The psychology of sustainable transport

Birgitta Gatersleben on reducing our dependence on the private car

Cars contribute to local air pollution, traffic danger, congestion and poor physical health due to lack of exercise. If the final goal of sustainable development is to sustain or improve the quality of life for all, now and into the long-term future, the current growth in private car use is clearly unsustainable. Understanding why most people prefer using a car over other modes of transport for their daily travel, and how they can be persuaded to use their cars less or even abandon them altogether, is therefore an important goal for psychology.

questions

What is the best thing about driving a car?

Why do so few people cycle to work or school in Britain?

Is there anything we can learn from car advertisement in order to promote sustainable transport choices?

Why do so many people use cars even though they express concern for the environmental problems caused by private car use?

How likely is it that there will be fewer cars on the road in the future?

resources

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Private car use contributes significantly to environmental problems on a global as well as a local and individual level. About 18 per cent of the total energy requirements of European households is for transport (Reinders et al., 2003). What is behind the love affair with the automobile, and what can psychology contribute to the sustainable transport debate?

Most research in environmental psychology, as well as a large number of policy interventions in this area, are based on attitude models such as the theory of planned behaviour (Ajzen & Fishbein, 1977). This model suggests that intentional behaviours are influenced by attitudes towards that behaviour, perceived subjective norms (what others think) and perceptions of behavioural control. The assumption is that travel behaviours are voluntary, planned behaviours and that providing people with the right kind of information will allow them to make more informed (i.e. more sustainable) choices.

Somewhere, over the rainbow, can people be persuaded to use their cars less?

Indeed there is plenty of evidence that people are more likely to be willing to reduce their car use if they feel this is a good thing to do, if they believe that they can and that others will approve of this (e.g. Bamberg et al., 2003).

People are also more willing to reduce their car use if they have stronger moral norms. Reducing personal car use can be seen as altruistic behaviour, adopted for the sake of others (the community, future generations, the biosphere). There is plenty of evidence to support this idea. Those who have stronger biospheric and altruistic values (as opposed to egoistic), those who feel more morally obliged to act pro-environmentally and those who more strongly believe car use contributes to environmental problems, are more inclined to try to reduce their car use (e.g. Nordlund & Garvill, 2003).

But most people appear to be aware of the costs of private car use, yet do little about it. In 2008, the average 'Brit' spent around 230 hours per year in a car and only 70 hours walking, 10 hours cycling, 40 hours on a bus and 30 hours on a train (Department for Transport, 2011). This is despite the fact that 68 per cent said that they are concerned about the effects of transport on climate change and 70 per cent about car exhaust fumes in cities, and that 43 per cent said they could cycle many journeys of less than two miles rather than make them by car, 35 per cent said they could just as easily take the bus and 41 per cent that they could just as easily walk.

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There is a range of reasons why people may not act upon their attitudes, some of which will be discussed here. I will address the idea that behaviour change is a process, not an event. Changing behaviour, even under ideal circumstances, may require more effort than is often presumed. One factor that plays a significant role is habit. Much of what we do, we do without thinking. Giving people information to make better choices is not going to work if they are not making conscious choices to begin with. Moreover, people may express a positive attitude towards reducing their car use, but when it comes to actually doing something they may well find it easier to change their attitude rather than their behaviour – or cope with the cognitive dissonance! Finally, attitudinal research on sustainable transport often only measures perceptions of the instrumental costs and benefits of driving, in terms of time, money and effort. Yet much of what we do we do because we believe it will make us feel or look good. These affective and symbolic aspects are particularly relevant for private car use.

Behaviour change is a process
The stages of change model (more commonly employed in health psychology), may be useful to help tackle unsustainable transport choices (Prochaska & DiClemente, 1984). According to this model change is not an event but a process where people move through different stages from pre-contemplation, via contemplation (considering change), to ready for action (intending to change), action (trying it out) and maintenance (doing it consistently). Different interventions are needed for people in different stages, and without significant intervention people can move not only towards maintenance but also in the opposite direction. Raising awareness of the environmental costs of driving may help move people from pre-contemplation to contemplation.

In order to get those who are ready for action to actually take up an alternative mode of transport such as cycling calls for different strategies. A study focused on bicycle use (Gatersleben & Appleton, 2007) showed that the majority of people in an English sample had never considered cycling and believed that cycling was simply not for them. They indicated that they would not cycle under any circumstances (pre-contemplation). A substantial number indicated that they would in principle be interested to try it out (contemplation). But only very few ended up participating in a study where they were asked to do so (ready for action). Those who did received significant support (a bicycle, maps, fitness tests) to help them start and continue cycling. Participants' views of cycling changed over time, and positive experiences encouraged people to continue to cycle. Similar results have been found in other studies. Fujii and Gärling (2003), for instance, found that those who had used a free bus pass during a trial period were more likely to use the bus after the free trial was over. These people had been helped to establish a new travel routine.

Habit
Many of the things we do, we do without thinking. When we leave our home in the morning we rarely think about which mode of travel to use to get to work, we simply pick up our keys, walk out of the house, get in the car and drive away. It is not until we cannot find our keys or our car doesn't start that we (have to) consider alternatives.

With repetition and a stable context habits can develop. When behaviour is habitual it takes place without much thinking or conscious planning, and in this case information provision about alternative modes is relatively pointless. The 'habit discontinuity hypothesis' suggests that behaviour change interventions may be much more effective when people have gone through a major lifestyle change due to which their habits have been discontinued, e.g. when they have moved house or job (Verplanken et al., 2008). This new situation makes it necessary for them to reconsider their travel choices. Moreover, in such situations people are more likely to act in line with important values (such as protecting the environment: Verplanken et al., 2008).

Justifications of behaviour
If you ask someone why they drive a car, you are likely to receive an answer that refers to the advantages of a car in terms of flexibility, safety, speed and comfort and the disadvantages of other modes in those same terms. However, providing better facilities may not necessarily result in behaviour change. For instance, building more cycle lanes may not increase cycling (see Gatersleben & Appleton, 2007).

In fact, such interventions could even backfire. Cognitive dissonance theory suggests that when people are faced with a discrepancy between what they say and what they do they will be motivated to close this gap (Festinger, 1957). But this can be done by changing behaviour as well as by changing attitudes. For example, a Dutch survey with potential users of a carpool lane before and after opening of the lane (in 1993) found that rather than changing behaviour (using the lane) people changed their attitudes. For instance, solo drivers had a more positive attitude towards solo driving after the lane was opened than they did before (Van Vugt et al., 1996). The lane was perceived to be a failure and closed after several months in operation.

Symbolic aspects of car use
We don't just own and use cars because they are easy and convenient modes of getting from A to B: if it were that simple Jeremy Clarkson would be out of a job! As much as they have instrumental value, cars also have affective and symbolic value (Steg et al., 2001). The instrumental value relates to the functional properties of a car, for instance it may get us from

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home to work quicker than public transport. But cars also allow us to express to others who we are (or how we would like to be seen: social-symbolic function) and driving fast can be thrilling (affective function: see Gatersleben, 2007).

In terms of the social-symbolic aspects, cars are ideal visual material objects that can help us to make judgements about others (impression formation) and can help us to manage other people's perceptions of ourselves (impression management). If I show you a photograph of a pink VW, a white van and a black BMW and a set of photographs of people, you would probably find it easy (perhaps even fun) to make judgements about which person may be found in which car. Moreover, we know that when women are shown an image of a man in a high status car, they find this man more attractive then when the same man is shown in an average status car (Dunn & Searle, 2010).

When people are asked directly, they will not rate the symbolic value of cars as important. However, when the research task is more ambiguous (when people are asked to rate the attractiveness of transport scenarios), symbolic and affective aspects play a significant role in judgements about cars and driving. The scenario rated the most attractive in Steg et al.'s (2001) study was: 'Finally you bought your dream car, your neighbour watches in admiration when you are testing your new car. It holds the road well.' The fourth most attractive scenario was: 'You pick up your son from school. You hear him saying to his friend that your car is much better than and stronger than the car of his father. You decide not to go home right away, but make a short drive first.' The last scenario may well sound familiar as it featured in a car advertisement on British television a few years ago. Car manufacturers often try to sell their products by highlighting the potential symbolic and affective advantages of their products.

Cars are important for identity formation and maintenance (see box). For some, a car is a primary territory – a place

with which they identify, which they personalise and where they feel in control and safe (Fraine et al., 2007); a place of self-expression ('My car is dedicated to…') and communication ('I suppose it [a sticker] is a way of communicating but it is a way of expressing myself as well', Fraine et al., 2007, p.210). When your car has become a part of you, invading your car space is like invading your personal space. Those who identify more strongly with their car (e.g. 'my car is a reflection of me') are more likely to find it annoying if someone were to touch their car, write in dust on their car, change settings on the dashboard or park too close (Watts, 2008).

Social-symbolic aspects can form important barriers to reducing car use. The more car drivers derive a sense of personal identity from driving, the less willing they are to reduce their car use (Stradling et al., 1999). And people who are emotionally attached to their car drive more and express more negative attitudes towards travel demand management compared to those who are less attached (Nilsson & Küller, 2000). Moreover, the extent to which people are resistant to changing their car use under a range of scenarios is related to the extent to which these scenarios are perceived to threaten their

What does your car say about you?

(social and car-related) identity (Murtagh et al., 2012).

Of course, there are individual differences. Some people attach more importance to owning the right type of car then others. Young people and low-income groups may value affective functions of the car more than older people and higher-income groups, and male drivers tend to value symbolic and affective outcomes more than female drivers (Steg et al., 2001). Moreover, people with a stronger materialistic value orientation (who believe that acquiring wealth and material

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possessions will improve their well-being and status) are more likely to want to buy a car (if they don't already have one) and drive an expensive car for a day. They are also more likely to believe they can impress others if they drive the right kind of car, that they would feel powerful if they drove an expensive sports car. And they are less willing to reduce their car use or change their mode use for environmental reasons (Gatersleben, 2011).

Affect

Driving can be stressful. A recent study in the US demonstrated that car commuters experience more stress and negative mood than train users (Wener & Evans, 2011). However, driving can also be pleasant. Although 23 per cent of participants in an English commuter survey said that their car journey was stressful, 44 per cent said it was relaxing, 60 per cent agreed their commute provided them with privacy, freedom and control. Only 11 per cent found their journey generally unpleasant (Gatersleben & Uzzell, 2007). Beautiful natural scenery is the most important source of a positive experience for all mode users (Gatersleben & Uzzell, 2007). In addition, music is an important source of positive experiences for drivers, and reading for public transport users. Flexibility is important both for car users and cyclists, whereas seeing and communicating with other people is an important source of a pleasant experience on public transport. Only walking and cycling are perceived to be intrinsically motivating activities in their own right. These potential benefits of sustainable travel modes could be highlighted in sustainable travel campaigns in the same way car manufactures highlight the symbolic and affective aspects of their products.

So where to go from here?

Individual car use contributes to a wide range of social and environmental problems in modern-day societies. Reducing our dependence on cars is well worth exploring and promoting. But this is not an easy task, as many variables play a role. Often we don't think about the mode of transport we use or whether we need to make a journey at all. So providing people with information on more sustainable options needs to be well placed and well timed. Interventions are more likely to be effective when car habits have been disrupted first. Moreover, 'simple' information campaigns are unlikely to be sufficient to move people

'When it comes to how I travel... who am I?'

Niamh Murtagh outlines some ongoing research at the University of Surrey

Working parents across England were asked how they saw themselves in relation to their regular modes of travel. In response to the question 'When it comes to how I travel, who am I?', the 267 participants provided up to 20 responses starting 'I am...'.

Instrumental, affective and symbolic motives emerged. Participants wrote about being dependent on their car, disliking or enjoying driving, being angry with other motorists or 'not paying over the top for public transport'. In some cases, the symbolic importance of a car was explicit: 'I am young and sexy in my car', 'I am trying to impress with my car'. More generally, a number of responses (39 per cent) noted being 'good', 'patient', 'tolerant' or

'considerate', with the same number of responses referring to being a fast or confident driver, 'a girl racer', 'Lewis Hamilton' or 'Stirling Moss'.

Multiple identities emerged from the participants' responses. Some identities were transport-related, either directly expressed: 'I am a car driver', 'I am a cyclist' (or in a qualified form: 'I am someone who drives because they have to'). A number of social identities also emerged, including spouse, friend, parent, sibling, worker and man/ woman. Directly expressed social identities included 'I am a dad', 'I am female', with more complex social roles emerging in statements such as: 'I am the kids' private taxi', 'I am the one

that takes my mum where she wants to go...'. Additional quantitative measures of travel mode were also collected, and small, significant relationships were found between particular identities and car use on regular journeys. The findings provide initial evidence for identities as contributing to travel mode choice. The qualitative data also suggest that how people travel may be part of how they construct some important social identities. Could car use in fact enable management of multiple identities, such as parent and worker?

Work is continuing on *how* identities may relate to travel mode, and on the implications of this relationship for encouraging more sustainable transport.

from contemplating an alternative mode of transport to establishing a new, more sustainable habit. More targeted interventions such as company and school travel plans may be useful here as they provide targeted detailed and specific feedback, support and services.

When trying to tackle car use, it is important to consider the role of cars in modern-day societies, which extend beyond the simple utility function as a mode of transport. Cars are important symbols of status and success. Cars provide places where people can feel safe and secure. Such functions cannot be provided by any collective mode of transport. The relative importance of these functions and the extent to which they may form barriers for change needs to be understood in much greater detail. But symbolic and affective aspects may not only form barriers for change. A series of experiments with a student population in the US suggests that when people are concerned about their status they may be more likely to choose a hybrid car over a luxury car (Griskevicius et al., 2010), but only when choices are made in public and

when the hybrid car is more expensive. More work is needed to verify such findings and explore the actual carbon implications of such findings, but they open up interesting new insights.

Environmental psychology has an important role to play in understanding travel choices and helping to develop more sustainable forms of transport. It can provide a better and more in-depth understanding of the real costs and benefits of driving and mode choices. It can help inform transport policy by providing insight into when and how people make transport decisions. But the research field is relatively new, and a great deal more work is needed to fully understand (un)sustainable travel choices.

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