, on a world scale we will face difficulties, because it is questionable whether expected growth rates on car mobility will be compatible with objectives of sustainability and fighting climate change. *The future on cars is not clear, time schedules on changing car technologies will probably be crucial*. There is at this moment still no winning technology for substantial new forms of car mobility, that can meet to sustainability objectives and that have no dependence on fossil fuels.

The second theme is in the governance of the mobility systems.

How are mobility systems governed, and how can they be governed in the future? What is, and what should be the role of governments, automobile industries, car users, in preparing a sustainable systems of mobility (Healey, 2007; Holden, 2007; Innes and Booher, 2003, 2010; Marletto, 2010; Geels et al., 2012). A central theme in many of these studies is whether we are facing with our car dependence forms of path dependence (Aigle et al., 2007; Aigle and Marz, 2007) and even lock-in in the future (Huttenmoser, 2005; Soron, 2009; Teisman et al., 2009; Vilhelmsson, 2007).

At the same time we are becoming more car dependent (Brindle, 2003; Jeekel, 2011; RAC, 2009). Car dependence is a fact of life, and remains a challenge. Becoming too dependent on one transport mode that will face an unknown future presents societal risks and vulnerabilities. Perceived uncertainties create reluctance on the side of investors in new technologies.

This brings in the question of governance. How is the “system of automobility” governed? Do the stakeholders have the same agenda? Are they connected in networks of change? We now know from governance studies that governing complex systems is never a linear activity, but needs a focus on opportunities, a perspective on co-evolution of practices and perspectives, and a multi-centred, decentralised design of governance. *Working on implementing policies the way it was done will create lock-in situations and path dependence*. We need to envision different futures and to prepare robust pathways of change.

To summarise, two elements;

- The future on cars is unclear, and time schedules on changing car technologies will be crucial.
- Path dependence and lock in situations can arise when we remain implementing policies the way we did.

## 6. Results of social research and national policies on car mobility

In the last paragraph a summary in ten statements arising from social research on car mobility was developed. This summary can be seen as a product for which only the author can be made responsible. It is his summary of the interesting stories and narratives that social scientists are telling about car mobility.

But are these stories used in the definition, design and evaluation of policies on car mobility?

We will look at the way these ten stories are included in car mobility policies, and we will concentrate at policies on the national level.

On this national level social inclusion and social exclusion themes are important, and they form in many political domains

(like health, or education) a core of political deliberation. Who profits from governments budgets, and which groups and households are paying the price? It looks like that in relation to car mobility these aspects are not on the forefront of attention in national policies.

But what is the state of art on national car mobility policies in the western world? The answer is rather problematic. Although many researchers relate to policies there is no overview of national policies on car use available. Such an overview has to be constructed out of the presented policies of respective governments. We selected a number of countries (Sweden, Norway, Denmark, England, France, Germany, the Netherlands, Canada, New Zealand and Australia) and looked via the websites of the national and regional (Germany and Australia) ministries at their policies on car mobility. It was sometimes difficult to clarify the formal status of the mentioned policies. The state of the art seems to be that no country has a comprehensive policy specific on car mobility published.

We will present a closer look at the ten selected elements, the conclusions for the three domains, and will look how these elements evolve into national policies. Here again, a generic view will be presented. Conclusions are based on my experience, related to many years of international activity in policy circles, and on elaboration of the different policies found. Information and the overview of policies are found in the Addendum.

In most countries policies on car mobility are found in four elements;

- An infrastructure investment plan
- A traffic safety strategy
- A strategy on mobility and the environment
- And some specific policies, mostly on urban mobility (UK), on the relation between mobility and spatial planning (Netherlands), or on accessibility for the disabled (for example France, Australia, New Zealand).

Take into account that policies to be found from this inventory are the policies stated and not the policies as implemented. The focus in this article is on whether social themes are mentioned in national policies, not whether implementation did take place.

Also important to note is the role of lower governments on the themes discussed here. These governments have important extra tasks in Australia, Canada and Germany. We looked in a number of state policies in these countries on themes discussed here, and found a few. However; some themes should start at the national level to be effective. This seems to hold for policies on non-car households, on pricing, and on the focus on time, time scarcity on diminishing stress.

#### *6.1. The societal focus on car mobility is for vulnerable groups an area of potential anxiety, while opportunities related to car use and car locations can be missed*

Households without cars mostly belong to vulnerable groups in modern western societies. There is a bias towards lower incomes, disabled, elderly, single parent households. Car less households travel less frequent and travel less kilometres (Jeekel, 2011). Households without cars probably miss opportunities in car dependent societies. The magnitude is unknown, but it is questionable whether national policy makers would like to know this magnitude. Here we seem to have a non-elaborated problem. Vulnerable households probably just accommodate towards what is in their spectrum of choices. The same holds true for poorer households with cars. They can reach all wished activities and destinations, but this creates high costs in their household budgets. In some countries national policy makers developed some form of

policy on these problems; the Social Exclusion Unit in the United Kingdom (2003) was mentioned, there is an obligation to include accessibility planning in the local transport plans in the U.K., there is a policy on accessibility for the disabled in a few countries, and there are “mobility on demand” – schemes in the Netherlands (Kennisinstituut voor mobiliteitsbeleid, 2009). However, still in many countries national policy makers remain silent in answering on these results of social research.

#### *6.2. Poorer and car less households can be faced with problems reaching work, health services and cheap shops*

It is sometimes difficult or impossible for poorer and car less households to reach work, shops or services. There is no transport available, and no car in the household, or there is a price to be paid for transport, that is considered too high by households. In all these circumstances a number of households can be excluded from possibilities open for most households; aspects of social inclusion or exclusion are important here. In the United States in the debate on the Spatial Mismatch the idea of transport subsidies for poorer households, compared with housing subsidies, was introduced. This was never materialised in national policies. In many countries national policy makers have introduced forms of “accessibility policies”, but these policies often focus on accessibility operationalised by travel times and reliability of travel times, and not on problems of access for vulnerable groups.

#### *6.3. Car use diminishes the need to invest in areas near your home, and creates the possibility to invest in networks on greater scales*

Policies for vulnerable groups are often territorial based. Neighbourhoods are still seen as important focus areas for government policies. However, from social research doubts can be formulated on the wisdom of these type of policies. Neighbourhoods often miss social cohesion, and are often no longer living entities. Households live their lives starting and returning to their neighbourhood, but are realising activities and having experiences in other locations, with people that are inhabitants of other neighbourhoods. Cars allow people to see their neighbourhood just as the location where they sleep, and not as a location to invest in. Facilitating already existing support networks for vulnerable persons would perhaps be a wiser starting position for policy.

#### *6.4. Tipping points are the moments on which change of transport modes seems best possible*

Many national policies in modern western countries contain statements of reaching an other modal split; more slow modes, more public transport, less car use. The best moment to change travel modes is at tipping points. It is however difficult for national policies to create instruments to influence car drivers at these moments. Civil servants have no understanding when and where these tipping points arise in the individual households, and we would like to keep it this way. Probably mobility management can be helpful. In mobility management governments work jointly with employers and school boards on creating alternative and practical solutions for mobility. Employers, school boards, but also driving schools are in interaction with car drivers at tipping points. They can work on interventions to realise the full potential on new decisions on travel modes. The impression is that this route is not explored fully.

#### *6.5. Cars are for many of their users related to freedom, feeling strong, powerful and skilled*

This statement is known by policy makers but seems; to create more anxiety than energy policy debates. Policy makers seem to be

afraid of the reactions of many car users. Policies that try to set boundaries on car use are not introduced, or are introduced with so much hesitation that failure is near. Two roads are mostly not taken. The first is to search behind this statement; why have so many car users these feelings related to their cars? It would be possible to start societal dialogues on this theme. Probably a part of the explanation is related to the idea that in regulated societies feeling completely free and authentic is rather difficult (Diekstra and Kroon, 2003; Redshaw, 2004). Moments in your car can create these feelings, and are thus cherished. But the car is here just an instrument for something that is greater and more important to discuss.

And the second road to take is to use these feelings in designing policies. Try to develop car mobility policies that use these feelings as positive energies.

#### 6.6. Car mobility has as a side effect a form of ambivalence for many car users

Discussions on frequent car use with car users mostly reach a point where they acknowledge that their frequent car use creates problems, even for themselves, or for their families and friends (obesity, stress, traffic unsafety). But mostly they see no solution; they often conclude that in their daily life car use is a necessity. How do national policy makers use this ambivalence? The basic answer is probably; they do not use it, except in the area of traffic safety, where they create campaigns and instruments to make traffic safer. The situation that car users feel that they have no choice but to drive is not elaborated by policy makers. This circumstance goes to the heart of the arrangements in modern western societies. We expect people to be flexible, to have the possibility to reach all sorts of locations in a fast way, to arrange for themselves the chances in the world that has spread out also through location decisions of governments. In other words; policy makers more or less expect hypermobility of their citizens. There seems to be no reflexivity on what policy makers, but also employers, basically ask from citizens when it comes to organising mobility.

#### 6.7. Rushing around, created by societal arrangements around time, creates stress and anxiety

Modern western societies use clock time to organise life. It is expected of modern citizens to be able to reach all activities and destinations at the settled clock times. Modern citizens have to combine on a day different specific activities – work, shopping, escorting, health aid – that all have opening hours and specific time schedules. “Scheduling your day” is now normal behaviour in modern western households. Implementing daily schedules needs flexible transport modes, as sometimes greater distances have to be overcome. Cars are great helpers in these implementation processes. Modern societies create feelings of time scarcity, that can lead to stress, and anxiety – do I reach my destinations at the settled time? Governments mostly do not acknowledge the importance of time, time scarcity and time pressure as a reason for frequent car use. Time use and time scarcity are mostly seen as just individual problems, as something for individual households. However, Jarvis (2004) explains convincingly that time scarcity is also a consequence of government policies (e.g. opening and closing times of services) and of choices of employers.

#### 6.8. Our societies create “systems of automobility” that can steer new developments

Modern western societies develop towards their highways. Along highways we now have business centres, leisure activities,

shopping malls, and housing estates, and a great part of all available jobs. Highway locations did mostly not arise from spatial planning, but from a lack of spatial planning, or from a lack of active enforcement of objectives of that planning. In most countries highway locations just happened, mostly with the support of local governments (Jeekel, 2011, 373, 2013, 22). In some countries (Netherlands, France) national policies now notify the unsustainability of most highway locations that often can only be reached by car. First policies on setting boundaries on highway location are being prepared. But “systems of automobility” are also broader. They consist of networks of petrol stations, road authorities, driving schools, automobile industries, service providers, garage holders, car dealers, all earning incomes and returns from maintenance and growth of car mobility. It is not in the short-term interest of these players to formulate policies that put boundaries on car mobility. Most policy makers are not active intervening in these networks.

#### 6.9. The future on cars is unclear, and time schedules on changing car technologies will be crucial

Looking at policies related to climate change, looking at generic sustainability policies and looking at the expectations on the supply of fossil fuels it seems clear that cars will have to change in a more sustainable direction, whether this will be hybrids, electrical cars, cars on hydrogen, or cars that function as computers on wheels with the newest light technologies. Changing the car will need investments of governments, car buyers and the automotive industry. In EU policy, and in national policies there is a focus on this theme. However, as there are many uncertainties, and as there is a lot of strategic behaviour of all stakeholders no strong and clear national policies are already formulated. Most policies are subsidy policies, creating some fiscal free zones for the purchase of more sustainable cars. Policies still look rather minor, compared to the magnitude of the task in front of us.

#### 6.10. Path dependence and lock-in situations can arise when we remain implementing policies the way we did

Most national policy makers work on policies that basically facilitate car mobility. Although they sometimes will acknowledge that car use will have to change in the future, they still notice so few “seeds of change” that for them keeping a fruitful facilitating relationship to the car users and to the “system of automobility” is still daily practice. The problem with a reluctance in defining and implementing sustainable policies on car mobility these days is that the dominant system of automobility will invest too little in change, and will remain on routes taken in the past. The problem of path dependence and lock-in can then arise, summarised by Canzler and Marz (1996, 101). They called the situation on car mobility “stagnation” and explained; “the stagnation is innovative, in so far all knowledge will be mobilised for staying in the already existing small area that has always been used”.

### 7. Inclusion of results from social research into national policies on car mobilities: possible reasons for the state of the art

As seen in the last paragraph the results of social research are not very often included in the definition and design of national policies on car mobility, this with the great exception of policies on road and traffic safety (in the same line; Stanley and Mulley, 2010, 276). This asks for further analysis, but some preliminary explanations will be offered here. These reasons should be seen as hypotheses.

A first reason can be that results ask for interventions outside what is defined as the domain for national policies. This could be seen on influencing choices for travel modes.

A second reason can be that national policy makers consider some results so difficult to implement that they are looking at lower authorities, nearer to the daily lives of households, to develop policies. This is probably the case with the accessibility problems of vulnerable groups.

A third reason can be that national policymakers in most western countries consider lifestyle oriented policies a “no go area”. Normative judgements on the way households live their lives, or realise activities are in the mobility field only accepted in traffic safety policies. A comprehensive policy on car mobility would put questions like “why this demand for car mobility?” and “are we going to accommodate all car mobility?” at its core. As the reaction of a big part of the car users is feared, most national policies try in their design and wording to be as neutral as possible. That this mostly means a bias towards the status quo is taken for granted.

A fourth reason can be the existence of a dominant paradigm in the field of car mobility. This dominant paradigm can still be described as “predict and provide” (Vigar, 2001; Hickman and Banister, 2006; Paterson, 2006), but in its most clever form. Demand for car use is predicted, and capacity and infrastructure is provided. Providing capacity is now realised in a clever way, not only by creating new infrastructure, but also via traffic management and mobility management. The focus on “predict and provide” finds its rationale partly in the role of business communities, always asking for more and better infrastructure, as an important asset for facilitating the creation of extra economic growth.

A fifth reason can be a reluctance to create policies on time and time scarcity. Time scarcity and related feelings of stress and burn out (SCP, 2006, 2010) are related to the urge to be efficient and flexible. Flexibility and resilience are at the core of the economic policies of almost all western countries. Without permanence in raising standards of efficiency and flexibility most policymakers fear that their countries cannot keep up with faster growing economies in the world. Time efficiency and time use are seen as central in the functioning of modern societies.

A sixth reason can be that most national policymakers frame questions of social exclusion via transport as questions of the poorer and disadvantaged groups of modern western societies. This probably explains why so little attention is paid to the problems of the vulnerable groups in the welfare states of North Western Europe. Policymakers here are faced with already a broad spectrum of policy measures oriented towards these poorer and disadvantaged groups, and are reluctant in introducing extra measures.

A seventh reason has to do with pricing. The idea of pricing car mobility can be seen as an “intervening opportunity”. Realising pricing at the national level costs so much energy, that no energy is left for other elements of renewal of national policies on car mobility. And protagonists of pricing can use the argument that pricing mobility will create a new paradigm, through which many results of social research will be included. Their idea is that the scene for car mobility will change, and that in this process of change choices of car users and relative positions of stakeholders will also change, thus creating a more sustainable and equitable mobility pattern.

And a last reason has to do with vision. National policymakers notice that the combination of scarcity of fossil fuels, strong targets on reduction of CO<sub>2</sub>, and slow introduction of low emission vehicles can, certainly in relation with lower household budgets through the economic crisis, lead to another position for car mobility. However, they see no need to present broad visions on

possible future car mobility. They put their cards on new technologies, on IT in cars, on IT and virtual mobility as a substitute for car mobility, on new lifestyles emerging. In this way they accept the possibility of further path dependence and lock-in in the mobility system. Their position relates to the common wisdom of many civil servants that “managing and mitigating problems” is a good substitute for really solving problems!

## 8. Conclusion: towards a package for social research oriented policies on car mobility

It looks like there are important reasons for not including many results of social research in the policies on car mobility. Results of social research are often difficult wisdom. It looks like we still have a long road to travel. But how could a professional package on social aspects in national car policies look like?

It would, in my view, consist of seven interrelated elements;

1. A policy for non-car households; can they reach all locations?
2. A policy for poorer households; can they finance all their mobility needed?
3. A spatial policy for locations for new services; always reachable with all modes
4. Changing the frame of accessibility policies; from travel times to real access problems
5. Introducing a normative policy on car use; not all car use is necessary or acceptable
6. Introducing ethical considerations in the mobility domain; what is good mobility?
7. A focus on time, time scarcity and diminishing stress in general and mobility policies.

This package should not be seen as a stand-alone policy package, but should be included in the formation of an integrated policy agenda.

With such a package we do not have to fear that results from social research will end somewhere under the pavement!

## References

### Analysing equity and inequality in transport

- Adams, J., 1999. The social implications of hypermobility: speculations about the social consequences of the OECD Scenarios for EST and BAU Projections, ENV/EPOC/PPC/T (99)3.
- Adams, J., 2005. Hypermobility: a challenge to governance. In: Lyall, C., Tait, J. (Eds.), *New Modes of Governance: Developing an Integrated Approach to Science, Technology, Risk and the Environment*. Ashgate, Aldershot.
- Ascher, F., 2006. Le mouvement dans les sociétés hypermodernes. Vanves, CERIMES.
- Bachiri, N., 2006. L'étalement urbain et la mobilité quotidienne d'adolescentes de territoires urbains de la Communauté Métropolitaine de Québec. Ecole d'Architecture, Université Laval, Québec.
- Bachiri, N., Despres, C., Vachon, G., 2008. Fighting teenagers sedentary: the challenges of mobility in exurbia. *Medio Ambiente y Compartmento Humano* 9, 47–67.
- Bakker, P., van Hal, J., 2007. Understanding travel behaviour of people with a travel – impeding handicap: each trip counts. In: Paper for TRB Annual Meeting, Washington.
- Bowden, C., Moseley, M., 2006. The Quality and Accessibility of Services in Rural England: A Survey of the Perspectives of Disadvantaged Residents. ADAS, Wolverhampton.
- Campbell, S., Park, Y., 2008. Social implications of mobile telephony: the rise of personal communication society. *Sociol. Compass* 2/2, 371–387.
- Carson, G., 2003. Reducing social exclusion by improving transport – assessing the problems and appraising the options. In: AET Conference.
- Cass, N., Shove, E., Urry, J., 2003. Changing infrastructures, measuring socio-spatial inclusion/exclusion. Working paper Lancaster University.
- Chlond, B., Ottman, P., 2007. Das Mobilitätsverhalten Alleinerziehenden und ihre Aktivitäten ausser Haus. *Deut. Z. Kommunalwissenschaften* 46 (2) 46–61.
- Choplin, A., Delage, M., 2011. Mobilités et espaces de vie des étudiants de l'Ést francilien: des proximités et dépendances à négocier. *Cybergeo Eur. J. Geogr.*
- Church, A., Frost, M., Sullivan, V., 2000. Transport and social exclusion in London. *Transp. Policy* 7, 195–205.



- Coutard, O., Dupuy, G., Fol, S., 2002. La pauvreté péri-urbaine: dépendance locale ou dépendance automobile? *Espaces Soc.* 108–109, 155–176.
- Currie, G., et al., 2009. Investigating links between transport disadvantage, social exclusion and well-being in Melbourne – preliminary results. *Transp. Policy* 16, 97–105.
- Davey, A., 2004. Coping without a Car, paper prepared for the New Zealand Institute for Research on Aging.
- Davidson, K., Werder, L., Lawson, C., 2008. Children's active commuting to school: current knowledge and future directions. *Prevent. Chronic Dis.* 5.
- Dejoux, V., Armoogum, J., 2010. The gap in term of mobility for disabled travellers in France: Paper at the 12th WCTR, Lisbon, July 11–15.
- Dittrich-Wesbuer, A., Freudenu, H., 2002. Autofreie Mobilität – Bedeutung auto-unabhängiger Wohn- und Lebensformen und Ansätze zur Förderung. In: Schläffer, A. (Ed.), *Bedeutung psychologischer und sozialer Einflussfaktoren für eine nachhaltige Verkehrsentwicklung*.
- Dodson, J., 2003. Transport Disadvantage in the Australian Metropolis: Towards New Concepts and Methods.
- Dodson, J., Sipe, N., 2006. Shocking the Suburbs, 2006. Urban Location, Housing Debt and Oil Vulnerability in the Australian City, Urban Research Program. Paper 8 Griffith University, Brisbane.
- Donaghy, K., Poppreuter, S., Rudinger, G., 2005. Social Dimensions of Sustainable Transport. Ashgate, Aldershot.
- Dowling, R., Lyth, A., 2003. Geographies of household travel in Sydney. In: *State of Australian Cities, National Conference, December*.
- FIA Foundation, 2004. Transport and Social Exclusion. A Survey of the Group of Seven Nations.
- Fotel, T., Thomsen, T., 2004. The surveillance of children's mobility. *Surveill. Soc.* 535–554.
- Funk, W., 2009. Mobilität von Kindern und Jugendlichen. Langfristige Trends der Änderung ihres Verkehrsverhaltens. In: Paper 10 Fachkonferenz; Junge Menschen und Mobilität, 19/20–11, München.
- Gentili, C., 2003. Transport and Social Exclusion: A G7 Comparison: An Overview of the Italian Position.
- Gorti, R., 2004. An Analysis of Travel Trends of the Elderly and Zero – Vehicle Households in the United States. (thesis) University of South Florida.
- Gough, D., et al., 2001. Effect of Travel Modes on Children's Mental Health, Cognitive and Social Development. EPPI Centre, Social Science Research Unit, University of London.
- Grieco, M., 2003. Transport and social exclusion: new policy grounds, new policy options. Keynote Paper. In: 10th International Conference on Travel Behaviour Research, Lucerne, 10–15 August.
- Grieco, M., Raje, F., 2004. Stranded mobility and the marginalisation of low-income communities: Paper Presented at the Conference on Urban Vulnerability and Network Failure, University of Salford.
- de Groof, S., 2004. Mobiliteit, ruimtebeleving, wonen en ecologie bij jongeren. In: Bursens, D. (Ed.), *Jeugdonderzoek belicht. Voorlopige synthese van wetenschappelijk onderzoek naar Vlaamse kinderen en jongeren (2000–2004)* pp. 161–178.
- Halleux, J.M., Bruck, L., Mairy, N., 2002. La périurbanisation résidentielle en Belgique à la lumière des contextes Suisse et Danois: enrancement, dynamiques centrifuges et regulations collective. *Belgio* 4, 333–356.
- Hine, J., Mitchell, F., 2001. Better for everyone? Travel experiences and transport exclusion. *Urban Stud.* 38 (2) 319–332.
- Hine, J., Mitchell, F., 2003. Transport Disadvantage and Social Exclusion. Ashgate, Aldershot.
- Hume, C., Salmon, J., Ball, K., 2004. Children's perceptions of their home and neighbourhood environments and their association with objectively measured physical activity: a qualitative and quantitative study. *Health Educ. Res.: Theory Pract.* 132–144.
- Imanashi, Y., 2003. Transport and Social Exclusion. The Japanese Experience FIA Foundation.
- Izumiyana, H., Ohmori, N., Harata, N., 2007. Space-time Accessibility Measures for Evaluating Mobility-related Social Exclusion of the Elderly. Hiroshi Institute, University of Tokyo.
- Jeekel, H., 2011. De autoafhankelijke samenleving. Delft, Eburon.
- Jeekel, H., 2013. The Car Dependent Society. A European Perspective Farnham, Ashgate.
- Kawabata, M., Shen, Q., 2005. Job accessibility as an indicator of auto-oriented urban structure: a comparison of Boston and Los Angeles with Tokyo. *Environ. Planning B* 33, 115–130.
- Kemming, H., Borbach, C., 2003. Transport and Social Exclusion: A G-7 Comparison. An Overview of the German Position.
- Kim, A., 2002. Taken for a Ride: Subprime Lenders, Automobility, and the Working Poor. Progressive Policy Institute.
- Larsen, K., Gilliland, J., 2008. Mapping the evolution of “food deserts” in a Canadian city: supermarket accessibility in London, Ontario, 1961–2005. *Int. J. Health Geogr.* 7 (1) 1436.
- Lewis, J., Sarre, S., Burton, J., 2006. Dependence and independence; perceptions and management of risks in respect of children aged 12–16: Families with Working Parents, ESRC Priority Network, Working Paper 11/2006 Social Contexts and responses to risk (SCARR).
- Limbourg, M., 2005. Mobilität im Kindesalter. Universität von Duisburg.
- Limbourg, M., Rieter, K., 2003. Die Gefährdung von Kindern im Strassenverkehr, in Kleine, W Hsrg Bewegungsraum Strasse – Kinder unterwegs. Academia Verlag St. Gallen.
- Ling, R., Haddon, L., 2001. Mobile telephony, mobility and the coordination of everyday life: Paper Presented at Rutgers University, 18/19–4.
- Lipovetsky, G., Charles, S., 2004. Les Temps Hypermodernes. Grasset, Paris.
- Lucas, K., 2003. Transport and Social Exclusion: A G-7 Comparison. An Overview of the UK Position FIA Foundation.
- Lucas, K., Grosvenor, T., Simpson, R.D., 2001. Transport, the Environment and Social Exclusion. Joseph Rowntree Foundation.
- Lyons, G., 2003a. The introduction of social exclusion into the field of travel behaviour. *Transp. Policy* 339–342.
- Lyons, G., Swinbank, S., 1998. A case study of the development of car dependence in teenagers. In: AET Conference.
- Mackett, R., et al., 2002. Understanding the car dependency impacts of children's car use. In: Paper Written for the Workshop on Children and Traffic, Copenhagen, 2–3 May.
- Manderscheid, K., 2012. Automobile Subjekte. In: *Dortmunder Konferenz Raum- und Forschungsplanung, Technische Universität Dortmund*, 9–10/2.
- McDonald, N., 2005. Children's Travel: Patterns and Influences. (thesis) University of California, Berkeley.
- Mignot, D., 2004. Transport et Justice Sociale: Reflets et Perspectives de la Vie Economique, Numero Special Transport et Mobilité, Tome XLIII, pp. 123–131.
- Miller, H., 2004. Travel Chances and Social Exclusion. University of Utah.
- Morris, K., 2006. Research into Travel Horizons and its Subsequent Influence on Accessibility Planning and Demand Responsive Transport Strategies in Greater Manchester. ETC, Strasbourg.
- Motte-Baumvol, B., 2007. La dépendance automobile pour l'accès aux services aux ménages en grande couronne francilienne. these Université de Paris, Paris.
- Nelson, N., et al., 2008. Active commuting to school: how far is too far? *Int. J. Behav. Nutr. Phys. Activity* 5.
- Noack, E., 2010. Stuck in the countryside? Women's transport mobility in rural Aberdeenshire, Scotland – experiences, behaviour and needs. In: *Jahrbuch der Österreichischen Gesellschaft für Agrarökonomie*, Band 19.
- Nuvolati, G., 2003. Resident and non-resident populations: quality of life, mobility and time policies. *J. Regional Anal. Policy* 33 (2) 67–83.
- Ohnmacht, T., Maksim, H., Bergman, M., 2009. Mobilities and Inequality. Ashgate, Aldershot.
- Orfeuill, J.P., 2004a. Transports, Pauvretés, Exclusions: Pouvoir Bouger pou s'en sortir. Editions de l'Aube.
- Orfeuill, J.P., 2004b. Mobility, Poverty and Exclusion in France. FIA Foundation.
- Orfeuill, J.P., 2010. La Mobilité, nouvelle question sociale? *SociologieS (en ligne)* (consulted 06.06.11).
- Ortar, N., 2008. Entre ville et campagne, le difficile équilibre des périurbaines jointaines. *Metropoles (en ligne)* (consulted 06.06.11).
- Paskins, J., 2004. Are differences in children's travel reflected in their cognitive maps? In: Presentation at the 3rd International Conference on Traffic and Transport Psychology, 8–9–2004.
- van der Ploeg, H., et al., 2008. Trends in Australian Children travelling to school, 1971–2003: burning petrol or carbohydrates? *Prevent. Med.* 60–62.
- Raje, F., 2003. Negotiating the Transport System: Users Contexts, Experiences and Needs. Ashgate, Aldershot.
- Raje, F., Grieco, Hine, Preston, 2004. Transport, Demand Management and Social Exclusion. Ashgate, Aldershot.
- Ridgewell, C., Sipe, N., Buchanan, N., 2005. School Travel Modes in Brisbane, Urban Research Programme. Griffith University Research Paper 4.
- Risotto, A., Tonucci, F., 1999. Freedom of movement and environmental knowledge in elementary school children. *J. Environ. Psychol.* 65–77.
- Roberto, E., 2008. Commuting to Opportunity: The Working Poor and Commuting in the U.S. Brookings Institution.
- Rosenbloom, S., Stahl, A., 2002. Automobility among the elderly: the convergence of environmental, safety, mobility and community design issues. *EJTIR* 2 (3/4) 197–213.
- Rouge, L., Bonin, S., 2009. Les “captifs” du périurban 10 ans apres. Rapport CERTU 08–26, Lyon.
- Runge, D., 2005. Mobilitätsarmut in Deutschland? *Schriften des Fachgebietes Integrierte Verkehrsplanung*.
- Sager, T., 2005. Footloose and forecast – free: hypermobility and the planning of society. *Eur. J. Spatial Dev. (September)* 465–488.
- Sanchez, T., Stolz, R., Ma, J., 2003. Moving to Equity: Addressing Inequitable Effects of Transportation Policies on Minorities. The Civil Rights Project at Harvard University, Cambridge.
- Sanchez, T., Brenman, M., 2007. Transportation equity and environmental justice: lessons from hurricane Katrina: Paper Presented at The State of Environmental Justice in America 2007 Conference, Washington, March 29–31.
- Sandqvist, K., Kristrom, S., 2001. Getting Along Without a Family Car. The Role of an Automobile in Adolescents Experiences and Attitudes.
- Sandqvist, K., 2002. How does a family car matter? Leisure, travel and attitudes of adolescents in inner city Stockholm. *World Transp. Policy Pract.* 8 (1) 11–18.
- Scheiner, J., 2006. Does the Car make elderly people happy and mobile? Settlement structure, car availability and leisure mobility of the elderly. *Eur. J. Transp. Infrastruct. Res.* 6 (2) 151–172.
- Schokker, T., Peters, P., 2006. Hypermobilen, bijdrage aan het Colloquium Vervoersplanologisch Speurwerk.
- de Singly, F., 2002. La liberté de circulation: un droit aussi de la jeunesse. *Recherche Prévisions* 67, 21–36.
- Sjolie, A., Thuen, F., 2002. School journeys and leisure activities of rural and urban adolescents in Norway. *Health Promot. Int.* 21–30.

- Smith, N., et al., 2006. Evidence Base Review on Mobility – Choices and Barriers for Different Social Groups. Centre for Research in Social Policy, prepared for the Ministry of Transport, UK.
- Social Exclusion Unit, 2003. Making the Connections: Transport and Social Exclusion London.
- Solomon, J., Titheridge, H., 2009. Setting Accessibility Standards for Social Inclusion: Some Problems. UTSG, London.
- Stoll, M., 2005. Job Sprawl and the Spatial Mismatch between Blacks and Jobs. Brookings Institution.
- Tacken, M. (without year): Ouderen en hun mobiliteit buitenshuis, problemen en alternatieven.
- Thulin, E., Vilhelmson, B., 2007. Mobiles everywhere: youth, the mobile phone and changes in everyday practice. *Young* 15 (3) 235–253.
- Taylor, J., et al., 2009. The Travel Choices and Needs of Low Income Households: The Role of the Car. National Centre of Social Research.
- Tillberg Mattson, K., 2002. Children's (in) dependent mobility and parents chauffeuring in the town and countryside. *Tijdschrift Econ. Soc. Geogr.* 93 (4) 443–453.
- Titheridge, H., 2008. Social exclusion, accessibility and lone parents. In: Paper Presented at the UK – Ireland Planning Research Conference, Belfast, 18–20/3.
- Todman, L., 2003. Physical Mobility and Social Exclusion: Some Preliminary Thought on the Explanatory Power of the Spatial Mismatch Hypothesis.
- Tranter, P., Malone, K., 2003. Out of bounds: insights from children to support a cultural shift towards sustainable and child-friendly cities. In: National Conference on State of Australian Cities, RMIT University and UNSW Australian Defence Force Academy.
- Tully, C., 2000. Umweltbewusst und den Lappen met 18. Das Auto im Lebensalltag von Jugendlichen, 21-Das Leben gestalten lernen; Mobilität und Stillstand, nr. 0/2000, pp. 48–55.
- Tully, C., 2003. Young people living in a mobile world. Thesis on the cryptic socialization of mobility regarding the next generation. In: Conference on Alternative Mobility Futures.
- Turbin, J., et al., 2002. The effects of car use on children's physical activity patterns. In: Symposium on Health Enhancing Physical Activity, Helsinki, September.
- van Wee, B., Chorus, C., 2009. Accessibility and ICT: a review of literature, a conceptual model and a research agenda. In: Paper Presented at the BIVC-GIBET Research Day, 27th May, Brussels.
- Weston, L., 2005. What helps and hinders the independent travel of non-driving teens. (thesis) University of Austin, TX.
- Wright, B., 2008. No way to go: a review of the literature on transportation barriers in health care. *World Transp. Policy Pract.* 14 (3) 7–23.
- Williams, et al., 2001. Consumption, exclusion and emotion: the social geographies of shopping. *Soc. Cultural Geogr.* 2 (2) 203–220.
- Zumkeller, D., Chlond, B., Ottmann, P., 2005. Car dependency on household and personal level, transitions of car ownership and future development of motorization in Germany, based on the German Mobility Panel (MOP).
- Zwerts, J., Werts, 2003. De invloed van het hebben en krijgen van kinderen op de mobiliteit van de ouders. Instituut voor Mobiliteit, Universiteit van Hasselt.
- Creswell, T., 2008. Understanding mobility holistically. In: Bergman, Sager, (Eds.), *The Ethics of Mobility*. Ashgate, pp. 129–140.
- Dahl, R., 2005. Heavy traffic ahead: car culture accelerates. *Environ. Health Perspect.* 113 (4) A238–A245.
- Dant, T., 2004. The driver-car. *Theory Culture Soc.* 21, 61–79.
- Diekstra, R., Kroon, M., 2003. Cars and behaviour; psychological barriers to car restraint and sustainable urban transport. In: Tolley, R. (Ed.), *The Greening of Urban Transport: Planning for Walking and Cycling in Western Cities*. John Wiley & Sons, Chichester, pp. 147–157.
- Dobbs, L., 2006. Wedded to the car: women, employment and the importance of private transport. *Transp. Policy* 12, 266–278.
- Dobbs, L., 2007. Stuck in the slow lane; reconceptualizing the links between gender, transport and employment. *Gender Work Organ.* 4 (2) 85.
- Ewing, R., et al., 2003. Relationship between urban sprawl and physical activity, obesity and morbidity. *Am. J. Health Promot.* 18 (1) 47–57.
- Exel, N., van en Rietveld, P., 2009. Could you also have made this trip by another mode? An investigation of perceived travel possibilities of car and train travellers on the main travel corridors to the city of Amsterdam. *Transport. Res. A: Policy Pract.* 43 (4) 374–385.
- Freund, P., Martin, G., 2008. Fast cars/fast foods: hyperconsumption and its health and environmental consequences. *Soc. Theory Health* 6, 309–322.
- Fuji, S., Kitamura, R., 2003. What does a one-month free bus ticket do to habitual drivers? *Transportation* 30, 81–95.
- Garling, T., Loukopoulou, P., 2005. Are car users too lazy to walk. *TRB Res. Rec.* 1926, 2005.
- Gatersleben, B., 2007. Affective and symbolic aspects of car use. In: Garling, T., Steg, L. (Eds.), *Threats from Car Traffic to the Quality of Urban Life*. pp. 219–233.
- Genre-Grandpierre, C., Josselin, D., 2008. Dependence à l'automobile, tensions dans les mobilités et stratégies des ménages. *Cybergeo J. Geogr.* 2.
- Gershuny, J., 2005. Busyness as the badge of honour for the new superordinate working class. *Soc. Res.* 72, 287–314.
- Giger, M., 2008. Une perspective de genre sur la mobilité quotidienne. *Memoire Université de Lausanne, Lausanne*.
- Gladwell, M., 2000. *The Tipping Point: How Little Things Make a Big Difference*. Little Brown and Company, New York.
- Goddard, T., et al., 2007. Voyage of the S.S. Minivan: women's travel behaviour in traditional and suburban neighbourhoods. *Transport. Res. Rec.* 1956, 141–148.
- Götz, K., et al., 2002. *Mobility Styles in Leisure Time*, ISEO Paper. Frankfurt am Main.
- Hagman, O., 2001. Mobilising meanings of mobility: car users constructions of the goods and bads of car use. In: *ESA Conference on New Technologies and New Visions*, Helsinki.
- Harms, S., 2003. From routine choice to rational decision making between mobility alternatives. In: *Conference Paper Swiss Transport Research Conference, Ascona, March 2003*.
- Heine, H., Mantz, R., 1999. Die Mutter und das Auto, PKW- Nutzung im Kontext geschlechtsspezifischen Arbeitsstellung. *SOFI Mitteilungen*.
- Heine, H., Mantz, R., 2000. *Mobilität und Grenze des Autoverzichts*. Abschlussbericht Universität Göttingen.
- Heine, H., Mantz, R., Rosenbaum, W., 2001. *Mobilität im Alltag. Warum wir nicht vom Auto lassen* Frankfurt/New York.
- Hjortol, R., 2005. *Mobility in daily life, the car and use of ICT for family logistics*. In: Paper submitted to the 45th Congress of the European Regional Science Association, Amsterdam, August 2005.
- Jarvis, H., 2004. *City time: managing the infrastructure of everyday life*. In: *ESRC Work Life and Time in the New Economy*, Seminar Paper.
- Jarvis, H., 2005. *Moving to London, time household coordination and the infrastructure of everyday life*. *Time Soc.* 14 (1) 133–154.
- Kaufmann, V., Flamm, M., 2002. *Famille, temps et mobilité; état de l'art et tour d'horizon des innovations, Recherche réalisée à l'intention de la CNAF et de l'institut pour la Ville en Mouvement*.
- Klöckner, C., 2005. *Das Zusammenspiel von Gewohnheiten und Normen in der Verkehrsmittelwahl – ein integriertes Norm-Aktivations Modell und Seine Implikationen für Interventionen*, Dissertation Ruhr Universität Bochum.
- Larsen, J., Urry, J., Axhausen, K., 2006a. *Mobilities, Networks, Geographies*. Ashgate, Aldershot.
- Larsen, J., Urry, J., Axhausen, K., 2006b. *Geographies of social networks: meetings, travel and communication*. *Mobilities* 1, 261–284.
- Larsen, J., Urry, J., Axhausen, K., 2008. *Coordinating face-to-face meeting in mobile network societies*. *Inf. Commun. Soc.* 11 (5) 640–658.
- Laurier, E., 2005. *Habitable cars: what we do there*. In: *Lecture Given at the 5th Social Studies of Information Technology*, LSE, April 2005.
- Laurier, E., 2004. *Doing office work on the motorway*. *Theory Culture Soc.* 21, 261–277.
- Lucas, K., Blumenberg, E., Weinberger, R., 2011. *Auto Motives: Understanding Car Users Behaviour*. Emerald, Bingley, UK.
- Lyons, G., 2003b. *Future mobility—it's about time*. In: Paper Presented at the Universities Transport Study Group Conference, Loughborough, January 2003.
- Lyons, G., 2003c. *Transport and Society, Inaugural Lecture*. University of the West of England.
- Martens, K., 2006. *Basing transport planning on principles of social justice*. *Berkeley Planning J.* 19, 1–17.
- Maxwell, S., 2001. *Negotiations of car use in everyday life*. In: Miller, D. (Ed.), *Car Cultures*. Oxford, pp. 1–35.
- Moeckli, J., Lee, J., 2005. *The making of driving cultures, AAA Foundation of Traffic Safety. Improving Safety Culture in the USA*, Washington 59–76.

## Understanding car mobility, its patterns and choices

- Aarts, H., Dijksterhuis, A., 2000. Habits as knowledge structures: automaticity in goal-directed behaviour. *J. Pers. Soc. Psychol.* 78 (1) 53–63.
- Ajzen, I., 2002. Residual effects of past on later behaviour: habituation and reasoned perspectives. *Personal. Soc. Psychol. Rev.* 6 (2) 107–122.
- Aronczyk, M., 2008. Taking the SUV to a place it has never been before: SUV ads and the consumption of nature. *Invisible Culture*.
- Augé, M., 1995. *Non-places*. Verso, London.
- Balkmar, D., 2007. Men, cars and dangerous driving; affordances and driver – car interaction from a gender perspective. In: *Umea Conference*, 14–17 June.
- Bamberg, S., Ajzen, I., Schmidt, P., 2003. Choice of travel mode in the theory of planned behaviour: the roles of past behaviour, habit, and reasoned action. *Basic Appl. Soc. Psychol.* 25 (3) 175–187.
- Beckmann, J., 2001. Heavy traffic: paradoxes of a modernity mobility nexus. In: *Drewes-Nielsen, L., Oldrop, H. (Eds.), Mobility and Transport: An Anthology*. The Danish Transport Council.
- Bergman, S., Sager, T., 2008. *The Ethics of Mobility: Rethinking Place, Exclusion, Freedom and Environment*. Ashgate, Aldershot.
- Bianchi, S., 2006. *Changing Rhythms of family life*. In: *Time Use and Gender Seminar*, London, 14 June.
- Borden, I., 2005. *Drive: urban experience and the automobile*. In: *Critical Architecture Theory, Public Lecture Transcripts*.
- Burbridge, S., Goulias, K., Kim, T.-C., 2005. *Travel behaviour comparisons of active living and inactive living lifeln*. Paper Presented at TRB 2006.
- Carribine, E., Longhurst, B., 2002. Consuming the car: anticipation, use and meaning in contemporary youth culture. *Sociol. Rev.* 181–196.
- Conley, J., Tigar McLaren, A., 2008. *Car Troubles*. Aldershot, Ashgate.
- Carrigan, M., Szmigin, I., 2004. Revisiting the construct of convenience in consumer research. In: *The paradox of convenience consumption*. Paper 4th International Critical Management Conference, 4–6 July, Cambridge, UK.
- Craig, L., 2005. *How Do They Do It? A Time-diary Analysis of How Working Mothers Find Time for Their Kids*. Social Policy Research Centre, University of New South Wales.

- Moens, M., 2004. Handelen onder druk; tijd en tijdsdruk in Vlaanderen. *Tijdschrift Sociol.* 25 (4) 383–416.
- Ory, D., Mokhtarian, P., 2005. When is getting there half the fun? Modelling the liking for travel. *Transport. Res. A* 39, 97–123.
- Packer, J., 2008. *Mobility without Mayhem; Safety, Cars and Citizenship*. Duke University Press, Durham NC.
- Pernack, R., 2005. Öffentlicher Raum und Verkehr; Eine sozialtheoretische Annäherung. WZB discussion paper, SP III 2005–104.
- Rammler, S., 2003, December. So unvermeidlich wie die Kautzchen in Athen; Anmerkungen zur Soziologie des Automobils. IVP – Schriften, Berlin.
- Rammler, S., 2008. Die Wahlverwandtschaft of Modernity and Mobility. In: Canzler, W., Kaufman, V., Kesselring, S. (Eds.), *Tracing Mobilities*. Ashgate, pp. 57–77.
- Redshaw, S., 2004. Roads for change: changing the car and its expressions: Paper presented to the Social Change in the 21st Century Conference, Queensland University of Technology, October.
- Redshaw, S., 2008. In the Company of Cars: Driving as a Social and Cultural Practice. Ashgate.
- Rosa, H., 2005. Beschleunigung. In: *Die Veränderung der Zeitstrukturen in der Moderne*. Suhrkamp Verlag, Berlin.
- Rosa, H., 2012. *Weltbeziehungen im Zeitalter der Beschleunigung*. Suhrkamp Verlag, Berlin.
- Schwanen, T., 2004. How time-pressured individuals cope with disturbing events affecting everyday activities; a literature review and conceptual analysis. In: *Colloquium Vervoerplanologisch Speurwerk*, 25–26–9, Zeist.
- Schwanen, T., 2007a. Matter(s) of interest: artefacts, spacing and timing. *Geogr. Ann.* 89B (1) 9–22.
- Schwanen, T., 2007b. Gender differences in Chauffeur Children among Dual-Erner Families. *Professional Geographer* 59 (4) 447–462.
- Schwanen, T., Lucas, K., 2011. Understanding auto motives. In: Lucas, K., Blumenberg, E., Weinberger, R. (Eds.), *Auto Motives: Understanding Car Use Behaviours*. Emerald, Bingley.
- Sheller, M., 2003. Automotive emotions: feeling the car. *Theory Culture Soc.* 21, 221–242.
- Shove, E., 2002a. Converging conventions of comfort, cleanliness and convenience. Online paper Department of Sociology, Lancaster University. *J. Consumer Policy* 26 (4) 395–418.
- Shove, E., 2002b. Rushing around: coordination, mobility and inequality. In: *Draft Paper for the Mobile Network Meeting*, October 2002.
- Skinner, C., 2003. Running Around in Circles: How Parents Coordinate Childcare, Education and Work. Joseph Rowntree Foundation.
- Skinner, C., 2005. Coordination points: a hidden factor in reconciling work and family life. *J. Soc. Policy* 34 (1) 99–119.
- Southerton, D., et al., 2001. The social worlds of caravanning: objects, scripts and practices. *Sociol. Res.* 6 (2) .
- Southerton, D., 2003. Squeezing time: allocating practices, coordinating networks and scheduling society. *Time Soc.* 12 (1) 5–25.
- Stauffacher, M., et al., 2005. *The Diversity of Travel Behaviour: Motives and Social Interactions in Leisure Time Activities*. Arbeitsberichte Verkehr und Raumplanung, Zurich.
- Stradling, S., 2002a, March. Persuading People Out of Their Cars. Napier University Professorial Lecture.
- Stradling, S., 2002b. Reducing car dependence. In: Hine, J., Preston, J. (Eds.), *Integrated Futures and Transport Choices*. Ashgate, pp. 100–115.
- Stradling, S., 2007. Determinants of car dependence. In: Garling, T., Steg, L. (Eds.), *Threats from Car Traffic to the Quality of Urban Life*. pp. 187–204.
- Stutzer, A., Frey, B., 2004. Stress that doesn't Pay: The Commuting Paradox. Working Paper No. 151 Institute for Empirical Research in Economics, University of Zurich.
- Sturm, R., 2005. Child obesity – what can we learn from existing data on societal trends. *Public Health Res. Pract. Policy* 2 (2) 1–9.
- Schwanen, T., 2008. Managing uncertain arrival times through sociomaterial networks. *Environ. Plann. B* 35 (6) 976–1011.
- Thorgersen, J., Moller, B., 2007. Breaking car – use habits: the effectiveness of economic incentives. *Transportation* 3, 329–345.
- Urry, J., 2000a. *Inhabiting the Car*. Department of Sociology Discussion Papers Lancaster University.
- Urry, J., 2000b. *Sociology Beyond Societies*. Routledge, London.
- Urry, J., 2003. Social networks, travel and talk. *Br. J. Sociol.* 54 (2) 155–175.
- Urry, J., 2004. The “system” of automobility. *Theory Culture Soc.* 21 (4/5) 25–40.
- Urry, J., 2007. *Mobilities*. Polity Press.
- VanderBilt, T., 2008. *Traffic: Why We Drive the Way We Do*. Alfred A. Knopf, New York.
- Vilhelmson, B., 2005. Urbanisation and everyday mobility. Long-term changes of travel in urban areas of Sweden. In: *Cybergeo: Revue européenne de géographie*, No. 302. .
- Vilhelmson, B., 2007. The use of the car – mobility dependencies of urban everyday life. In: Garling, T., Steg, L. (Eds.), *Threats from Car Traffic to the Quality of Urban Life*. pp. 145–164.
- Wajcman, J., 2008. Life in the fast lane? Towards a sociology of technology and time. *Br. J. Sociol.* 59 (1) 59–77.
- Warde, A., et al., 2002. The Changing Organization of Everyday Life in UK: Evidence from Time Use Surveys 1975–2000.
- Webber, M., 1992. *The Joys of Automobility*. Reprint 110 Transportation Center, University of California, Berkeley.
- Wee van, B., 2012. *Transport and ethics: Ethics and the Evaluation of Transport Policies and Projects*. Cheltenham: Edward Elgar Publishing.
- Woodcock, J., Aldred, R., 2008. Cars, corporations and commodities: consequences for the social determinants of health. *Emerg. Themes Epidemiol.* 5, 4.

## Reflecting on future perspectives for car mobility

- Aigle, T., Marz, L., 2007. *Automobilität und Innovation. Versuch einer interdisziplinären Systematisierung*. Berlin, WZB – discussion paper SP III 2007–102.
- Aigle, T., et al., 2007. Mobil statt fossil. Evaluationen, Strategien und Visionen einer neuen Mobilität, Berlin, WZB discussion-paper SP III 2007–106.
- Akerman, J., Hojer, M., 2005. How much transport can the climate stand? – Sweden on a sustainable path in 2050. *Energy Policy* 34, 1944–1955.
- Becker, U., Clarus, E., Friedemann, J., 2009. Klimaschutz im Verkehr – Paradigmenwechsel. *Wissenschaftlichen Zeitschrift der TU Dresden* 132–136.
- Crozet, Y., 2008. Mobilité durable: des inflexions aux ruptures, quelles politiques publiques? *TEC* 198, 3–12.
- Freudendal-Pedersen, M., 2008. *Mobility and Daily Life: Between Freedom and Unfreedom*. Ashgate.
- Garling, T., Garling, A., Loukopoulou, P., 2002. Forecasting psychological consequences of car use reduction: a challenge to an environmental psychology of transportation. *Appl. Psychol. Int. Rev.* 51 (1) 90–106.
- Geels, F., et al., 2012. *Automobility in Transition? A Socio-technical Analysis of Sustainable Transport*. Routledge, New York.
- Giddens, A., 2008a. *The Politics of Climate Change*. Polity Press, Cambridge.
- Giddens, A., 2008b. The politics of climate change: national responses to the challenge of global warming, London. In: *Policy Network Paper*.
- Gorham, R., 2002. Car dependence as a social problem: a critical essay on the existing literature and future needs. In: Black, W., Nijkamp, P. (Eds.), *Social Change and Sustainable Transport*. Indiana University Press, pp. 107–115.
- Healey, P., 2007. *Urban Complexity and Spatial Strategies: Towards a Relational Planning for our Times*. Routledge, New York.
- Hickman, R., Banister, D., 2005. *Towards a 60% Reduction in UK Transport Carbon Dioxide Emissions: A Scenario Building and Backcasting Approach*.
- Hickman, R., Banister, D., 2006. Looking over the horizon transport and reduced CO<sub>2</sub> emissions in the U.K. by 2030. In: *ETC Conference*.
- Hickmann, R., Schwanen, T., 2010. Enabling sustainable mobilities: social, cultural and experimental dimensions, and the role of planning. In: *Paper for 12th WCTR, Lisbon, July 12–15*.
- Holden, E., 2007. *Achieving Sustainable Transport*. Aldershot, Ashgate.
- Huttenmoser, M., 2005. Der Tanz mit dem Bändel, oder Was heist Kindgerechte Sicherheitspolitik, Vortrag zur Gründung des Netzwerks “Kind und Verkehr”.
- Innes, J., Booher, D., 2003. The impact of collaborative planning on governance capacity. IURD Working Paper University of California, Berkeley.
- Innes, J., Booher, D., 2010. *Planning with Complexity. An Introduction to Collaborative Rationality for Public Policy* Taylor and Francis Publishers.
- Lopez-Ruiz, H., Crozet, Y., 2010. Sustainable transport in France: is a 75% reduction in CO<sub>2</sub> emissions possible? *Transport. Res. Rec.* 2163, 124–132.
- Lyons, G., et al., 2000. *Transport Visions; Society and Lifestyles*, Report from the Transport Visions Network.
- Lyons, G., Urry, J., 2006. Foresight; the place of social science in examining the future of transport. In: *Paper based at Evidence-based Policies and Indicator Systems*, London, 11–13 July.
- Marletto, J., 2010. Structure, agency and change in the car regime. A review of the literature Centro di Ricerca Interdipartimentale di Economia della Istituzione (CREI), University of Sassari.
- Moriarty, P., Honnery, D., 2009. Australian car travel: an uncertain future. In: *30th Australasian Transport Research Forum*.
- Raad, T., 1998. *The Car in Canada: A Study of Influencing Automobile Dependence in Canada's Seven Largest Cities 1961–1991*. University of British Columbia.
- Rammler, S., 2010. *Reinventing Mobility: 14 Theses on Mobility Policy*. Institut für Transportation Design, Braunschweig.
- Soron, D., 2009. Driven to drive: cars and the problem of “compulsory consumption”. In: Conley, J., Tiger McLaren, A. (Eds.), *Car Troubles*. Ashgate, Aldershot, pp. 181–197.
- Sperling, D., Clausen, E., 2003. The developing world's motorization challenge. *Issues Sci. Technol.* 19 (1) 52–59.
- Sperling, D., Gordon, D., 2008. *Two Billion Cars, Driving Towards Sustainability*. Oxford University Press, Oxford.
- Sperling, D., 2010. *Steps into Postfossil Mobility: A Vision and Policy Plan for Sustainable Transportation*. Keynote lecture: “Future Technologies II: Mobility” Our Common Future, Essen.
- Staley, S., 2009. In: Lanham, Md. (Ed.), *Mobility First: A New Vision for Transportation in a Globally Competitive 21st Century*. Rowman & Littlefield Publishers.
- Teisman, G., van Buuren, A., Gerrits, L., 2009. *Managing Complex Governance Systems: Dynamics, Self-Organization and Co-evolution in Public Investments*. Routledge, New York.
- Vogt, M., 2003. Mobil für die Zukunft? Ethische Aspekte einer nachhaltigen Mobilitätsgestaltung, Impulsreferat Forum Nachhaltigkeit und Mobilität, SPD. .

## Other mentioned literature

- Brindle, B., 2003. Kicking the Habit; some musings over the meaning of “car dependence”. *Road Transp. Res.*, 12 (3), 61–63; (4) 34–40.
- Canzler, W., Marz, L., 1996. Festgefahren? Der Automobilpakt im 21. Jahrhundert, WZB Discussion Papers FS II. , pp. 96–108.



- Hillman, M., 1973. *Personal Mobility and Transport Policy*. Policy Studies Institute, London.
- Hillman, M., Henderson, I., Whaley, A., 1976. *Transport Realities and Planning Policy: Studies of Friction and Freedom in Daily Travel*. Policy Studies Institute, London.
- Hortulanus, E., Machielse, J., 2001. *Op het snijvlak van de fysieke en de sociale leefomgeving*. Den Haag.
- Kennisinstituut voor mobiliteitsbeleid, 2009. *Het belang van het Openbaar Vervoer*.
- Marsh, P., Collett, J., 1986. *Driving Passion: The Psychology of the Car*. Random House.
- Paterson, M., 2006. *Automobile Politics*. University Press, Cambridge.
- RAC Foundation, 2009. *The Car in British Society*.
- Sachs, M., 1992. *For the Love of the Automobile*. University of California Press, Berkeley.
- Schneider, K., 1971. *Autokind vs. Mankind*. W.W. Norton and Co.
- SCP 2006 *De tijd als spiegel Hoe Nederlanders hun tijd besteden*. Den Haag
- SCP 2010 *Tijd op orde? Een analyse van de tijdsorde vanuit het perspectief van de burger*. Den Haag
- Stanley, J., Mulley, C., 2010. *Workshop report: social inclusion*. Res. Transport. Econ. 29, 275–279.
- Vigar, G., 2001. *The Politics of Mobility*. T&F Built Environment.

## Addendum on national policies

### The relevant websites, visited 21 March 2014:

- Australia; <http://www.infrastructure.gov.au/transport/>.
- UK; <https://www.gov.uk/government/policies?departments%5B%5D=department-for-transport>.
- Germany; [http://www.bmvi.de/DE/VerkehrUndMobilitaet/Verkehrspolitik/verkehrspolitik\\_node.html](http://www.bmvi.de/DE/VerkehrUndMobilitaet/Verkehrspolitik/verkehrspolitik_node.html).
- Sweden; <http://www.government.se/sb/d/11941>.
- Norway; [http://www.regjeringen.no/upload/SD/Vedlegg/NTP/Binder1ntp\\_engNY.pdf](http://www.regjeringen.no/upload/SD/Vedlegg/NTP/Binder1ntp_engNY.pdf).
- Denmark; <http://www.trm.dk/graphics/Synkron-Library/trafikministeriet/Publikationer/2008/B%E6redygtig%20transport/Sustainable%20transport%20TRM.pdf>.
- France; <http://www.developpement-durable.gouv.fr/La-mobilite-des-Francais.html>.
- Canada; <http://www.tc.gc.ca/eng/road-menu.htm>.

- New Zealand; <http://www.transport.govt.nz/ourwork/land/>.
- Netherlands; [http://www.google.nl/url?sa=t&rc=1&q=&esrc=s&source=web&cd=1&ved=0CDIQFjAA&url=http%3A%2F%2Fwww.government.nl%2Ffiles%2Fdocuments-and-publications%2Fpublications%2F2013%2F07%2F24%2Fsummary-national-policy-strategy-for-infrastructure-and-spatial-planning%2Fsummary-national-policy-strategy-for-infrastructure-and-spatial-planning.pdf&ei=oD8sU\\_HhB6Wx0AWg6oBA&usq=AFQjCNE7rySghlj\\_\\_5IKFY-eQICP2A38jA](http://www.google.nl/url?sa=t&rc=1&q=&esrc=s&source=web&cd=1&ved=0CDIQFjAA&url=http%3A%2F%2Fwww.government.nl%2Ffiles%2Fdocuments-and-publications%2Fpublications%2F2013%2F07%2F24%2Fsummary-national-policy-strategy-for-infrastructure-and-spatial-planning%2Fsummary-national-policy-strategy-for-infrastructure-and-spatial-planning.pdf&ei=oD8sU_HhB6Wx0AWg6oBA&usq=AFQjCNE7rySghlj__5IKFY-eQICP2A38jA).

### Focus in the national policies on car mobility:

- Australia; infrastructure investment, road safety, surface transport security, motor vehicles regulations, vehicles and the environment, public transport for the disabled. Mobility policies more on the level of the states (with great differences).
- UK; managing, investing and improving the road network, making roads safer, improving local transport, making transport (especially public transport) more accessible to all, reducing greenhouse gas emissions.
- Germany; road network investments, sustainable mobility, road safety and security, ITS, pricing (LKW/Maut), drivers licenses. Mobility policies more on the level of the states (Länder).
- Sweden; investing in the road network, congestion, road safety, environment and road transport.
- Norway; road investments, road safety, congestion, road mobility and the environment, also a focus on slow modes, transport for all (universal design).
- Denmark; new roads strategy, green transport technologies, green car taxes, ITS.
- France; investments in the road network, great projects, sustainable mobility, car sharing, biking, road safety, ITS, accessibility for the disabled.
- Canada; surface road infrastructure, motorvehicle safety, road security, transport modes and the disabled.
- New Zealand; roading networks, road safety, provision of transport for the disabled, road transport and the environment, slow modes.
- Netherlands; road network investments, road safety, sustainable mobility.

### In summary, focus on:

- Investment in road network
- Road safety
- Cars, roads and the environment

Nearest to social themes: Accessibility for the disabled; in Australia, Norway, France, UK, Canada and New Zealand, however mostly related to public transport.