DELIVERING SUSTAINABLE TRANSPORT

A Social Science Perspective

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DELIVERING SUSTAINABLE TRANSPORT

A Social Science Perspective

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INVESTOR IN PEOPLE

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Amanda Root
Cheltenham, 2002

MORPHING MOBILITY: A METHODOLOGICAL CRITIQUE

Amanda Root, University of Gloucestershire, UK

> If the first hope of the democrat is the hope of building in the zone of overlap between the conditions of practical progress and of individual emancipation, the second hope is that this work respond to the felt needs and aspirations of ordinary men and women. Democracy cannot go forward as the unrecognised gift of a cunning history to a reluctant nation.
>
> Roberto Mangabeira Unger, *Democracy Realized*

> Real progress in traveller behaviour research will be achieved when it can be translated into political gains. An important research task is the development of methods and data capable of providing signposts to mapping policy and strategy, which evolves from the study of traveller behaviour into the decision space of stakeholders who are influential in the political arena.
>
> David Hensher, *Understanding Travel Behaviour*

In the last few years many social scientists have developed the idea that spatiality consists not only a physical dimension, but that it also consists of a social construction, i.e. that social factors shape the use and understanding of space (e.g. Bhabha (1990); Foucault, (1986); Harvey, (1989); Lefebvre, (1991); Massey, (1993) Lash and Urry (1993), Urry 2001a, 2001b). Yet these analyses have rarely been linked up with the practice of transport research, nor have they had a major impact in transport policy discussions[1]. Most transport research has ignored the ways that spatiality has been interpreted elsewhere in the social sciences. Instead, transport studies (which includes transport planning and economics) has, at its core, econometric models of traveller behaviour based on 'methodological individualism' and a view of transport as if it is just an exchange-based transaction (Urry, 2001a, 24). This methodology largely excludes issues that cannot be quantified as variables. Largely because of such methodological limitations transport studies excludes many of the concerns of the

[1] Amongst the few that have made this link are Sheller and Urry (see Chapter 12), Turrentine (see Chapter 6 below) and Whitelegg (1997).

public about mobility and related issues. (For example, UK roads protests raised some formerly marginalised concerns (Stokes and Taylor, 1994) as does Davis, (1992) on how safety campaigns primarily cater for car users, not pedestrians or cyclists). The absence of a variety of ways of understanding the social organisation, relevance and significance of mobility and spatiality can also be argued to have contributed to transport policy being the Cinderella of government departments[2], to it being frequently outside key areas of 'decision space' of political stakeholders and to the consistent failure to link progressive democratic aspirations to transport provision (Whitelegg, 1993, 1997; Urry, 2001a).

This book contains a range of examples of different methodologies that begin fill this gap. Each chapter explores how a particular social science methodology – such as ethnography, participant observation or discourse analysis – can be used to provide new ways of seeing transport problems and policies. In this introduction, I will consider the dominance of the exchange concept (for example, in the transport context, a situation where individuals pay a fare to get from A to B). This casts transport thinking into the mould of an individualism of approach that limits and distorts policy-relevant research. It also prevents the understanding of travel as an institutional practice, (e.g. as influenced by groupings such as legislatures, mass media, bureaucracies, political parties) and as a cultural phenomenon (i.e. seeing the meanings and demands for mobility as fashioned out of a wide range of everyday aspirations, desires, fashions and inequalities).

In the rest of this Introduction, I will examine some key concepts and practices from transport studies. These are: derived demand; cost benefit analysis; predict and provide; and seeing transport demand as determined by economic growth. Alternative approaches will then be suggested using the theories of Unger and others. These theories will be used to show how mobility interests and cultures are established in institutional contexts and that they can be changed. Finally, the chapters of this book will be reviewed to show how they can provide new material for debate and policy innovation.

TRANSPORT ECONOMICS AND PLANNING

Transport as derived demand

The idea that transport is a derived demand, that is we do not seek travel for itself but because of what it enables us to do, is repeated in virtually every transport economics textbook ever written. However, the idea of derived demand does not explain why some people travel for sheer pleasure. For instance, it does not explain the practice of joyriding, nor does it explain the addition of extra miles to journeys just for fun, the so-called phenomenon of excess travel (Mokhtarian and Salomon, 1999, 27). Similarly, if derived demand were the only factor at play, then it would be reasonable to expect people to seek to minimize the time spent in travel. Yet, when increased speed makes reduction in journey times possible, for instance, because of the construction of a new light rail system, many people tend to reduce gains by

[2] However, perhaps because of public disquiet, recent policy announcements in the UK have suggested that transport is to be given higher priority: spending is to be increased and planning procedures speeded up (Clark, 2002).

making longer journeys (Ker and Tranter, 1997, 11). The concept of derived demand also does not explain why many people spend huge amounts of money on their cars, or invest time in personalising them, when cheaper or unadorned models would serve them equally well for getting from A to B. Personalisation and luxury in modes of transportation has been linked to identity, status, glamour, sex appeal, class, race and gender differentiation and so on, rather than the notion of transportation as a derived demand (Root, 2000).

The concept of derived demand presupposes that individuals operate as rational agents, seeking to maximise their personal well being in a utilitarian and economically consistent fashion. This concept is inadequate as a model of culture, i.e. the meanings accorded to daily experience, and of consumption, choice and of social change. The premises of individual actors operating according to rational decision-making processes is fixed to one point in time, limited in its understanding of cultural and institutional contexts and reveals only part of a much more complex picture (see, for instance, the discussion of different types of choice making in Hargreaves Heap, 1997). This individualistic and rationalistic view of how people make decisions is the nucleus of another central tool of transport planning, that of 'cost benefit analysis,' to which we now turn.

Cost Benefit Analysis

Cost Benefit Analysis (CBA) is widely used to work out whether road building is justified or, alternatively, to cost public transport. CBA is widely used by central and local government in Europe and the UK; for example, it was used to cost the M1 motorway and the Victoria Line underground railway. Criticisms of CBA have already been voiced (e.g. Department of Transport, 1994, 21), but because these challenges are largely ignored and CBA is still widely taught and used, it is important to examine it here.

CBA categorises resources committed to a project as economic costs. They are measured as a marginal cost – that is, the costs of producing another unit of output, which is, in turn, determined by economies of, or returns to, scale. CBA compares these costs and benefits, and recommends that a project be undertaken if the total economic benefit exceeds the total cost.

CBA usually involves the following steps,

1. Define the appraisal case, that is the arguments for doing the project, as well as the alternatives and the base case (which might involve doing nothing or doing a minimum).

2. Determine the project life (using the relevant technical, market or economic criteria).

3. Determine the key impacts of the project.

4. Determine the main parties affected by the project.

5. Quantify the key impacts over time.

6. Cost, or monetise the key impacts over time.

7. Determine the appropriate interest rate (this is usually done using social opportunity cost or social time preference methods).

8. Compare the discounted costs and benefits using an appropriate measure such as Net Present Value (that is, the discounted value of future income from a particular investment less the discounted value of expected costs) or Benefit Cost Ratio (benefits relative to costs).

(Adapted from Preston, 1998)

Many questions are raised by each of these stages, mainly because of the economic discourse that makes it appear possible to define the 'key impacts' of the project, point 3 and, point 4, the 'parties affected by the project' (where would the boundaries be drawn in relation to climate change or other environmental pollution?) Behind such assumptions there is often the idea of externalities, the name given to the effects of production or consumption on third-parties. However, there is no accepted or agreed method for assessing externalities (See Bickel et al, 1997).

This list, at Point 6, also contains an assumption that costs can be monetarised, an assumption that has been challenged by environmentalists (Jacobs, 1991) and others who would argue that the environmental and social dislocation and other negative impacts caused by road schemes cannot be costed (Smith et al, 1998).

The idea that discounted costs and benefits can be assessed is also questionable (point 8). There is a substantial debate which discusses discount rates and a large amount of controversy about them, which I will not rehearse here (see Button, 1993), except to note that there is no agreement on how to calculate them, so the figures used in CBAs must be highly provisional.

These assumption-ridden concepts are, along with other factors, marshalled into models that are used by policy-makers to determine how to spend huge amounts of transport investment funding. The three main forms of CBA appraisals practised in the UK are Social Cost Benefit Analysis, Restricted Cost Benefit Analysis and Financial Appraisal. The Restricted Cost Benefit Analysis, the latter is the same as Social Cost Benefit Analysis except that user benefits are not included. A typical formula used for Social Cost Benefit Analysis is,

$$NPV_s = \sum_a \sum_{i=0}^{N} \frac{(R_{ia} + UB_{ia} + NUB_{ia} + E_{ia} - OC_{ia} - K_{ia})}{(1+r)^1}$$

Where UB_{ia} = User benefits in year i accruing agency a, NUB_{ia} = Non user transport benefits in year i accruing to agency a, E_{ia} = External benefits in year i accruing to agency a (Preston, 1998).

Here we see equally problematic concepts such as 'user benefits'. These are usually formulated in terms of 'time saved' (Button, 1993), traditionally for the motorised traveller,

not for the pedestrian or cyclist. Of course, time cannot be 'saved' in the way implied by such terminology, it can only be spent in one way or another. (See Whitelegg (1993) for a discussion of the related concept of 'time pollution' and Urry, (2001a), chpt. 5, for a discussion of different concepts of time). The 'benefits' included here are rarely, if ever, formulated in terms of factors that do not feature in the modelling lexicon, such as the health benefits of non-motorised transport.

Financial Appraisal works as follows:

$$NPV_{fa} = \sum_{i=0}^{N} \frac{(R_{ia} - OC_{ia} - K_{ia})}{(1+r)^{I}}$$

Where R_{ia} = revenue in year i accruing to agency a, OC_{ia} = operating cost in year i accruing to agency a, K_{ia} = capital cost in year i accruing to agency a, r = interest rate (e.g. 0.06), N = project life (e.g. 30) (Preston, 1998).

This model contains fewer non-financial variables but still begs lots of questions about how variables such as interest rates and project life will be defined for the purposes of the CBA, when neither element has a definitive or fixed value. Table 1.1 sheds some light on how the material that is usually marshalled to fill these variables.

As we have seen, CBA procedures are filled with answers that assume unitary individuals giving consistent, rational answers that portray, at one moment in time, choices they make, or would make, over an extended period. This practice of making assumptions extends into many different areas of transport studies. For example, revealed and stated preference studies often contain similarly simplistic assumptions about willingness to pay or demand elasticities, derived from single research surveys. Different kinds of models for instance, logit, nested logit, probit and multinominal logit, provide an increased level of sophistication, but their economistic assumptions still limit their usefulness. For instance, the complex trading between components of some travel choices can be lost even in some nested logit models (for a critique of such approaches, see Hensher, 1998, 13).

CBA models often presume a point of equilibrium, to calculate factors like reduced time of travel or reduced accidents. Yet this point is often, in practice, impossible to stipulate or arbitrarily imposed. Phil Goodwin has noted the difficulties of forecasting any point of equilibrium, 'the most widely used analytical tools have *nothing* to say about sequence and time scale, because they treat end-states, notional equilibrium conditions which may never apply at all, but even if they will apply, we cannot say when' (emphasis in original), (Goodwin, 1997, 10).

Predict and Provide

There is an adjoining sub-discipline, of transport planning approaches that has been dubbed 'predict and provide', in a phrase coined by Susan Owens (Owens, 1995). The premise of predict and provide is that the transport professionals will first forecast how much traffic there

will be and then that they will build enough road space to accommodate it. CBA is oriented towards market-based solutions, such as road pricing. Predict and provide, by contrast, is usually based on the idea of manipulating the supply side of transport infrastructure, assuming that the demand side is fixed.

Incidence group	**Costs**	**Benefits**
Light rail operator	Construction costs Operating cost	(Revenue from former bus users) Revenue from other users (Grants)
Light rail users		
Bus users	Increased time of travel Increased cost of travel	
Car users		Reduced time of travel Reduced cost of travel net of tax savings (Tax savings) Reduced accidents
Bus operators	(Revenue from former bus operators)	
Local authority	(Grants) (Increased subsidy)	
Central Government	(Grants) (Tax savings)	
Householders	Environmental costs (Higher property prices)	Environmental benefits Increased employment
Property owners		(Higher property prices)

Table 1.1, the Costs and Benefits of a Light Rail Scheme – Variable Demand
(Preston, 1998. Brackets indicate optional costs and benefits).

However, the philosophy of predict and provide has been shown to be flawed. As the Standing Advisory Committee on Trunk Road Assessment (SACTRA) found (and as common sense tells the rest of us) that there is a phenomenon involving the use of additional road space to make extra trips (SACTRA, 1994). This pattern – of extra road space generating additional journeys in some circumstances – is known as 'induced traffic'.

Induced traffic means that the demand for road space will almost invariably outstrip supply (Goodwin, 1996). Thus SACTRA's report on induced traffic showed that we cannot build our way out of traffic congestion (SACTRA, 1992; Goodwin, op cit.). The Government's acceptance of this report was a seismic leap forward in terms of accepting that the predict and provide era had come to an end (Department of Transport, 1994; Goodwin, 1997, Owens, 1995).

Transport determines economic growth

Transport levels are linked to economic growth: there is evidence of a rise in the number of trips when a period of economic growth is occurring (DETR, 2001a). Conventional transport planning wisdom takes this insight further and asserts that transport infrastructure, usually roads, causes economic growth. For example in 1989 the Department of Transport stated, in *Roads for Prosperity*,

> The expanded programme will improve the inter-urban motorway and trunk road network by reducing journey times and increasing the reliability of road travel. It is a vital further boost for British industry. The measures proposed will provide the means to improve the country's economic geography, increasing opportunities for the less-favoured areas, assisting urban regeneration and helping the more prosperous areas to cope with growth.
>
> (Quoted in Whitelegg, 1994, 7)

These assertions of a causal link between economic growth and 'the reliability of road travel' have been challenged on a number of grounds and by a variety of groups and individuals. It is not my intention to rehearse these arguments here, as the curious reader can investigate these debates in depth (see, for example, Whitelegg, 1994; SACTRA, 1997, 1999 and DETR, 2000). Instead, I want to make the point that the kind of link that is assumed here is often law-like and deterministic in ways that goes beyond the evidence. There is often a belief that transport infrastructure is a necessary precondition for economic growth, which is not corroborated by the evidence (SACTRA, 1999; Whitelegg, 1994).

ALTERNATIVE UNDERSTANDINGS OF TRANSPORT

David Hensher has developed a modelling procedure that tries to allow for a variety of different levels and complexities (Figure 1.1). Hensher's model is undoubtedly a huge step forward in terms of acknowledging complexity and sophistication, and it embodies the recognition that models are, themselves, vehicles for debate because of the assumptions that they contain. This is an example of a transport planning practice that is reflexive about the conceptual model it uses, as a prerequisite for improving modelling procedures and frameworks (Scott Armstrong, 2001).

However, what is missing in this type of paradigm is the inclusion of systematic understanding of the ways in which change can happen beyond and outside the exchange model of transport. There is still a need to develop an understanding of the cultural and institutional structures that play a role in determining what is acceptable, what is 'chosen' and what can be altered. Developing such a notion depends, partly, on seeing how language or models are part of a set of practices that either represents 'the real' as if it were fixed or unambiguous, or recognises the ways in which language itself is part of cultural practices that shape meanings. If we take the latter position, we are much more likely to see how transport models can reflect only part of what exists and that there is a need to develop an

understanding of the context of choices as well as just describe the choices themselves. Institutionalist theorists March and Olsen also describe this:

> Within an institutional framework, 'choice', if it can be called that, is based more on a logic of appropriateness than on the logic of consequence that underlies conceptions of rational action.
>
> (March and Olsen, 1996, 251/2)

Thus the idea of choice as part of a programme for planning what people might want from transport, but as revealed by most econometrics models, is questionable.

Actions taken by agents, Consumers/managers/politicians	Strategic planning
↓	
Perceived positions of alternative(s) on attributes	Psychophysics
↓	
(E)valuation of alternative's attribute positions	Utility formation
↓	
(E)valuation of holistic alternatives	Utility function
↓	
Decision to choose, wait or never choose	Choice process
↓	
If choose, which alternative	Share, demand, etc.

Figure 1.1 Functional relationships implied by complex decision-making framework (Hensher, 1998)

This distinction, between language – and hence research practices - as a simple mirror of 'the real' or as part of a discursive practice, as narratives with material effects, can be seen in two philosophical revolutions developed by the Ludwig Wittgenstein. Wittgenstein first outlined what later become know as logical positivism, that is the view of language as a pointer, or reference, to the real. Logical positivism suggests that the world is referred to via language which neutrally reflects objects and facts. Unsurprisingly, this is known as the picture theory of language. For example, take the following assertion from his exposition of this position, in the *Tractatus Logico-Philosophicus* that describes language as if it is just a tool for pointing: '4.022 A proposition *shows* its sense', (Wittgenstein, 1976, 21,25, emphases in original).

Twenty-seven years later, Wittgenstein wrote in the Preface to a new book, *Philosophical Investigations*:

> What 'determining the length' means is not learned by learning what *length* and *determining* are; the meanings of the word 'length' is learnt by learning, among other things, what it is to determine length.
>
> (Wittgenstein, 1986, 225, emphases in original).

Thus if meaning comes from cultural context, then transport models cannot capture all of 'the real' as if what they depict could attain objectivity and value-free status. The need is to be aware of the contexts in which particular models are applied and thus to be aware of the constraints and particular sets of meanings and practices that are implicit in them. Thus econometrics or CBA do not just describe 'real' situations, they represent a culturally specific appropriation of those situations along with assumptions generated by the modelling techniques. The information they generate is partial and relative, even given much greater levels of sophistication in the modelling techniques, not absolute. This is an important point. Some of our culture's most revered concepts such as 'objectivity', 'unbiased', 'value-free' and 'scientific' take their legitimacy from particular language games, such as the idea that facts and values are entirely separate[3].

In mainstream transport studies and in allied disciplines such as econometrics, it is as if Wittgenstein's second philosophical revolution has never happened. These disciplines assume that the econometric models that they build to measure transport demand are representing empirically given objectivity, with derived demand as discrete variables, separate from the desire for mobility as a social and temporal phenomenon or construct. But these transport planning and engineering practices are specific to, in Wittgenstein's terminology, certain language games, they are self-fulfilling in terms of representing certain cultural and political practices and then catering for them.

If the cultural and institutional basis for models for transport is recognised, then it is easier to develop a vision for how and where transport could change[4]. Institutional factors describe what, in the last instance, can be changed or transcended. For instance, using a theoretical approach that could loosely be called institutionalism, and which has been developed with reference to social institutions electoral politics or property rights, Roberto Mangabeira Unger writes:

---

[3] The argument that science is institutionally located and so its knowledge is culturally specific can be made through the use of the 'linguistic turn' in philosophy as I have done here, (e.g. Wittgenstein:1986) or though analysing the sociology of scientific knowledge (e.g. Kuhn, 1996) or through what can loosely be called a post-structuralist approach (e.g. Latour, 1993).

[4] One version of this understanding of analysing environmental, political and environmental change has the family name of ecological modernisation, although this includes a wide variety of different approaches. The popularised narrative that supports ecological modernisation broadly supports the view that economic progress and environmental protection are compatible, a reading that has been used by Prime Minister Tony Blair and others (see, for example, Blair, 2000). There are many critiques of various versions of ecological modernisation and I cannot rehearse them here, but it should be noted that its generally optimistic prognoses do not seem to apply easily to the developing world, nor do they contain a model of how transport development can be harmonised with environmental protection (e.g. Murphy, 2000).

> …a practice of social and historical explanation may fully acknowledge the tenacity of institutional orders; it need not degenerate into a voluntarist fantasy about the unlimited malleability of social arrangements. For even when we affirm the ramshackle character of institutional arrangements, we can also acknowledge how, once established, they gain a second-order necessity. The conceptions of group identity and group interest that they sustain begin to reconfirm them. Organisational and technological styles that cannot readily be changed, without risks and costs of transition, take them for granted. Influential doctrines, expounded as scientific insight in the universities of the leading powers, lend them a semblance of naturalness and necessity. Nevertheless, they remain, in the end, neither natural nor necessary.
>
> (Unger, 1998, 23)

In other words, it is time to move beyond the idea that interests are fixed and immutable. There are many explanations of the idea of a vision or the secular idea of transcendence in social terms, but such an approach has not been widely explored in relation to the methodology of transport studies.

Conventional transport studies models do not contain a vision of what holds communities, aspirations together and what creates transformative possibilities. This question brings us back to the challenge of this book, that of posing the difficult questions of assessing what different groups want from transport using methodologies derived from the social sciences. Each of the pieces that follows poses that question in a way that includes contexts and that recognises that groups' interests are often tied to particular institutional practices, so are changeable.

Using a fuller range of the social sciences to analyse transport means that complex cultural changes can be analysed and interests that may have seemed fixed and opposed can be re-positioned[5]. The chapters that follow open up new possibilities to challenge old means of holding interests as fixed and antagonistic and they provide the chance to move beyond old patterns and antagonisms, such as that between the traveller and the non-traveller.

NEW DIMENSIONS IN MOBILITY DISCOURSES

This book, perhaps unusually for one that is looking at new methods for understanding transport in the context of arguing for sustainability, is starting from the recognition that most of us reading this enjoy some aspects of consumerism and gain from the opportunities for emancipation and new identities that contemporary forms of travel, communications and trade can bring. It would be foolish to try to deny the pleasures and benefits, such as new insights into different cultures, as well as greater scope for combining domestic responsibilities and

[5] The various chapters of this book show that interests are not fixed and given except at the level of institutional practice. Interests can be changed by widening popular alliances around issues that are bigger than 'quality of life' issues - whether individualised or not – (see Jacobs, 1999 for a discussion of how environmental politics can be related to individuals' aspirations) versus the conventional defence of transport as a corollary of economic growth (e.g. Department of Transport, 1989).

paid work, that modern forms of travel can confer (Castells, 1997; Hewitt, 1993; Urry, 2001a; 2001b; Ward, 1991).

It would be equally foolish to try to deny the negative social and environmental consequences current ground and air traffic levels (Bendixson, 1977; Illich, 1974; Royal Commission on Environmental Pollution, 1994; 1997; Root, 2000; Whitelegg, 1993). Transport policies, at least in industrialised North Atlantic rim countries, often have seemingly contradictory goals – involving building more roads at the time as moralistic appeals to individuals to cut down on their car journeys (DETR, 1998). Consumers of transport are also frequently contradictory – and their ambivalence needs to be given more recognition (Mcnaghten and Urry, 1998). If judged by the criteria of curbing the continuing growth in travel these policies – and some people's best intentions - are spectacularly unsuccessful, except, perhaps, amongst a tiny minority, some of whom are able to reduce the need to travel by using information technology (DETR, 2001a; DETR, 2001b).

Potential alliances around sustainability are frequently stymied by technocratic debates about what the exact goals or targets should be. Hence, in what follows, sustainability will be given a relatively populist definition and used as a shorthand term for 'environmental space' which refers to 'the area that human beings can use in the natural environment without doing lasting harm to essential characteristics' (Sachs et al, 2000, 12). This covers utilisation of natural resources not being greater than regeneration rates, discharge of materials not being greater than environmental capacity to absorb them; utilisation of non-renewable resources being kept to a minimum and the time factor in human intervention being in balance with that of natural processes (op cit.). Transportation is the largest end-use energy sector (see, for instance, Peake, 1994; Royal Commission on Environmental Pollution (RCEP) 1994; Sperling and Shaheen, 1995; von Weizsacker et al, 1998). Transport is thus one of the most important sectors that need reform if sustainability is to be achieved.

The following chapters begin to build narratives and to provide material for debates that can be used to disrupt the current transport planning frameworks. The first section 'Globalisation, Markets and Regulation – the Need for New Paradigms' deals with existing transport planning paradigms, and critiques them and their limitations. The chapter by Cathy McKenzie takes a broad perspective and looks at how globalisation and other changes in economic relationships underpin transport. McKenzie argues that transport cannot be understood independently of its economic and social context, therefore it is important that transport planners and others understand the forces that drive transport demand before they start to try to influence them. The article by Kerry Hamilton focuses on policy issues and how there has been an assumption has been that mobility is to be encouraged and catered for. The chapter by Elliott Sclar and K.H. Schaeffer shows the limits of market forces. It illustrates, using economists' tools, how market forces alone cannot be relied upon to regulate transport for socially inclusive outcomes.

In the second section of the book 'Post-Modernity and Reflexivity', there is a chapter by Tom Turrentine which is a theoretical overview of many of the main traditions of social theory from the twentieth century as applied to the choice of cars and travel. He looks at the work of various members of what is know as the Frankfurt School and later theorists and also looks at

how reflexivity, or self-awareness and reflection, enables the construction of identities and lifestyles that involve different travel and consumption choices. This is an innovative way of using these theories to explain the context of transportation choice. His article on the use of gaming interviews shows how an innovative form - the combination of use of travel diaries along with questions about changes to lifestyle - can be combined to provide insights that are radically different, but no less valid, than those derived from the more traditional survey. Suzanne MacDonald-Walker's chapter addresses the issue of the institutional framing of interests. She shows how the European Union's (EU) attempt to control bikers' behaviour allowed them to reflexively disrupt attempts at bureaucratic control.

Section Three, 'Cultural Studies', contains examinations of popular culture, and focuses attention on the context of sub-cultures and the creativity of subordinate groups. For example, by immersing himself in the detail (and reproducing the swearing) of a particular sub-cultural group of motorbikers, Paul Willis identifies some of the complex issues that determine how particular forms of transport are used and what they symbolise. This analysis shows how important the meanings of mobility accorded by particular sub-groups can be, significance that obliterates policy issues such as safety and noise reduction. The article on the mobility effects of spatiality by Elliott Sclar and K. H. Schaeffer analyses how changing cultural mores can interact with land-use and transportation to produce outcomes that are socially exclusive, not inclusive. Marco Hüttenmoser raises the issue of how lack of independent playspace fosters unhelpfully close and intense maternal relationships with pre-school children. Starting from the premise that children develop social skills more easily if allowed independent play, his chapter challenges the view that the cost of heavy traffic can be measured by using the sorts of indicators used in most current transport studies.

In the fourth section contains examples of new policy relevant discourses. Juliet Solomon explores how mobility and accessibility can be evaluated and benchmarked as a contribution to social inclusion. Analysing usually overlooked links between policies, mobility, pollution and employment, John Whitelegg, Nick Williams and Jayanta Basu challenge the idea that motorization leads to improved quality of life for rickshaw pullers and the others in inner Calcutta. They construct their argument by combining interview data and survey material to raise issues usually overlooked in discourses about Western transport policies being transplanted into non-Western societies. The chapter by Mimi Sheller and John Urry shows how mobility and technology shapes civil society and political landscapes. Their chapter opens up new theoretical perspectives by showing how mobility can be treated as the basis of identity and social life, how it changes collective experience, technologies of speed and communication, relationships to time and space. This sort of analysis provides a crucial bridge between understanding mobility as a social construct and seeing its importance in policy terms. It invites the development of a new politics of proximity, mobility and communications in a framework that has yet to be fully explored.

This set of diverse methodological approaches is designed to show how the abandoning of simplistic methodologies, such as those modelling procedures based on seeing transport as an exchange relationship, is the only route to a more sustainable future. Acknowledging the ways in which debates have been constrained is probably the best way to move beyond acknowledging concerns about the social and environmental consequences of transport

policies (Macnaghten and Urry, 1998; Stokes and Taylor, 1994). It is commonplace to see transport demand as affected by social and economic change. It is not yet easy to see how mobility also effects social relationships and political vision. When we learn to see transport as a morphing factor, an active force, it will become clearer how personally and politically important it is.

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