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The New Mobilities Paradigm and Sustainable Transport: Finding Synergies and Creating New Methods

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Introduction

Increasingly transport is perceived as having important environmental consequences, which are proving even harder to resolve than in other sectors of production and consumption. For example, within the European Union, CO_2 emissions from manufacturing are in decline, but emissions from transport stubbornly refuse to fall. On a global level, transportation energy use continues to increase dramatically (Woodcock et al 2009). This is due to the increasing movement both of people and of goods. While hopes have been raised that this might be offset by the increasing movement of information, so far the evidence for this is limited. Transport is a major and growing contributor to global CO_2 emissions, but is also implicated in a range of other environmental problems: including, but not limited to air pollution, noise pollution, light pollution, resource depletion, community severance, decreasing biodiversity and soil erosion.

Although the overall picture is of increasing motorisation, diversity exists within and between regions, creating different challenges and opportunities for change. Among highly motorised countries: some cities have encouraged commuting by active transport (walking and cycling), while in others public transport is relatively dominant (Aldred 2012a). However, all such countries are strongly dependent upon fossil fuel-powered transport. Middle income countries have been motorising quickly, with traditional ways of travelling swiftly marginalised and injury rates high. In poor countries only the elite is motorised and much of the population lack access to key intermediate technologies such as bicycles. However, aid often centres around building highways although this is not of benefit to majority populations whose only transport is their feet (Roberts 2007).

There are major social justice issues which continue to be poorly recognised and addressed. Clearly it is not possible for all the Earth's citizens to consume fossil fuel-powered transport resources at the same rate as Europeans, let alone people in the US or Australia. The spectre of environmental terrorism directed at air travellers has been raised as a possible desperate response in the future by those who have seen their homes destroyed partly by air travel, the use of which is massively unequal within and between countries. Within nation states there are major inequalities in terms of the costs and benefits of transport. In many poor countries, it is largely the rich who drive and the poor who suffer the consequences. Even in highly motorised countries such as the UK, the poor - who drive least - have the highest risks of being injured or killed on the roads (Edwards et al 2006) and who experience the most transport-related air pollution.

In response to this it is now increasingly recognised that transportation systems urgently require transition. For example, within transport modelling a focus on small and

incremental changes has been supplemented by the rise of 'visioning', with an explicit concern for the social. The EPSRC-funded *Visions of Walking and Cycling in 2030* project was an example of this in the UK context. One motivation behind the project was the desire to communicate the need for a qualitative shift in people's lives, and to demonstrate the different possible futures this might entail. While these sustainable futures would involve less transport, they would involve mobility being understood differently, and could involve more of other things that people value. Just as the transition to the motor-car involves substantial shifts in social values and social practices, so will the transition away from the motor-car. This is what makes it (a) so challenging and (b) so interesting for social scientists.

This chapter discusses what the 'new mobilities paradigm' (NMP) can offer the growing body of work within the field of sustainable transport. The NMP and sustainable transport approaches can both be seen as critiques of traditional transport studies from different perspectives and for different reasons. They remain rather separate literatures even though key figures in each have sought to bring them together: John Urry (2008, 2010), for example, has written extensively on transport and climate change from an NMP perspective, and David Banister (2005) provides an intriguing discussion about transport and culture in his book *Unsustainable Transport*.

The chapter highlights areas where the NMP and sustainable transport share common themes, and identifies other areas where NMP contributes additional foci. There are points of disagreement, particularly around issues of normativity, and neglected areas where a combined approach might prove fruitful. These include a mobilities approach to 'freight', a sociology of mobilities movements, and a more in-depth treatment of the question of levels of analysis within mobility regimes or systems. Both NMP and Sustainable Transport share similar roots but have different perspectives. Therefore, combining the two approaches creates new opportunities for continued critical dialogue, which can yield new areas of work.

The New Mobilities Paradigm

History and Key Concerns

The NMP emerged in the early twenty-first century, largely led by sociologist, John Urry.[1] On one level it represents the continuation of an internal critique of key sociological concepts in response to Manuel Castells' (1996) work which posits the end of 'society' and its replacement by networks. But one key innovation made by Urry and others writing within a mobilities approach focused on the role of transportation in this posited move beyond society. I will suggest that at least in Urry's formulation of the NMP, there was a re-orientation of structuralist sociology: while 'society' may have vanished, social systems remain in Urry's concept of the 'car-system'.

The NMP's critique of 'sedentarism' was not purely about asserting the importance of the physical movement of people. In Urry's *Mobilities*, he argues for an equal focus on other types of movement, including virtual and imaginary movement, and movement of things (Urry 2007). But research explicitly or implicitly located within the paradigm has tended to concentrate upon the movement of people, including detailed ethnographies of public and private transport journeys (see for example, Jungnickel 2005, Watts 2008, Laurier et al. 2008,

Aldred and Jungnickel 2012). In recent years there has been a particular flourishing of work on 'alternative' mobilities, although much work continues to study motor transport.

Societies or Networks

Although Urry's *Mobilities* (2007) brought the new paradigm to the fore, it was his *Sociology beyond Societies* (2000) that laid the basis for it. Here, Urry points out that 'if sociology does possess a central concept, it is surely that of society' (Urry 2000: 5), yet sociologists disagree on what exactly society *is*. He argues that 'the material reconstitution of the social presumes a sociology of diverse mobilities' (Ibid: 20). For Urry, sociology has theorised globalisation while ignoring what made globalisation possible:

> strangely the car is rarely discussed in the 'globalisation literature', although its specific character of domination is more systemic and awesome in its consequences than what are normally viewed as constitutive technologies of the global, such as the cinema, television and especially the computer (Urry 2006: 25).

Drawing on the work of globalisation theorists such as Castells (1996) and Actor Network Theory (ANT), Urry proposes that sociology should replace static with mobile metaphors of social life. For Kaufmann (2010) removing 'society' from sociology opens up questions of space, as spatial attributes of the 'social' are brought into question rather than assumed to be located within (national) 'society'. Places should then be seen as

> a set of spaces where ranges of relational networks and flows coalesce, interconnect and fragment. […] These propinquities and extensive networks come together to enable performances in, and of, particular places (Urry 2000: 140).

This sense of the 'cultural production of space' connects with work by David Harvey and Henri Lefebvre in seeing places as socially produced (Richardson and Jensen 2003), although they place more emphasis on localised contestation and inequality.

Instead of structures, Urry claims that networks provide a better way of thinking about the organisation of social life. These networks are not purely social but include, for example, the transmission of quantitative information by computers (Urry 2007: 34). Urry makes a distinction between scapes and flows, where the former are socio-technical infrastructures that shape and organise flows of people or things. One issue here relates to sociology's long-running dichotomy of structure and agency: does this approach risk black-boxing the agency of actants that flow (see Böhm et al. 2006)? Are they merely propelled along the circuits of scapes?

From Transport to Mobilities

Urry's (2000) critique of 'society' exists in the context of broader shifts within the social sciences from the 1970s onwards, such as the reaction against 'methodological nationalism'. However, it was his emphasis on mobilities (*Sociology Beyond Societies* is subtitled 'Mobilities for the twenty-first century') that defined the subsequent 'mobilities turn' (Urry 2007). For sociology, transport had long been seen as a mundane and marginal area of

research, almost as if sociologists agreed with transport economists that time spent travelling was purely a cost to be minimised. Yet in recent times, transport has become a key area of interest, albeit redefined as 'mobilities'.

The concept of 'mobilities' broadens the idea of 'transport', covering not just the movement of material goods and people but also virtual and imaginary movement (Urry, 2007). This has helped to reorient academic fields, bringing policy transfer literature into a new sociological space and incorporating migration studies with work on transport-related inequalities (for example, in the journal *Mobilities*, co-edited by Urry). 'Mobilities' has broadened the scope of social science: physical movement becomes sociologically meaningful, rather than dead space that people traverse on the way to meaningful places. Ole Jensen (2006, 2010) has drawn upon classic sociological theory to argue for the application of interactionist sociology to street experiences between differently mobile citizens in different kinds of infrastructural settings. A very different example of this revitalised sociology of the streets is Peter Merriman's (2007) cultural history of the M1 that rewrites the motorway as a meaningful space.

The move from transport to mobilities also implies a methodological shift. Jon Shaw and Markus Hesse (2010) note that the mobilities literature tends to foreground experiential and non-rationalistic aspects of movement, while transport geography is often more quantitative, positivist and oriented towards existing policy paradigms. While bringing qualitative methods into transport has been extremely fruitful, there is a potential problem: the reproduction of social science's long-running methodology wars, which is less fruitful and potentially inhibits collaboration. Intriguingly, like the car system itself, the mobilities turn has a tendency to spread out and mutate: 'mobile methods' or 'mobile methodologies' (Büscher et al. 2011; Fincham et al. 2010) are currently fashionable and can encompass both methods that are used 'on the move' (like video ethnography) and methods of studying movement (which might themselves be sedentary, such as the more traditional sit-down interviews, or, potentially, quantitative methods).

Finally, 'mobilities' is linked, as suggested above, to sociological and geographical narratives about social change and related changes in what might be termed 'structures of feeling' (REF Williams). This 'mobilities' narrative itself is open to question. For example, Pooley et al. (2005) found that mobility has not changed dramatically in qualitative terms in Britain during the twentieth century: people make similar types of journeys although they travel longer distances to get there. This raises the question of to what extent 'mobilities' are assumed to be inherently meaningful to participants, and to what extent this is a matter for empirical investigation in different contexts. Of course, the sociologically meaningful is not necessarily coterminous with what is meaningful for individuals. Yet sometimes narratives around changing mobilities may imply that everyday life has been transformed to a greater extent than is the case (Pooley et al. 2005; see also Cresswell 2010).

Identities

The NMP constructs mobilities as at least potentially meaningful for the (sub)cultural identities of individuals and groups. This can be seen as a two-way process – transport influences social identities, while existing social identities shape how people use and

understand transport (Skinner and Rosen 2007). The former is explored in David Gartman's (2004) characterisation of 'three ages of the automobile' in relation to the changing significance of the car as a consumption object. A different slant on the same question can be found in my article on 'cycling citizenship' characterising relationships to the city that might be enabled through the practice of cycling (Aldred 2010).

The pluralisation of 'mobilities' implies diversity rather than commonality. Much mobilities literature discusses ways in which different identities impact mobility experiences. Melissa Butcher's recent paper, for example, includes a discussion of how gender and class distinctions are expressed, transformed, and erased through the use of the Delhi Metro (Butcher 2011). Similarly Steinbach et al's study of cycling in London (2011) focused upon how cycling in this context might be viewed differently by people of different classes, ethnicities, and gender. This literature is important in terms of making transport more sustainable because it stresses that strategies and policies appealing to one social group may have contrary effects upon others. It highlights the importance of thinking about culture and identity in relation to travel choices. However, as will be discussed later, the pluralisation of mobility experiences in turn comes into contention with the sustainable transport-inflected concept of 'car culture' as singular.

As the literature on mobility and identity is becoming extensive, here I outline some themes through examples focusing on the car, to indicate its foci and its contribution. While cars have traditionally been gendered as a masculine possession, still expressed in differential car ownership and use, cars containing children are gendered as 'women's space' (Barker 2009). There is a gendered division of travel space and labour when the family travels by car, while passengers are rarely as passive as the description would suggest (Laurier et al. 2008). Yet, family car travel imposes certain legal and physical limits. Children 'never have independent and autonomous access to cars, are unable to drive, are embedded within specific micro-political power relations within families and are also subject to broader restrictions regarding their age' (Barker 2009: 74; see also Bonham 2006). These processes and the norms they engender may then affect broader perceptions of childhood and the family, indicating connections between how specific identities shape transport use and broader social processes.

Daniel Miller's influential book *Car Cultures* (2001) sees cars as connected to social identities in diverse ways. It includes two articles which examine how cars are used as objects of rebellion against ascribed cultural identities of gender and of 'race' (Garvey 2001; Gilroy 2001). Both articles – especially the latter by Paul Gilroy – represent an application of cultural criticism in that they suggest cars are a form of commodified rebellion standing in for 'true' resistance. Gilroy's analysis of 'race' and automobility is somewhat at odds with Miller's focus on diversity of meanings: it implies that there are common understandings of what cars mean, associated with deeply held values. The drivers he discusses are not attaching different meanings to cars, but claiming existing dominant associations (speed and power) for themselves. Similarly, the Norwegian women discussed in the book use 'dangerous driving' to reject dominant ideals of femininity.

Other work has discussed cars as 'national' objects. Rudy Koshar (2004) compares German and British discourses around cars in the inter-war period. One of relatively few

analysts to take a nationally comparative approach, he links cultures and stereotypes to the changing fortunes of the German and British car industry and inter-war economic and political change more broadly. More work in this vein, both historical and contemporary, could prove useful in addressing the gap between broader social claims made in theoretical work and often relatively small-scale empirical case studies. This area of research has generated some of the most productive themes stemming from NMP-influenced studies, and debates over how to conceptualise the connections between (sub)cultural mobility identities and broader social processes look set to continue.

Systems

While Urry's *New Mobilities Paradigm* abolished society, it did not abolish structures and systems. For all the focus on identity in the mobilities literature, Urry's founding framework can be seen as leaning towards a structuralist approach. Indeed, some mobilities writers have criticised Urry's emphasis on the systemic as producing a 'rather one-sided' (Dant and Martin 2001: 148) view of car-use, ignoring the multiple ways in which the car is embraced by individuals. Conversely, Urry has stressed the ways in which the system perpetuates itself: 'Automobility can be conceptualised as a self-organising autopoietic, non-linear system that spreads world-wide, and includes cars, car-drivers, roads, petroleum supplies and many novel objects, technologies and signs. The system generates the preconditions for its own self-expansion.' (Urry 2006: 27)

Urry has predicted a shift beyond the car, citing pressure from declining oil supplies to develop electric powered public transport and smart cars. But by stressing the systemic nature of automobility, one risks downplaying the political dimensions of automobility, as discussed by Böhm et al. (2006), Paterson (2007) and Rajan (2006). Concurring with Urry in characterising automobility as 'one of the principal socio-technical institutions through which modernity is organised' (Böhm et al. 2006: 1), Böhm et al. however, propose an alternative concept – 'regimes of automobility' – rather than the existence of a single car-system, interconnected regimes that interact and conflict at multiple levels. Similarly, critiquing the perceived novelty and ubiquity of the 'system', Tim Cresswell proposes the concept of 'constellations of mobility', which focuses on 'historical senses of movement [being] attentive to movement, represented meaning, and practice, and the ways in which these are interrelated' (Cresswell 2010: 26).

A related question is the link between automobility and other mobilities highlighted by Urry's work but potentially lost in its emphasis on the *car*-system. Within different countries, non-car forms of mobility play distinctive roles within an automobilised system. One might think of Denmark and the Netherlands, where cycling is integrated into city life without longer-distance personal and freight travel being displaced from the system. Yet, the mobilities paradigm does imply the need to pay comparative attention to trends within regions and countries, which may or may not point beyond the 'car-system'. For example, what kinds of 'structures of feeling' might contribute to a transition towards a post-car system? This is an important question given that in transport, as in many other areas, richer people express more environmentalist attitudes while continuing to behave in more environmentally damaging ways.

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The Challenge of Sustainable Transport

History and Key Concerns

The New Mobilities Paradigm is a newcomer to the social sciences, only establishing itself in the twenty-first century[1]. By contrast, what Banister (2008) has called the 'Sustainable Mobility Paradigm' draws upon a more explicit critique of the environmentally problematic implications of contemporary transportation dating back further to the 1970s. The oil crisis that started in 1973 fuelled an ecological critique of transportation. This critique was environmental and moral in nature, criticising the effects that – it argued – mass motorisation had on cultures and communities. Influential work from this period was framed sociologically, philosophically and geographically by writers such as Andre Gorz (1979), Ivan Illich (1974), Henri Lefebvre (2008) and Michel de Certeau (2001).

Groups campaigning on issues of transport and the environment were created or revitalised. In the UK, Cyclebag (which later became a large charity called Sustrans) was formed and the Cycle Campaign Network was created. Across Europe, campaigns forced action to restrict the encroachment of the car into city space. The focus was frequently on issues of local liveability: in the Netherlands for example, the campaign 'Stop the Child Murders' concentrated on child road deaths on residential streets. Change seemed to be in the air. The 1976 UK report *Cycling: a New Deal* produced by the hardly radical Sports Council with the Cycling Council of Great Britain, spoke of 'growing numbers of people who recognise the bicycle as the great liberator' (Sports Council 1976: 2). While this period ultimately came to represent a false start in the case of the UK (Golbuff and Aldred 2011), organisations and ideas active in the 1970s were to return in the 1990s in a modified form.

1990s: Transport Policy Discourse Becomes 'Sustainable'

During the 1990s, the transport policy discourse shifted due to the rising prominence of two discourses – that of sustainability and climate change – which compelled the integration of 'the environment' into many previously resistant areas. Also important in transportation was the increasingly prominent debunking of 'predict and provide' policy, the idea that policy-makers should respond to congestion by building more roads to meet the demand. 'New realists' like Phil Goodwin (who co-wrote an influential report for the UK's Rees Jefferys Road Fund) argued that congestion could never be solved by adding motor vehicle capacity. Instead demand management policies should be followed. In the UK, the thread of this approach can be traced back to the 'Buchanan report' in 1963, which contrary to popular understanding, argued that *either* traditional towns had to be totally redesigned around the car, *or* car use needed to be restricted.

By the mid-1990s, many policy-makers were at least paying lip service to new realist ideas. At the EU level, the voluntary agreement to cut carbon emissions was negotiated with European carmakers amidst rhetoric on the need for the industry to become greener. Following the failure of the agreement to substantially cut emissions a decade later, the EU imposed mandatory albeit weakened regulation (Aldred and Tepe 2011). The threat of climate change meant that ideas about greening transport became imbued with rhetorical urgency. And, in a double-edged development, policy rhetoric moved away from the 'local' and the politics of

local threats (such as injury or local air pollution) to the 'global' stage (seen as appropriate to climate change).

Yet, increasingly policy-makers saw changing local travel behaviour as less politically challenging than for example, restricting air travel (barely tackled, despite tax breaks on kerosene and place-based subsidies for low-cost carriers) and long distance freight (requiring confrontation with business and deeply implicated in the EU vision of a Europe without the friction of distance). Hence, for diverse reasons, a politics of the sustainable city that acts in response to climate change has developed. This is reflected in the UK Con-Dem[2] government's White Paper on Local Sustainable Transport, *Creating Growth Cutting Carbon*, which argues: 'It is the short-distance local trip where the biggest opportunity exists for people to make sustainable travel choices' (Department for Transport 2011:5).

Banister's Sustainable Mobilities paradigm

One of the key proponents of sustainable transport is David Banister, based at the Oxford University Centre for the Environment. Banister summarises his approach in his article *The Sustainable Mobility Paradigm*, in which he questions two of the underlying principles of conventional transport planning: 1) that travel is a derived demand and 2) travel is a cost minimisation (Banister 2008: 73). Banister suggests instead that the activity of travelling may be valued for its own sake and that reliability is more important than the minimisation of travel time. However, he argues that current approaches to transport planning fail to incorporate this as 'many of the methods used cannot handle travel as a valued activity or travel time reliability' (Banister 2008: 237)

Banister adapts a table from Marshall (2001) to contrast the 'conventional' and 'sustainable' approaches. The Sustainable Mobility Paradigm implies a different modelling methodology and a different approach to street design, suggesting that a reconceptualised street space can successfully integrate people and traffic, albeit with car users often at the bottom of the street hierarchy. Importantly, the 'sustainable' approach follows prominent policy paradigms in focusing on the local and city-level mobility, stressing the 'local' against the 'large in scale'.[3] Re-localising environment discourse undoubtedly has positive effects (Slocum 2004). On the other hand, a localised focus may potentially downgrade the city's role as a hub within broader unsustainable networks; for example, through the frequent use of air transport by some citizens or through long-distance energy intensive commuting by car or by high-speed rail.

Table 1: Contrasting Approaches to Transport Planning (reproduced with permission from Banister 2009)

The Conventional Approach Transport Planning and Engineering	An Alternative Approach Sustainable Mobility
Physical dimensions Mobility Traffic focus, particularly on the car	Social dimensions Accessibility People focus, either in (or on) a vehicle or on foot
Large in scale Street as a road Motorised transport	Local in scale Street as a space All modes of transport often in a hierarchy with pedestrian and cyclist at the top and car users at

	the bottom
Forecasting traffic Modelling approaches Economic evaluation	Visioning on cities Scenario development and modelling Multicriteria analysis to take account of environmental and social concerns
Travel as a derived demand Demand based Speeding up traffic Travel time minimisation Segregation of people and traffic	Travel as a valued activity as well as a derived demand Management based Slowing movement down Reasonable travel times and travel time reliability Integration of people and traffic

Banister argues that his approach does not seek 'to prohibit the use of the car, as this would be both difficult to achieve and it would be seen as being against notions of freedom and choice. The intention is to design cities of such quality and at a suitable scale that people would not need to have a car.' (Banister 2008: 74) The difficult question is how one gets to a city where the car is not needed, given that a city designed around the car makes the vehicle seem indispensable – because the infrastructure makes walking, cycling, and using public transport unpleasant, unsafe, and/or slow. Banister suggests that while public acceptability is the key barrier to change, it must be achieved through public participation throughout, phasing in controversial changes. This deliberative and rational approach is in contrast to the work of eco-centric writers such as Mayer Hillman, who has argued that politicians need to make urgent decisions even if these go against public opinion (Rowlatt 2010).

Current Debates Around Sustainable Transport

Banister's development of a sustainable transport approach has led him and others to explore new modelling techniques; for example, in the *VIBAT* series of projects and in the UK *Visions 2030*. These approaches seek to move beyond traditional transport modelling and envision what a society based on different mobility principles would look like. In *Visions 2030*, the project team chose a number of different generic localities (such as a Victorian street, edge of town estate, etc.) and created static and moving images representing what these places might look like under different transportation scenarios. VIBAT UK (Visioning and Backcasting for Active Travel for the UK) starts with the aim of reducing transport emissions and then examines policy pathways to get there, rather than starting with policies and assessing their environmental impact. These approaches bring utopianism and broader social questions into modelling science and have been flagged by Dennis and Urry (2009) as sociologically interesting.

These debates are also shifting to incorporate public health perspectives. By focusing on the benefits of walking and cycling, this has partly counteracted the tendency of policy-makers to promote technological solutions as ostensibly least politically problematic. In the UK, this was inaugurated by the British Medical Association's 1992 publication *Cycling: Towards Health and Safety,* marking a shift from a medical approach focusing solely on cycling as a 'risky' activity. More broadly, the World Health Organisation's Healthy Cities Program helped create coalitions focused on promoting the 'healthy city' across the world.

Traditional transport modelling has included injuries as a transport-related cost, but not the public health benefits of active modes of transport. In contrast, public health writers have argued that the public health benefits of increased walking and cycling must be taken into account when modelling policy effects (Woodcock et al. 2009).

Just as there are different interpretations of the New Mobilities Paradigm, there are tensions within sustainable transport. For example, banning Heavy Goods Vehicles from town centres might have a positive effect on local liveability and on walking and cycling rates. However, in terms of transport emissions, this might be outweighed by increased greenhouse gas emissions resulting from lower vehicle efficiency. This raises the issue of how sustainability should be defined and what role concerns of justice, ethics, and equality should play (Aldred 2011). Issues that arguably deserve more focus within both fields are discussed here. Where, for example, Banister recommends pricing mechanisms, this may have a disproportionate impact on lower-income groups in places such as many cities in the United States where car dependence is high and public transport scarce. When health and well-being are taken into account as well as environmental quality, inequalities may be complex and multifaceted.

Finally, the tendency of 'sustainable transport' to turn into an inaccurate and essentialising shorthand for 'sustainable *modes* of transport' has been questioned. Banister (2008) argued that it is important to take a holistic view. Where trips by 'sustainable' modes increase there may be rebound effects. Journeys may not replace car trips as in London's bike hire scheme where many bicycle journeys replace public transport and walking trips, while others may be additional journeys taken for their own sake (in line with the Sustainable Mobility Paradigm's perspective on journey time). This does not mean such schemes are a bad idea, but that their use should be scrutinised and the different potential benefits, such as increased public acceptability of cycling, examined critically (see also Whitelegg 2009 for a critique of the assumption that high speed rail is 'environmentally friendly').

What can 'Mobilities' Offer Sustainable Transport?

Common Themes

Both Banister's sustainable transport paradigm and the new mobilities paradigm have critiqued traditional transport studies. For sustainable transport writers, the critique is predominantly environmental (and their methods frequently quantitative), whereas the NMP has more in common with the sociological critique of rationality and quantitative reason (and often more environmentally damaging modes are examined with little or no comment on environmental issues). However, there are similarities: both approaches tend to treat transport as embedded in other social systems, hence Banister's emphasis on the importance of looking 'holistically' and considering alternatives to physical movement and the impact of other policy areas on travel choices. In both, travel is meaningful not only in its own terms (not just seen as a time cost), but also for its interrelation with other areas of life. This implies a systemic analysis that does not take travel demand as a given but asks how it might be changed.

It is worth noting that some writers cannot easily be allocated to one or another field. Peter Freund and George Martin (1993, 2007), for example, are two sociologists who draw on

elements from both approaches. Writing before the rise of the mobilities paradigm, they analysed and critiqued the conditions that 'auto space' places upon its users, paying close attention to interactions between identity and inequality (Freund and Martin 1993). Similarly Winfried Wolf's *Car Mania* (1996) embodies both a call for more sustainable transport systems and a political economy analysis of the car system. Many transport geographers (for example, Shaw and Hesse 2010) are also interested in both questions of sustainability and the challenge posed by the new mobilities paradigm.

Additional Foci

One key strength the mobilities literature can add to work on sustainable transport is its focus on identities and issues around normalisation and social exclusion. Some of the most interesting chapters in *Car Cultures* discuss how marginalised groups attempt to reclaim automobility for themselves. Similarly, current work has discussed the problems associated with assuming a cycling identity within a low-cycling context, particularly for certain groups (see for example Steinbach et al. 2011; Aldred 2012). Perhaps under-represented – as frequently happens in social science where the focus is often on the marginal – is a critical analysis of decisions made by people whose consumption choices contribute most to climate change and other environmental problems. However, this would be very much within the scope of the new mobilities paradigm.

The focus on the 'network' may have additional benefits for sustainable transport. It can help bring into focus journeys that may disappear if they fall outside the 'city' framework – for example, two-way long distance journeys along European road networks before food arrives at a city supermarket. The mobilities paradigm potentially provides a critical angle on claims to sustainability made by policy-makers and politicians through for example, bringing in issues of class, race, exclusion and gentrification in the production of the 'sustainable city'. Sociologists and geographers have long critiqued the use of concepts such as 'the environment' as have writers from within the environmental movement itself (see for example Lohmann 2010). This too can enrich the study of sustainable transport.

Finally, the new mobilities paradigm can contribute to the development of methods for studying transport and mobility. Banister's comment that travel time should be seen as meaningful implies the development of new modelling frameworks and the utility of incorporating qualitative approaches focusing precisely on the meaning of transport. Within the new mobilities paradigm, ethnographers have developed the ethnography of 'the passenger', analysing the multiple things that people do while travelling. David Bissell (2010) also discussed the temporary and splintered communities created on public transport. Ethical and citizenship dimensions may be of particular interest, while the rise of bicycle hire and car share schemes may also provide further material for analysing 'the public' as it relates to transportation.

Disagreements

I have outlined differences in emphasis (such as methodology and disciplinary orientation) in this chapter. However, the main disagreement between the two approaches relates to normative positioning. This can be briefly explored in terms of attitudes towards the car, where it has so far been most salient. Miller's view (2001), endorsed by some but not all mobilities writers, is

that cars should be seen not as having essential (negative) properties but rather meanings dependent upon the contexts and cultures within which they are used.[5] Understandably, this anthropological aloofness can seem frustrating for those who start with a normative presumption in favour of sustainability or greening policy (however defined). Miller's take on mobilities directs attention towards cultural specificity, rather than 'the car culture' as more environmentally inclined writers might see it.

However, there are different ways of articulating a cultural approach to the car. The mobilities approach attempts to avoid 'essentialising' the car (or other transport objects), which epistemologically would mean putting the object before the system. Yet this could be compatible with a holistic approach promoted by sustainable transport writers, looking at how transport modes are used and how they fit in with urban transport more broadly. It depends how the interaction between system and object is formulated. Miller (2001: 17) states: 'If the car is understood to be as much a product of its particular cultural context as a force then it follows that prior to an analysis of that larger cultural environment we cannot presume as to what a car might be.' This statement is (perhaps deliberately) ambiguous: does the car as an object not have any essential properties? – is it purely determined by the 'particular cultural context'? Or does it have properties that exert 'force' on such contexts? For example, how specific are those often dominant ideologies of automobility associated with power, strength, money, and danger (Paterson 2007)? From where are they derived?

Perhaps the answer lies in how cars, as particular types of physical objects, are mobilised within similar political and social contexts. In countries with unequal income distribution alongside large-scale private ownership and use of motor vehicles, access to cars is unequal and will remain so, albeit with minor differences.[6] Socially excluded groups (including women, the poor, disabled people, older people, and children) are less likely to have primary car access (and in the case of children, driving is forbidden). Therefore, it is not surprising that meanings of cars are often tied up with inequality, power, and status. Given the 'normal' experience of car crashes, it would be surprising if cars were not associated with danger. Perhaps this is how one can marry culturalism and contingency with a sustainable transport perspective.

Areas for Further Development

I have already indicated some aspects of a sustainable mobilities research agenda. However, there are other areas where the NMP might be employed to develop research on sustainable transport. These could include the sociology of mobilities movements, which has been somewhat neglected by the mobilities literature, but which could contribute to understanding the diversity of mobility regimes or constellations. This might include for example, a comparative analysis of the role of movements in co-producing regionally or nationally specific mobility regimes, including studies of how driver and cyclist organisations have affected the development of policy in different countries. This aspect has thus far been relatively underdeveloped.

A mobilities approach to freight would also represent a fruitful area for further research. Currently, most work within the mobilities paradigm deals with the movement of people rather than things (see Jespersen and Drewes 2005 for an exception). In this area, there

could be useful crossovers with work done on the sociology of food. Movements of other 'things' might include the study of how water is transported and used, bringing into focus cultural meanings of water and wastewater, drawing on Elizabeth Shove's (2004) work on cleanliness and convenience. Broader questions about how we conceptualise regimes or constellations of mobility could lead to more in-depth theorisation of different levels or moments within such assemblages, and how these change over time. Finally, the development of a sociological analysis of transport modelling could be another area of exploration. Given the shift from policy modelling to visioning, it could contribute to the development of a theoretically informed and self-critical mixed-methods approach to sustainable transportation.

Conclusion

This chapter has briefly outlined some key components of what has become known as the New Mobilities Paradigm, paying particular attention to the work of John Urry. It has argued that the focus on networks, mobilities, identities and systems has synergies with work on sustainable transport. It has also provided additional foci and suggested areas for further development. The key disagreement between the two approaches is in terms of normativity. However, I have suggested that a normative approach that resists essentialising the individual transport object is possible and could draw together the two approaches. Finally, I would suggest that sustainable transport can remind new mobilities scholars of the importance of environmental questions, helping to guard against a tendency in some (but by no means all) of the mobilities literature to celebrate mobilities uncritically or to downgrade environmental considerations.

Notes

1. In this chapter I focus on the work of Urry because he has been so influential, in particular his book Mobilities. This book has been particularly influential: I am nevertheless aware that other work by Urry may formulate the approach differently, for example with reference to chaos theory.

2. So-called because it is led by the Conservatives with the participation of the Liberal Democrats.

3. There is an interesting tension between the city as local and the city as large-scale. Also, cities are becoming part of reconstituted conglomerations as with the Øresund/Öresund Region straddling Denmark and Sweden.

4. One reason for this is scepticism about assuming the existence of a 'car culture' sometimes is portrayed so negatively it seems bizarre that anyone would drive.

5. In poor countries, access to cars is of course also unequal – only the rich drive. However, the much lower numbers of cars overall creates a very different context of auto mobility.

References

Aldred, R. (2010) 'On the Outside?: Constructing Cycling Citizenship', *Social & Cultural Geography*, **11**, 1, pp. 35 – 52.

Aldred, R. (2011) 'Roads to Freedom', *Red Pepper*, www.redpepper.org.uk/roads-to-freedom/ [June 2011].

Aldred, R. (2012) 'Incompetent, or too competent? Negotiating everyday cycling identities in a motor dominated society'. Forthcoming in *Mobilities.*

Aldred, R. (2012a) 'The Commute'. Forthcoming in *Routledge Handbook of Mobilities.*

Aldred, R. and Jungnickel, K. (2012), 'Constructing Mobile Places Between 'Leisure' and 'Transport' : A Case Study of Two Group Cycle Rides', *Sociology*, Published online March 15, 2012, doi: 10.1177/0038038511428752, http://soc.sagepub.com/content/early/2012/03/14/0038038511428752.abstract

Aldred, R. and Tepe, D. (2011) 'Framing scrappage in Germany and the UK: from climate discourse to recession talk?', *Journal of Transport Geography* **19** (6), pp. 1563–1569

Banister, D. (2005) *Unsustainable Transport: City Transport in the New Century*. London: Routledge.

Banister, D. (2008) 'The Sustainable Mobilities Paradigm', *Transport Policy*, **15**, 2, pp. 73-80.

Banister, D. (2009) 'Recycling Cities: Urban Planning and Spatial Form', Keynote paper for presentation at the Velo-City 2009 Conference, Brussels 12th May. http://www.velo-city2009.com/assets/files/paper-Banister-Recycling-Cities-plenary1.pdf

Barker, J. (2009) 'Driven to Distraction?: Children's Experiences of Car Travel', *Mobilities*, **4**, 1, pp. 59-76.

Bissell, D. (2010) 'Passenger Mobilities: Affective Atmospheres and the Sociality

of Public Transport', *Environment and Planning D: Society and Space*, **28**, pp. 270-289.

Böhm, S., Jones, C., Land, C. and Paterson, M. (2006) 'Impossibilities of Automobility', pp. 3-16, in S. Böhm, C. Jones, C. Land, and M. Paterson (eds), *Against Automobility*. Oxford: Blackwell.

Bonham J. (2006) 'Transport: Disciplining the Body that Travels', pp. 57-74, in Böhm, S., Jones, C., Land, C. and Paterson, M., *Against Automobility*. Oxford: Blackwell.

British Medical Association (1992) Cycling: Towards Health and Safety. Oxford: Oxford University Press.

Buchanan, C. (1964) *Traffic in Towns* (abridged edition). London: Penguin.

Büscher, M., Urry, J. and Witchger, K. (eds) (2011) *Mobile Methods*. Abingdon: Routledge.

Butcher, M. (2011) 'Cultures of Commuting: The Mobile Negotiation of Space and Subjectivity on Delhi's Metro', *Mobilities*, **6**, 2, pp. 237-254.

Castells, M. (1996) *The Network Society*. Oxford: Blackwell.

Cresswell, T. (2010) 'Towards A Politics of Mobility', *Environment and Planning D: Society and Space*, **28**, pp. 17-31.

Cresswell, T. (2011) 'Mobilities 1: Catching Up', *Progress in Human Geography*, **35**, 4, pp. 550-558.

Dant, T. and Martin, P. (2001) 'By Car: Carrying Modern Society', pp. 143-158, in J. Gronow and A. Warde (eds) *Ordinary Consumption*. London: Routledge.

De Certeau, Michel. (2001) *The Practice of Everyday Life*. University of California Press: California.

Dennis, K. and Urry, J. (2009) *After the Car*. Cambridge: Polity Press.

Department for Transport (2011) *Creating Growth, Cutting Carbon: Making Sustainable Local Transport Happen*, London: DfT

Edwards. P., Roberts, I., Green, J. and Lutchmun S. (2006) 'Deaths from injury in children and employment status in family: analysis of trends in class specific death rates.' *British Medical Journal* **333** (7559), pp. 119.

Fincham, B., McGuinness, M. and Murray, L. (2010) *Mobile Methodologies*. Basingstoke: Palgrave Macmillan.

Freund, P. and Martin, G. (1993) *The Ecology of the Automobile*. Montreal: Black Rose Books

Freund, P. and Martin, G. (2007) 'Hyperautomobility, the Social Organization of Space, and Health', *Mobilities*, **2**, 1, pp. 37-49

Gartman, D. (2004) 'Three Ages of the Automobile: the cultural logics of the car', *Theory, Culture & Society* **21 (**4-5), pp. 169-195

Garvey, P. (2001) 'Drinking, Driving and Daring in Norway', pp. pp. 133–152, in D. Miller (ed.) *Car Cultures*. Oxford: Berg

Gilroy, P. (2001) 'Driving while Black', pp. 81–104, in D. Miller (ed.) *Car Cultures*. Oxford: Berg.

Golbuff, L. and Aldred, R. (2011) *Cycling Policy in the UK: A Historical and Thematic Overview*. London: University of East London.

Goodwin. P. (1991) *Transport: the New Realism*, University of Oxford: Transport Studies Unit.

Gorz, A. (1979) *Ecology as Politics*. London: Pluto Press.

Illich, I. (1974) *Ecology and Equity*. London: Calder and Boyers.

Jensen, O. (2006) ''Facework', Flow and the City: Simmel, Goffman and Mobility in the Contemporary City', *Mobilities*, **1**, 2, pp. 143-165.

Jensen, O. (2010) 'Negotiation in Motion: Unpacking a Geography of Mobility', *Space and Culture,* **13**, 4, pp. 389-402

Jespersen, P. and Drewes, L. (2005) 'Involving Freight Transport Actors in Production of Knowledge - Experience with Future Workshop Methodology', pp. 89-104, in T. Thomsen, L. Nielsen and H. Gudmundsson (eds) *Social Perspectives on Mobility*, Aldershot: Ashgate.

Jungnickel, K. (2005) *73 Urban Journeys,* UK: Studio INCITE, Goldsmiths, University of London, UK. Accessed 30th March 2012, www.73urbanjourneys.com

Kaufmann, V. (2010) 'Mobile Social Science: Creating a Dialogue among the Sociologies', *The British Journal of Sociology*, **61**, Issue Supplement s1, pp. 367–372.

Koshar, R. (2004) 'Cars and Nations: Anglo-German Perspectives on Automobility Between the World Wars', *Theory, Culture, and Society Special Issue*, **21**, 4-5, pp. 121-44.

Laurier, E., Lorimer, H., Brown, B., Jones, O., Juhlin, O., Noble, A., Perry, M., Pica, D., Sormani, P., Strebel, I., Swan, L., Taylor, A., Watts, L. and Weilenmann, A. (2008) 'Driving and 'Passengering': Notes on the Ordinary Organization of Car Travel', *Mobilities*, **3**, 1, pp. 1-23.

Lefebvre, H. (2008) *Critique of Everyday Life, Volume 2: Foundations for a Sociology of the Everyday*. London: Verso.

Lohmann, L. (2010) 'Neoliberalism and the Calculable World: the Rise of Carbon Trading', pp. 77-93 in K. Birch and V. Myhknenko (eds) *The Rise and Fall on Neoliberalism: the Collapse of an Economic Order?* London: Zed.

Marshall, S (2001) The challenge of sustainable transport. In: Layard, A and Davoudi, S and Batty, S, (eds.) **Planning for a sustainable future.** Spon Press: London.

Merriman, P. (2007) *Driving Spaces: A Cultural-Historical Geography of England's M1 Motorway*, Oxford: Blackwell.

Miller, D. (2001) *Car Cultures*. Oxford: Berg Publishers.

Paterson, M. (2007) *Automobile Politics: Ecology and Cultural Political Economy*. Cambridge: Cambridge University Press.

Pooley, C., Turnbull, J., and Adams, M. (2005) *A Mobile Century? Changes in Everyday Mobility in Britain in the Twentieth Century*. Aldershot: Ashgate

Rajan, S. (2006) *The Enigma of Automobility: Democratic Politics and Pollution Control*. Pittsburgh: University of Pittsburgh Press.

Richardson, T. and Jensen, A. (2003) 'Linking Discourse and Space: Towards a Cultural Sociology of Space in Analysing Spatial Policy Discourses', *Urban Studies*, **40**, 1, pp. 7–22.

Roberts, I. (2007) Formula One and Global Road Safety. *Journal of the Royal Society of Medicine* **100** (8), pp. 360-362

Rowlatt, J. (2010) *Doomed by Democracy?* Transcript, BBC Radio 4, available at http://news.bbc.co.uk/nol/shared/spl/hi/programmes/analysis/transcripts/24_05_10.txt, accessed 19th March 2012.

Shaw, J. and Hesse, M. (2010) 'Transport, Geography and the 'New' Mobilities', *Transactions of the Institute of British Geographers*, **35**, 3, pp. 305–312.

Shove, E. (2004) *Comfort, Cleanliness and Convenience: The Social Organization of Normality*. Oxford: Berg.

Skinner, D. and Rosen, P. (2007) 'Hell is Other Cyclists: Rethinking Transport and Identity', pp. 83-96 in D. Horton, P. Rosen and P. Cox (eds) *Cycling and Society*. Aldershot: Ashgate.

Slocum, R. (2004) 'Polar Bears and Energy-efficient Lightbulbs: Strategies to Bring Climate Change Home', *Environment and Planning D: Society and Space*, **22**, pp. 413-438.

Sports Council with Cycling Council of Great Britain (1976) *Cycling: a New deal*. London: Sport Council/Cycling Council of Great Britain (booklet and leaflets).

Steinbach, R., Green, J., Datta, J. and Edwards, P. (2011) 'Cycling and the City: A Case Study of How Gendered, Ethnic and Class Identities can Shape Healthy Transport Choices', *Social Science and Medicine*, **72**, 7, pp. 1123-1130.

Urry, J. (2000) *Sociology Beyond Societies: Mobilities for the Twenty-First Century*. London: Routledge.

Urry, J. (2006) 'The System of Automobility' *Theory, Culture & Society* **21** (4-5), pp. 25-39.

Urry, J. (2007) *Mobilities*. Cambridge: Polity.

Urry, J. (2008) 'Climate Change, Travel and Complex Futures', *British Journal of Sociology*, **59**, 2, pp. 261–279.

Urry, J. (2010) 'Consuming the Planet to Excess', *Theory, Culture and Society*, **27**, 2-3, pp. 191-212.

Watts, L. (2008) 'The Art and Craft of Train Travel', *Social and Cultural Geography*, **9**, 6, pp. 711-726.

Whitelegg, J. (2009) 'On the Wrong Track: Why High-Speed Trains are not such a Green Alternative.' *The Guardian*, 29 April.

Wolf, W. (1996) *Car Mania*. London: Pluto.

Woodcock, J., Edwards, P., Tonne, C., Armstrong, B., Ashiru, O., Banister, D., Beevers, S., Chalabi, Z., Chowdhury, Z., Cohen, A., Franco, O., Haines, A., Hickman, R., Lindsay,

G., Mittal, I., Mohan, D., Tiwari, G., Woodward, A, and Roberts, I. (2009) 'Public health benefits of strategies to reduce greenhouse-gas emissions: urban land transport', *The Lancet*, **374**, 9705, pp. 1930–43.