Delivering lower carbon urban transport choices: lessons for the UK from northern Europe

Iain Docherty

Business School

University of Glasgow

Glasgow

G12 8QQ

Scotland, UK

Iain.Docherty@glasgow.ac.uk

Delivering lower carbon urban transport choices: lessons for the UK from northern Europe

Introduction

As the UK Government plainly stated in the opening to its *Analysis of Urban Transport* (Cabinet Office, 2009), "transport is vital to the economic life of cities and the quality of life of those who live and work within them". In response to deepening competition for population, jobs and investment in a globalising world economy, many urban regions across Europe have devoted significant resources and governmental effort to improving their transport systems so that they become more attractive places for people to live, work and invest (Docherty and Shaw, 2011a). For the half-century or so during which both the benefits but also the negative externalities of dominance of the private car have been apparent, urban transport policy has largely been about investing in roads infrastructure and complementary public transport systems to minimise the impact of road traffic congestion on economic competitiveness.

Over the last 25 years since the publication of landmark contributions such as the World Commission on The Environment (Brundtland) Report (United Nations, 1987), and the subsequent Rio and Kyoto declarations however, the urban transport policy debate has focused on the tensions between the continuing desire – held principally by governments inspired by the neo-liberal paradigm – to continue to increase the supply of transport capacity to facilitate the operation of the free market, and alternative voices more concerned with the environmental and social impacts of car dependence, a perspective memorably summarised by John Prescott, the Deputy Prime Minister and Secretary of State for Transport in the 1997 UK Labour Government, as the need to 'do something about traffic' (see Hansard, 1998). In the UK context, a persuasive strand of policy

thinking named after Goodwin *et al*'s 1991 paper *Transport: The New Realism*, emerged in the late 1990s following critical work by the Standing Committee on Trunk Road Assessment (SACTRA, 1999), the Royal Commission on Environmental Pollution's 18th Report (1994) on *Transport and the Environment* and others. The thesis of the *New Realism* rests on the rather simple idea that, especially in the urban context, with its high density built form, important public spaces and long-established patterns of land use, it is practically impossible to increase the supply of road space to match the demand for travel by car. Instead, the *New Realism* proposed that a combination of investment in public transport, walking and cycling opportunities and – crucially – demand management in the form of road pricing and/or other measures such as parking restraint, should form the basis of urban transport policy in an attempt to address the negative impacts of the car on urban life.

Although addressing the problem of traffic congestion largely remains the main objective in British urban transport policy, the environmental imperative – specifically the need to reduce the carbon emissions generated by the transport sector – grew to become an additional top-level policy driver over the 2000s (Anable and Shaw, 2007). Significant climate change legislation formalising the responsibilities of different tiers of government in setting targets for carbon reduction, and then implementing policies to reduce emissions, has been brought into law, but the prolonged recession has once again diverted policy focus away from environmental concerns, with the need to stimulate economic growth and recovery once again assuming centre stage. Nonetheless, as Sir Nicolas Stern's (2006) Independent Review on the impacts of climate change for the Treasury outlined, critical changes to a range of policy areas required if the UK is to move towards a low carbon economy in line with Government's own targets for emissions reduction.

Perhaps somewhat unfortunately given the loss of momentum in the implementation of sustainable transport policies in the UK, Stern argued that early emissions reductions were unlikely to come from transport given the scale of private vehicle movement in the UK economy and the time it would take to move towards an electrified vehicle fleet (see Geels et al, 2011). But nevertheless, he argued that 'deep cuts' in the carbon reductions from transport would be required between 2025 and 2050 if the UK Government's overall target of a 60% reduction in total carbon emissions by 2050 is to be met. Most importantly, he warned that the 'technological fix' – that is the replacement of fossil fuel-powered vehicles by electric traction could not be relied upon – and that a range of actions including modal shift to public transport and the active modes, some form of demand management such as road pricing and shorter-term technological improvements in vehicle engines would need to be delivered quickly; otherwise transport would find it very hard indeed to meet its required share of emissions reductions. Finally, and of direct relevance to the research reported here, Stern also noted that "strong, deliberate" public policy measures would be required to create the conditions for real carbon reduction from a changing transport system to become reality.

In their review of the development of the *New Realism* and its impact on British transport policy, Docherty and Shaw (2011b) highlighted two opposing views on how the "Transformation of Transport Policy in Great Britain" championed by Goodwin and others has played out: on one side is the view, put forward by neo-liberal politicians, prominent free market economists and the motoring lobby amongst others, that efforts to shift policy effort towards a more 'sustainable' posture have failed against key criteria, and that there is now a need to get back to basics in terms of developing road infrastructure, primarily to help stimulate economic growth: in essence, a return to the 'predict and

provide' mantra of the 1960s and 1970s when the key policy objective for transport was to supply as much new road space as was necessary to meet demand. The contrary view is that a combination of "governance realisms", primarily institutional risk aversion and political timidity, has led to a situation where the policy prescriptions of the *New Realism* have only been implemented in a half hearted way at best, and that the urban transport problems of congestion, local environmental degradation and carbon emissions remain unresolved as a result.

At the same time as the UK has struggled to implement more sustainable urban transport policies, many cities in other comparable northern European countries have achieved much greater progress towards similar goals, and have been doing so for some considerable time (see Bratzel, 1999). This remainder of this paper therefore explores the differences in governance contexts, systems and processes between three cities – the base UK case of Aberdeen, Scotland, where the transport policy debate remains largely focused on the construction of new road capacity, and Bremen (Germany) and Malmö (Sweden), where sustainable transport policies have been prioritised for some considerable time – to highlight those critical factors that have helped shape transport policy direction, and in the latter two cases, the delivery of a highly impressive transport policy shift towards lower carbon choices. Some critical differences between the UK and continental cases emerge, with important implications for the ongoing debates not just about transport policy but also the structures and institutions of urban governance in the UK.

Fundamentals of the urban transport debate

The trajectory of urban transport policies, and by extension the governing institutions, networks, and processes that determine them, have traditionally been conceptualised

through two distinctive but inter-related perspectives of space and place. Spatial analyses, such as the very extensive literature comprising 'The New Economic Geography' that has grown up over several years, in large part focus upon the components of (urban and regional) economic development, and in transport terms how the supply and distribution of transport across space structures mobility patterns and in turn the operation and spatial manifestation of key enabling systems such as the labour and housing markets (see Krugman, 1990; 2011). The underlying normative assumption to much of this work and – critically – its application to policy, is that increasing the supply of mobility through the provision of more transport capacity and reduced journey times leads to a 'compression of time-space' such that significant market efficiencies are captured (see, for example, Bissell, 2009; Glaeser, 2004, Laird et al, 2005).

The language of *urban competitiveness* that has come to dominate the debate on city strategies on the back of these theoretical developments therefore has at its core the idea that maximising the scale and quality of several complementary urban 'asset sets' – of which transport is a critical component – is the key to growth (Begg *et al* 2002; Lever, 1999). But facilitating the efficient operation of core markets is only one impact of transport: it also shapes the 'quality of place' projected by the city, which is argued to be an important additional element of competitiveness given its role in attracting inward investment and highly mobile knowledge workers on which high value, innovative sectors of the economy depend (Banister and Berechman, 2000; Kaufman et al, 2008; Lawless & Gore, 1999; Porter and Ketels, 2004).

The aspirations of cities with strategies framed in terms of competitiveness therefore focus on of improving this 'asset offer' so that they become more attractive places for people to live, work and invest (Begg, 2001). Transport is obviously critical to this: as Sir

Rod Eddington's Independent Review of transport for the UK Government noted, the transport system "links people to jobs; delivers products to markets; underpins supply chains and logistics networks; and is the lifeblood of domestic and international trade" (Eddington, 2006: 11). Indeed, Eddington went on to say that cities are the locations where the potential benefits are greatest given that improving urban accessibility can increase labour market flexibility through better matching of people to jobs, and facilitating business-to-business interaction are possible on a scale unlikely to be achievable elsewhere.

It is perhaps unsurprising that the main policy priorities emerging from this perspective are the maximisation of urban road and rail network capacity, although Eddington did himself counsel wariness in respect of the larger 'showpiece' or 'trophy' investments such as urban metros and tramways as other smaller (and less politically attractive) schemes tend to display higher economic returns. Nonetheless, many cities have pursued impressive infrastructure investment schemes in recent years, despite the lack of any properly conclusive evidence base demonstrating the links between transport investment and economic growth at the wider regional scale (see Banister and Berechman, 2001).

In the UK, a significant proportion of this investment has remained in the form of new roads (Shaw *et al*, 2006) given their continued policy- and political attraction to key groups, and also because the UK's road infrastructure remains 'uncompetitive' in terms of key metrics such as motorway kilometres per capita and the levels and concentration of congestion (RAC Foundation, 2011). But as the construction of new public transport systems such as light rail and metro networks has faltered in the UK, most other European countries have pressed ahead with expansion and improvement to their

networks, alongside a range of other measures including improved facilities for cyclists and pedestrians to a much greater extent. These investments not only (at least rhetorically) tackled the resilient issues of environmental and social disbenefits of the car, but also reflect the continued importance of the alternative perspective on urban transport development, which has remained more important in the debates and narratives underpinning transport policy in continental Europe, especially since the publication of the Commission's *Citizens' Network* Green paper in 1996.

This alternative normative view of the primary function of urban transport, to facilitate the city's role as a *quality place* of social and cultural creativity, has an equally long history to that based on the idea of liberal markets and economic competitiveness. Spurred on by the desire to deliver meaningful urban regeneration – often of districts and neighbourhoods that suffered physical and social damage in the heyday of urban road building in the 1960s and 70s – a substantial literature has arisen making the connections between the quality of the urban realm, the importance of pedestrian activity in sustaining neighbourhood economies, and the role that transport and accessibility plays in community interaction, social networks and public life more generally (Hass-Klau, 1993; Logan and Molotch, 2007). This perspective also has a long pedigree, much of it emerging from Jane Jacobs' (1961) seminal *Death and Life of Great American Cities*, which although not a transport text did powerfully and succinctly chart how the sudden loss of economic and social vitality in older cities with a spatial structure derived from public transport networks could be linked to the equally rapid rise to dominance of the car. Decades later, car-oriented development such as out-of-town business parks and shopping centres continues to undermine the economic and social basis of many urban communities despite significant policy and planning effort to the contrary, although there have been notable successes in both reducing the impact of traffic on historic and

culturally important urban settings (Gärling and Steg, 2007) and in changing the objectives of transport planning strategies towards those public transport modes that make the biggest contribution to the vibrancy, diversity and social inclusivity of the city (Haywood and Hebbert, 2008; Shaftoe, 2008).

The governance of transport policy in cities

Governments at all scales from small municipalities to nation states are involved in all aspects of transport policy and operations, from service provision through to strategic planning and 'greening' of the transport system in response to national and international agreements. The precise role of the institutions, networks and structures of urban governance as they relate to transport has adapted significantly over time according to the wider economic and social contexts. Whilst the *transport* problems facing cities – congestion, pollution, carbon emissions, lack of accessibility, social exclusion etc – may have remained resilient over several decades, the approaches to governing and intervening in the transport sector are much more diverse, with different policy regimes emerging according to different political logics in different places.

Any comparison of the UK's approach to transport policy compared with its continental neighbours inevitably – as is the case for analysis of many other public policy domains – centres on Britain's attempts to reconcile its twin primary external influences of Atlanticist, neo-liberal approaches prioritising laissez-faire and minimalist regulation on the right, with the more determinedly social-democratic, interventionist perspective of the European centre(left) mainstream (see Jessop, 2002; Siemiatycki, 2005; Grengs, 2005; Keeling, 2009). This tension has clear parallels with the dual space/place categorisation of transport and related economic development thought outlined above, and is crystallised in political and policy terms in the longstanding battle between the narratives

of individual liberty, economic freedom and prosperity fulfilled by unfettered car-based mobility on the one hand, versus the *New Realist* view outlined earlier, which prioritises a more 'public' transport system based on collective modes such as the bus and train, active travel by walking and cycling, more muscular approaches to transport service regulation and land use planning, and a policy meta-narrative based on reducing the need to travel.

Nowhere has this policy conflict been more intense than in cities, as it is here that the critical negative externalities of urban transport, especially congestion, poor local air quality and the social exclusion caused by lack of travel opportunities, are often at their most intense (Cahill, 2010; Docherty et al, 2008; Pucher and Lefevre, 1996; Schaeffer and Sclar, 1975). At the same as managing and mitigating its problems, policy networks have for at least two decades acknowledged that transport is a vital ingredient of any credible overall strategy for city development because of the key role it plays in promoting economic development, environmental performance, quality of life and wellbeing, and projecting a positive image of the city as a result (see, for example, Banister and Berechman, 2001; Feitelson and Verhoef, 2001; Knowles et al, 2008; Newman and Kenworthy, 1999). This complex nature of the competing and often conflicting economic, environmental, political and social impacts therefore makes transport policy the kind of 'wicked problem' that policy makers consistently find hard to resolve (Docherty and Shaw, 2011a; Conklin, 2006; Rittel and Webber, 1973).

Despite its apparent 'wickedness', governing coalitions in many cities across Europe have expended considerable time and effort in attempting to manage and ameliorate the problems of the car. Indeed, such policy interventions can be traced back to at least the 'crisis of mobility' that came about almost immediately after the oil price shocks of the

1970s, when, almost overnight, policy regimes had to shift their attention away from the building of new urban roads faced with the twin pressures of increasing fuel prices and reduced public spending on infrastructure. Also at this time, a number of radical challenges to the 1960s policy orthodoxy of 'predict and provide' first emerged, including the rise of the Green movement in continental Europe, and, at least at a rhetorical level, the promotion of energy conservation and fuel efficiency and their importance as part of a wider transition to a (more) sustainable future (Willeke and Verbeek, 1977; Heldmann, 2002).

Institutions, networks and processes of governance

The importance of the system of city governance, its networks and the power and persuasiveness of key individuals acting through it to coordinate and organise efforts to deliver meaningful change cannot be underestimated. Actually delivering complex policy change such as carbon reduction requires a system of governance that is both capable of seizing policy opportunities as they arise, and managing the implementation process through the inevitable scepticism and hostility that normally accompanies substantive change (Dudley and Richardson, 2002). This kind of governance capability – the 'strategic capacity' required to plan, implement and manage important policy interventions – is most likely to occur in those places where there are strong city-wide and/or regional institutions that can harness the efforts of a number of stakeholders Sweeting, 2002). The ability to bring stakeholders together into meaningful collaborative governance arrangements is often argued to be especially important, given that there is a direct relationship between the degree of functional integration of local transport delivery and the achievement of results on the ground (CfIT, 2007).

There has been a consistent research agenda addressing the impact of governance

attributes on transport policy outcomes for many years, with a substantial comparative element between the UK and continental Europe becoming prominent given the almost continuous reform of local governance seen in Britain since the 1980s (see, for example, Hull, 2005; Mackinnon and Shaw, 2010; Marsden and May, 2006). As it tried to kick-start the implementation of more sustainable transport policies in the early 2000s, the UK Government itself became interested in this debate, with the Commission for Integrated Transport's 2001 examination of *European Best Practice in the Delivery of Integrated Transport* unequivocally noting that:

> "A common feature of all the case study areas was a city-wide authority bringing together all of the bodies responsible for public transport… These umbrella organisations have been crucial in improving integration (through route planning, common fares and co-ordinated timetables) and marketing services, which have led to increased patronage. They have also helped to agree common policies and objectives between those involved in transport provision, and led to the adoption of (higher) common standards of transport infrastructure." (para 5.7, 5.8).

In Scotland, the *Transferability of Best Practice in Transport Policy Delivery* research undertaken for the Scottish Executive in 2003 also concluded that successful planning and delivery of transport required,

> "the existence of a regional body, most usually, for the direction of public transport, although in certain instances (London, Copenhagen), with some responsibility for roads as well. The key achievements of these bodies appear to have been, firstly, the introduction of integrated ticketing systems used by a high proportion of passengers and, secondly, the integration of public transport services… this

research could not find an example of a region that had delivered these elements of transport policy across that region but without a regional body." (para 4.2.6).

In their wide-ranging review of similar studies, Marsden and May (2006:771) concluded unequivocally that there is,

"a compelling argument for the presence of an overarching tier of government to organise travel over a spatial scale compatible with that of major commuter patterns. The extent to which such arrangements currently appear to work (in the UK) is a function of the range of powers and the funding levels afforded to the coordinating organisation."

The three cities focused upon in this paper each have very different systems of transport governance, with clear differences in policy outputs apparent that are consistent with the comparative analyses set out above. These differences, which manifest themselves in terms of politics, resource autonomy, depth of actor networks and quality of leadership, each – as the Commission for Integrated Transport research cited above noted in no uncertain terms – make a critical difference to those policies that are actually delivered on the ground. At one of the spectrum lies the German *Verkehrsverbund* integrated transport authorities, the first of which was formed in Hamburg in 1965. Each of the principal metropolitan areas in Germany, including the example of Bremen[1] in this research – now has its own authority focused around the local bus system and in most cases regional surface tram, rail (*S-Bahn*) and/or underground (*U-Bahn*) networks. The *Verkehrsverbunde* are based upon a political assembly (*Gesellschaftsversammlung*)

---

[1] The Verkehrsverbund Bremen/ Niedersachsen covers the two Federal Länder of Bremen and Lower Saxony

drawn from elected representatives of the regional government (*Länder*) and local municipalities within their boundaries, there is an Executive (*Aufsichtsrat*) of professionals from the member governments, and also a Board of Management (*Geschäftsfuhrung*). There may also be a number of advisory bodies (*Beirat*), representing interests such as transport operators and passengers' groups.

The *Verkehrsverbunde* enjoy direct control over the co-ordination and integration of public transport across modes. Their powers are extensive, and include the regulation of the local bus and rail networks, setting service standards for these operations, and multi-modal integration including strategic network planning, timetabling and multi-modal ticketing and setting fares levels.

At the other end of the spectrum lies the highly deregulated and almost completely privatised system of public transport provision in the UK. Starting with coach and local bus services in the 1980s, and followed by the railways in the 1990s, the vast majority of public transport in the UK is now operated on a commercial basis, the "marketization transition" (Docherty and Shaw, 2011c) designed to reduce public subsidy and stimulate innovation in service provision being a major objective of government policy for almost 30 years. Outside London, where there remains a strong set of governing institutions similar to the German model, governance oversight of urban transport planning and operations is very weak by global standards. Although the larger English conurbations have retained at least something of a specialist governance architecture for transport, in Scotland, the system is based on a minimalist structure of *Regional Transport Partnerships* (RTPs), which are effectively special joint committees of regional groupings of local authorities. For the case study city of Aberdeen under examination here, the *NESTRANS* RTP aims to bring together transport planning at a regional scale. Although

it has a statutory responsibility to produce a Regional Transport Plan and to promote sustainable transport, in practice NESTRANS is overshadowed both by its two local authorities Aberdeen City and (rural) Aberdeenshire, and also by the presence of the headquarters of First Group, one of the UK's largest private transport operators in the city. Unlike in the other two case study examples, there is no over-arching coordination of transport services, nor integrated ticketing between operators.

Transport governance in Sweden forms something of a 'third way' between the German and UK models. Although the Swedish national government has undertaken a comprehensive process of transport liberalisation over the last 20 years, this has been a relatively controlled series of reforms based on the competitive tendering of specific routes by public authorities, rather than the 'big bang' deregulation and privatisation of public transport operations seen in the UK. Public transport operations therefore remain coordinated by special transport boards of the county (regional) governments across the country, which are directly elected and have responsibility for a range of planning- and environmental functions, plus health care. In the case study city of Malmö, the regional *Skånetrafiken* board is responsible for the tendering of local and regional bus and train services, and coordinates fares and ticketing as part of its strategic planning responsibilities.

Policy differences in three northern European cities

The main focus of the research reported here is to compare the governance contexts that support the delivery of lower carbon transport policies in three northern European cities, specifically to contrast the progress achieved in implementing sustainable transport policies in Aberdeen with that achieved in Bremen and Malmö. The research design was based on semi-structured interviews of key decision makers in each city,

with a set of research questions designed to identify which particular transport policies had been most successful in delivering reduced carbon emissions, but also which aspects of governance in each city have been the most important in creating the necessary strategic capacity to translate plans into action, and finally what the actions of the governing networks in each city reveal about how attitudes differ on how sustainable transport policies might improve both urban competitiveness and quality of place.

We take as our 'base case' the example of Aberdeen: like many British cities, Aberdeen has struggled to control the negative impacts of the car, with congestion and urban environmental degradation becoming significant problems. With no urban fixed transport network, the bus is the main form of public transport, and given the high level of prosperity of the regional economy, effectively has a residual role in overall mobility provision. The transport policy debate in the city and region has for several years revolved around the proposal to build a high quality outer bypass road for the city, with even modest car restraint measures, such as pedestrianisation of key shopping streets, strongly resisted by a range of actors. Often claimed to be the largest UK city without a high quality expressway route, the existing surface streets and boulevards in Aberdeen cope with significant levels of through traffic, especially HGVs travelling to and from the north east ports.

In comparison with Aberdeen, the cities of Bremen and Malmö have achieved a much more balanced split of mobility, with walking and cycling accounting for around 40% of total movement. This is in spite of much better road infrastructure, with both cities benefitting from full motorway bypass/ring- and arterial roads. Although, like Aberdeen, Malmö's urban public transport system also relies on the bus – the city's tram network having been closed in the 1960s – like most German cities, Bremen benefits from a

surface tram network. Both Bremen and Malmö are also served by comprehensive local rail systems, with the Malmö system significantly enhanced by the opening of a cross-city tunnel in December 2010. In contrast, Aberdeen is served by a single rail line, with only very limited local commuter services available.

Policy initiatives

The first set of research questions focused on those specific transport policy interventions that decision makers in Bremen and Malmö consider to have made the greatest contribution to the achievement of 40% modal share for the active modes, and what broader policy contexts were required for this to be possible. In many respects, the view of practitioners to this question were unsurprising – recognition that a 'sophisticated policy mix' combining the 'carrots' of improved public transport and high quality urban realm with the 'sticks' of car restraint (largely through road space reduction and parking controls rather than pricing) was widespread. As one Bremen respondent put it,

> "There is no silver bullet. It needs a composition of hardware (infrastructure and services) and software (image, perception etc) – and of carrots and sticks."

The infrastructure and public transport services interventions seen as important were in many ways a standard 'toolkit' for moving overall transport provision from one of car dependence to a system that relies substantially on more sustainable modes. From the overarching policy architecture of comprehensive integrated transport plans, through integrated 'smartcard' tickets to prioritisation of space for public transport systems, walking and cycling, reduced speed limits, car sharing initiatives based on innovative ICT solutions, there is a clear chain between policy formulation, implementation and monitoring underpinning the pursuit of sustainable transport.

Thus although the 'hardware' interventions practiced in Bremen and Malmö are actually rather conventional in (sustainable) policy terms, being highly reminiscent of those recommended in the *New Realism* and elsewhere, the focus on the critical idea that appropriate policy 'software' is required in order to create the context for the implementation of specific sustainable policies is crucial, and forms an essential difference between the Aberdeen case and the two continental cities. For example, in Aberdeen, as elsewhere in the UK, the debate over fuel prices throughout out the post-2008 recession has been fought over who should shoulder the responsibility for *reducing* them to stimulate economic growth and relieve the financial burden on households, with the main political parties fighting a rhetorical battle over how the tax on petrol and diesel could be cut. The contrast between this position, and the idea that rising fuel prices should trigger a debate over whether "a car orientated transport policy is leading to a dead-end street" (Bremen respondent) could not be more profound.

The importance of policy 'software' in Malmö's transition following its deindustrialisation crisis in the 1980s is even greater. Respondents there were unanimous in the belief that the construction of the narrative that success in a post-industrial era necessitated a set of policies and strategies for transport and city planning that were avowedly post-industrial in themselves, by focusing on renewed communities, new urban neighbourhoods, the visible greening of the city and a reduction on the dependence of motorised transport in particular. Thus as one respondent said, "the city was in transition from late 80s, (with) the idea of sustainability as part of post-industrial identity: it (sustainability) was a search for something new, and it fitted well with the vision of the future".

.

In terms of implementation, Malmö's approach was deliberately pragmatic. Early moves towards the reorientation of transport planning in the city framed the western waterfront development, itself a major symbol of the regeneration of an abandoned industrial area, as a 'pilot' project that would demonstrate the potential for such policies to create highly attractive, liveable communities that "embodied" the city's post-industrial vision. Critically, initial implementation of car restraint policies was limited to a small defined geographic area, so that "new development so not imposing on existing mobility patterns" (Malmö respondent) as a means of minimising political resistance to change. In Bremen, key national and international milestones, such as the Kyoto Summit and the spike in fuel prices in the early 2000s, were mobilised by planners to enliven the debate about the future direction of transport in the city.

Politics and cultures of governance

The idea that there needs to be a set of 'software' in place – the narrative, vision and cultural acceptance of the benefits of change – for shift towards more sustainable behaviours and policies to be made in practice is now well articulated in the literature (See, for example, Banister, 2008; Hull, 2008). Our second set of interconnected research questions explored this idea further, probing decision-makers' understanding of the political-economic context of each city, and specifically whether there an identifiable environmental or social tipping point at which the policy discourse changed, and the extent to which individual leaders in key organisations set the agenda and influenced the policy landscape.

In our case studies, respondents in both Bremen and Malmö recognised that their respective cities benefitted from the presence of a 'radical' or 'alternative' political culture that helped support and legitimise change. To some extent there were elements of

positive path dependency: both cities have seen the establishment of modern universities (1960s in Bremen and 1990s in Malmö), with radical student culture making a significant contribution to local politics. As one Bremen respondent noted, in the transport domain, this alternative culture means that in his city the bicycle has been 'cool' for some considerable time, and so,

> "In terms of cycling for instance, Bremen always had cycle paths and the bicycle had never had the image of the poor man's mode of transport… so the new image of cycling met in Bremen an already existing infrastructure – not in best shape, but at least something. Even though the number of cyclists was lower than today, we always had the 'critical mass' of cyclists.

A similar positive inheritance was noted in Malmö, with one respondent there noting that path dependency issues had also worked to the city's advantage in many respects as, for example,

> "Sweden didn't start off with a bike share of nil… (despite the fact that) it was never a key priority to invest in cycling infrastructure in the past."

At the same time, in both Bremen and Malmö, respondents volunteered the assertion that the youthful culture of the city and the related reinvigoration of dense urban neighbourhoods and a social life based around new universities had the effect of reducing the importance of car ownership as an element of personal identity, to the extent that even in Germany, "the perception of cars among young urban dwellers has changed dramatically… the car is losing its role as status symbol."

This idea that 'radical' or 'alternative' political cultures are important elements of the story of the shift to sustainable transport in Bremen and Malmö is also reflected in the representative politics of the two cities. In both cases, there was an early and strong role for the environmental movement, related NGOs and the Green Party in the transport policy debate. One Bremen respondent recounted that,

"Bremen was the first German Land (state) parliament with Green parliamentarians, in 1979 – the Green List was founded as an initiative against the former urban highway plans. From 1991 – 1995 there was also a Green participation in the (Land/city) government – and since 2006 we have a coalition of the SPD and the Green Party ruling the state and city. The last election in May 2011 brought a strong increase in the number of green voters (to 22%). This 'red-green' government worked so far quite smoothly – even in the field of transport."

A similar process was noted in Malmö, with consensus amongst policy makers there that the formal adoption of pro-cycling policies in the city was a direct result of pressure from the Greens in elected positions. The view was put forward that there, across Sweden and Europe, the presence of Green representation in elected assemblies and governments had moved environmental debates such as those on policies for sustainable transport into the mainstream. The extent of Green representation was also speculated to be a major indicators of "how well prepared is the public is to accept certain policy measures" such as car restraint (Malmö respondent).

Whilst the same kind of mainstreaming process could be said to have happened in Scotland – the devolved Scottish Parliament has from the outset had active Green representation, with moves shifts towards more sustainable transport policy options at

least in a rhetorical sense agreed as important and worthwhile – there is little evidence that this has made a difference to actual policy choices at either local level in Aberdeen, or nationally. To explain this position, we are drawn to a common thread in the analysis of many of our respondents: that on the importance of political leadership, and the presence of strong city-wide and/or regional governing institutions with the capacity to turn leadership and vision into real policy action.

The perception of decision makers in both continental cities was that their particular local circumstances – specifically the juxtaposition of 'radical' political cultures accepting of the need for change and strong local/regional institutions, i.e. the integrated 'regional' administrations such as Skäne in Sweden and federal Länder system in Germany – had generated a policy architecture and set of implementation processes through which the scope to adopt pro-environment and sustainable transport policies was greater than that evident even in the respective national governments. In Malmö, this position was strongly linked to the scale and pace of deindustrialisation, which produced the kind of crisis from which good policies are often (anecdotally) said to emerge: as noted above, the need to construct a new narrative for the city's future was applied by influential voices including the city's mayor to articulate the potential and need for change to a set of explicitly post-industrial development policies that focused on sustainable living.

In Bremen, with its history of the advanced planning and then abandonment first of urban expressway building and then the proposed underground metro system weighing heavily on the minds of city leaders, the decision to extend the tram system significantly in the 1990s generated an intense political debate about policy priorities and the value for money of different options. This was not only about the reallocation of road space for car to tram – indeed, as one of our Bremen respondents said, "promoting policies for

better public transport, walking and cycling is easy… until you propose to take space away from the car". One senior respondent explained that such was the political and public memory of past expensive 'mistakes' such as the unfinished urban road building programme and unrealised metro, that the decision to extend the tramway network "required trips to Strasbourg, Zurich and Karlsruhe to convince the local politicians that this will be the best way for Bremen." But nonetheless, the governance networks were able to overcome these doubts so that policy change could be effected. Once operational, doubts evaporated altogether as the new sections of the network performed strongly, with increases in patronage compared to the former bus routes of up to 60%. Such tangible expressions of the popularity of sustainable choices then made the implementation of complementary policies – such as the introduction of a city-wide car sharing scheme – much easier, with these kind of interventions seen to move from 'niche' activities to the mainstream.

The comparison with the situation in Aberdeen could not be starker. When the first serious planning and technical work on the potential for an outer bypass was done in the 1990s, there was strong recognition that such a project would need to be accompanied by a range of complementary policies to 'lock in' its benefits, and to avoid generating negative or perverse outcomes. Key here were the ideas that the bypass – now termed the Aberdeen Western Peripheral Route – should be part of a wider 'Modern Transport System' for the city region, in which urban road capacity released by the new route would be reallocated to non-car modes, with substantial investment in the bus network, cycling infrastructure and facilities for pedestrians in the city centre. Alongside this would be strict enforcement of the established strategic plans for the region, to resist the inevitable pressures for significant land release, especially for housing, around new junctions, which would both undermine the bypass' role as a strategic through route, and

further increase carbon emissions by encouraging another wave of decentralisation from the city.

In reality, as so often happens to 'integrated' transport plans in the UK, the Modern Transport Strategy disappeared from view, with construction of the bypass itself 'cherry picked' so that effectively none of the complementary measures retain any priority in terms of implementation (see Shaw et al, 2006 for more on this in the UK context). Worse still is the division between the trunk road itself, which is funded by central government, and the other proposed measures which were to be funded by local authorities: as local council budgets have been hit hard by the post-2008 squeeze on public expenditure, there is even less scope for the bus, walking and cycling improvements to be introduced despite their relatively modest cost.

One area of consensus between all three cities concerned our question on the key barriers to progress in the implementation of sustainable transport policies. In each case, the local media were identified as sceptical, even reactionary in their opposition to any policy choices that might be perceived as 'anti-car'. More substantively, city centre businesses, most notably retailers, were also identified in each location as a stakeholder group amongst the most likely to object to policy change. Perhaps this is unsurprising, given these businesses' direct exposure to changing patterns of mobility and footfall in those central areas that are most obviously affected by policies such as road space reallocation, pedestrianisation, parking restraint etc. But in the Bremen and Malmö cases at least, significant effort was put into initiatives to integrate the local business community in the policy design and implementation phase so that there was as much awareness as possible about the direction of these policies, and that they were designed to sustain and improve city centre trading conditions rather than impoverish them.

Key factors influencing the implementation of sustainable transport policies

In order to summarise the apparent differences between the three case studies, we have borrowed and adapted Docherty and Shaw's (2008; 2011) approach of collating the key influences acting upon transport policy development in the form of a PESTEL table for each city. These tables categorise the external forces acting upon policy makers into political, economic, social, technological, environmental and legal factors, and enable comparisons to be made concerning the similarities and differences apparent across the three cases. From our three tables, it is relatively straightforward to see the similarities between the two continental cases, and that Aberdeen is rather different, conforming to a more obviously British, neo-liberal model

TABLES 1-3 ABOUT HERE

ABERDEEN PARAGRAPH?

In contrast, both continental examples exhibited many similarities, the most important relating to institutional structures and capacity, alongside a wider political culture more accepting of change. As we noted earlier, the importance of new university communities and wider youth culture, together with the early entry of Green parties into representative politics, is a major factor in the rise to prominence of sustainable development policies in general, and in the acceptance of sustainable transport policy interventions in particular. Indeed, similar examples can be found even in the UK context in cities such as Brighton and Cambridge, where environmental issues are "hardwired" (Bremen respondent) into different political perspectives ranging far beyond the Green movement.

But if local political contexts create the *potential* for policy change to occur, then institutional structures and capacity, plus the presence of vision, commitment and stamina across the local political leadership, are necessary for such change to be *implemented* in practice. In both Bremen and Malmö, several key elements of this mix were in place: strong directly-elected city- and/or regional governments with substantial fiscal autonomy to act; clear leadership from senior politicians setting out a vision for change and a credible pathway along which to achieve it; and perhaps most importantly of all, a constructive relationship between politicians and professional officers that generated alignment and mutual reinforcement between professional and political groups. Whilst "the importance of committed politicians in the first place" (Malmö respondent) cannot be underestimated, the kind of executive governance based on a "joint elite" (Dacombe, 2011; Stoker and Wilson, 1986; Wolman and Stoker, 1992), identified in both cities has long been argued to set the foundations for substantive policy change, and in our cases at least, appears to remain a convincing analytical perspective. As one of our Bremen respondents put it,

> "We are not just executing the decisions of the politicians, although that might be the theory… there is a more proactive role (than in the UK) of professional people in the administration".

Other factors were also important in setting the context for sustainable transport policy decisions: some of these could be conceived as positive outcomes of path dependency, such as the historically high levels of cycling in both Bremen and Malmö that provided an existing critical mass on which to build. But also crucial was the fact that attempts to implement sustainable transport was not taking place in a wider policy vacuum: especially in Malmö, where transport interventions were from the outset framed in a

much wider – and compelling – narrative of profound structural change towards a post-industrial future for the city, the potential to effect policy change was captured by articulating the need for and benefits of an alternative approach in much wider, even visionary terms. There are clear parallels here with Aberdeen, where the centrality of the oil and gas sector to the city and regional economy makes the promotion of sustainable transport policies, with their explicit focus on climate change and a move away from fossil fuels, a 'difficult sell'. Only time will tell whether the Scottish Government's national economic development narrative about 'reindustrialising; Scotland through substantive investment in renewable energy technologies will feed through such that public policy in domains such as transport becomes genuinely aligned with the sustainability agenda.

Lessons for the UK from continental experience

Potter (2007) argues that the particular blend of policies put forward by in Eddington Review is a pragmatic attempt to bring together traditionalist expansion of the supply of mobility, and more obviously sustainable policies. The fact that the UK still struggles to display anything approaching a 'sophisticated policy mix' of the kind that Eddington urged is not just down to the sometimes rather obvious inherited deficiencies in core infrastructures. It is also quite clearly because despite the evidence base, the political case for a shift towards the actual implementation of sustainable policy ideas around since at least the publication of the *New Realism* has simply not been made to any great extent. Our case study of Aberdeen is a prime example: the transport debate has been effectively reduced to how to ensure the expansion of road capacity, with very limited implementation of other policies directed at improving sustainability. Certainly, the kind of road space reallocation or more general shift in policy (and resource) attention to public transport and the active modes seen in Bremen and Malmö would appear so far removed from the current political and policy narrative to be almost impossible.

We identify various reasons for this: although Aberdeen's distinctive local context, primarily its very high levels of overall prosperity, dispersed employment structure and limited historic infrastructures, are important, there is no doubt that the lack of cohesive and powerful local government institutions able to formulate and implement sustainable policies is key. This level of action is possible in only possible in places where very substantial 'strategic capacity' – that is the leadership, the finance, the powers, the technocracy – exists, most usually in the nexus between highly technically competent, driven professional officers and charismatic political leadership (Mackinnon *et al*, 2008; Sweeting, 2002). With the exception of London – which enjoys both an elected Mayoralty and extensive transport planning expertise in the form of Transport for London – these attributes are almost completely absent elsewhere at local and regional level in the UK. In contrast, we found evidence of substantial strategic capacity to implement sustainable policies in both Bremen and Malmö, generated by the existence of strong city- and region-wide democratic institutions, which were able to lead the debate in advance of national government thanks to their strong political leadership favouring change.

Thus it appears that progress in developing a fresh approach to transport policy in Aberdeen as in most provincial British cities remains hampered by the lack of substantive power, institutional capacity and fiscal responsibility of local government. The strength and resource base (both in financial but also technical terms) of Aberdeen's system of transport governance falls a very long way short both of what is apparent in Bremen and Malmö. In these cities, policies that would be regarded as innovative, risky or even downright dangerous in the British context – such as the introduction and aggressive expansion of light rail transport using roadspace previously

allocated to general vehicle traffic, the construction of extensive off-road cycling infrastructure and the remodelling of important urban spaces to privilege the pedestrian over the car – are simply the norm. Limited governance reforms based on fuzzy notions of partnership and consensus working between authorities and organisations with evidently conflicting aspirations mean that there is almost no realistic chance of developing the kind of strategic capacity to act present in cities across the continent, of which our case study examples are but two. Overcoming the "governance realism" (Docherty and Shaw, 2011b) that British structures of urban and regional governance, which have been progressively fragmented, stripped of policy responsibilities and under-resourced, are simply not up to the task of moving transport policy in a more sustainable direction, will be very difficult indeed.

It is therefore difficult to avoid the conclusion that the governance regime in Aberdeen – as in many other British cities – is simply not sufficiently capable in terms of financial and technical resources to establish a convincing narrative for genuine change. Weak institutions of transport governance, and the absence of any real fiscal autonomy at local level, which might begin to generate resources for the sustained implementation of alternative policies such as high quality cycling infrastructure, means that the prospects for change are rather limited to say the least. Moreover, there is little evidence of the political commitment and stamina necessary to push for major change in both the scale and type of mobility in the city and its surrounding region: the politics of transport in Aberdeen remain dominated by the desire to capture central government resources to improve road and, to a lesser extent, rail infrastructure (both of which are indeed limited in international terms), combined with the imperative to do nothing that might upset the motoring lobby, such as any move towards parking restraint or road space allocation. None of this is surprising in the UK context, where the deliberate implementation of

policies aimed at shifting the balance of mobility provision away from the car to public transport and the active modes is still seen as variously quaint, luddite, or downright dangerous for the economy. But these are the very reactions that other similar regimes, such as those in our German and Swedish case study cities, have overcome successfully.

FINAL POINTS TO FINISH

The limited existence of the strategic capacity to act at local level is one explanatory factor in understanding the lack of movement towards more sustainable transport policies in Aberdeen. But the broader contextual issues of the implications of this for the debate over the prioritisation of policy interventions aimed at improving the 'space' and 'place' aspects of urban competitiveness is also crucial.

Final comments on more mobility, car based solutions still winning out, roadspace reallocation and substantive public transport initiatives unlikely as have limited local support and resonance in oil city etc

Table 1:   Aberdeen PESTEL factors

Political	Economic	Social	Technological	Environmental	Legal
Substantially eroded strategic capacity in local government	High overall prosperity levels, especially in UK context	International labour market introduces North American influence on attitudes to car-based mobility	Centrality of oil and gas to local economy and identity makes car-restraint policies an extremely difficult 'sell'	Mixed signals from Scottish and UK Governments on priority given to carbon emissions reduction and climate change agendas	Strong local challenge to road building schemes but opponents marginalised by most stakeholders
Marginal nature of council control combined with sensationalist local media leads to politicisation of 'straightforward' decisions	High disposable income, consumer consumption and car ownership	High quality of life in suburban and ex-urban locations	Standard UK-wide problems of un-necessary project complexity	Sensitivity over policy clash between reducing fuel consumption and vitality of oil and gas sector	Political impact of transport policy decisions magnified by constitutional debate and local SNP stronghold
Inter-regional competition with Central Belt	Longstanding debates over increasing costs of congestion at key pinch points	Uncertain future for core city with outdated housing stock	Longstanding infrastructure aspirations embedded into professional cultures in consultancy and planning sectors	City bypass seen as development opportunity by key stakeholders in spite of local and national policy commitments	Difficult relationship between core city and surrounding rural authority
Demands for local returns on economic growth derived from oil and gas	Capital rationing of UK Government	Resilient pockets of social exclusion and extreme polarisation of wealth	Regional road and rail infrastructure undoubtedly weak by international standards	Negative impact of traffic in urban core translated in support for city bypass	
Local business community active in calling for improved transport infrastructure	Perceived Central Belt bias in Scottish Government spending priorities		Counterurbanisation of population driving trend towards larger vehicles	Continuing urban sprawl as a response to demographic and lifestyle changes	
Pro-development stance of powerful key investors e.g. Donald Trump	International labour market with substantial North American representation		Cycling seen as niche and 'alternative' rather than mainstream		
Presence of major bus group HQ in the city traditionally resistant to increased policy regulation	Strength of engineering sector leads to dispersed employment patterns				

Legacy of (perceived) underinvestment in core infrastructure, especially roads				
Political desire to deliver 'trophy' capital projects				

Table 2:   Bremen PESTEL factors

Political	Economic	Social	Technological	Environmental	Legal
Strong local strategic capacity given Land status of city and related institutional capability	Favourable national economic context but strong inter-urban competition	'Alternative' location with 1960s university, vibrant youth culture	Visibility of tram network as integral part of urban realm	German leadership of international carbon emissions reduction and climate change policy agendas	Proactive role in policy for professional officers in addition to politicians
Longstanding radical political culture associated with peripheral- and port-location	Substantial financial autonomy of city and regional authorities	Successive waves of radical political change e.g. German reunification in 1990s	Negative aesthetic and environmental impact of 1960s urban road infrastructure	Urban form amenable to tram and cycling development	Federal system empowers sub-national institutions to act
Longstanding influence of Green Party on urban politics	High disposable incomes yet culture of limited car use	History of pro-environment protest	Bicycle seen as 'cool' rather than niche/alternative		Developed culture of inter-governmental co-funding of infrastructure developments
Supportive national policy context for sustainable transport	Substantial presence of car industry in the city	Limited disparity in wealth across socio-demographic groups			Strong regulatory and institutional base for transport coordination
Effective individual political leaders	Strong performance of public transport network extensions				
National culture of predisposition towards political coalitions					
Environmental protection a natural element of 'conservative' politics					

Table 3:   Malmö PESTEL factors

Political	Economic	Social	Technological	Environmental	Legal
Crisis of sudden de-industrialisation used to generate policy innovation	(Generally) favourable national economic context but strong inter-urban competition	Modern university, vibrant youth culture	Visibility of Oresund fixed link and national commitment to City Tunnel project highlight role for major infrastructure developments	Leading Swedish role in international carbon emissions reduction and climate change policy agendas	Proactive role in policy for professional officers in addition to politicians
Distance from national capital leveraged to promote political distinctiveness	Central government prepared to invest in 'national' schemes in provincial cities	Rapid socio-cultural opening after EU accession and establishment of fixed link to Denmark	Cycling seen as 'normal' and not necessarily associated with sustainability agenda	Impact of climate change on transport infrastructure	Ongoing process of governmental decentralisation and strengthening of regional institutions
Ingrained political attitudes prioritising equality and consensus	Policy innovation driven by Oresund collaboration initiative	Rhetorical and cultural linkages between post-industrial imperatives and sustainability		Urban core amenable to pedestrianisation	Carefully planned and implemented policies of transport tendering rather than on-road and on-rail competition
Increasing influence of Green Party on urban politics	Closure of car industry in city a major component of policy context	Conducive national attitudes to sustainability and related policies			
Effective individual political leaders		Major waterfront redevelopment as premier location for quality of life			

References

Anable, J. and Shaw, J. (2007) 'Priorities, policies and (time)scales: the delivery of emissions reductions in the UK transport sector', *Area* 39(4) 443-457.

Banister, D. (2008) "The sustainable mobility paradigm", *Transport Policy*, 15(2) 73-80.

Banister, D and Berechman, J. (2000) *Transport investment and economic development*. London: UCL Press,

Banister, D. and Berechman, Y. (2001) 'Transport investment and the promotion of economic growth', *Journal of Transport Geography*, vol 9, no 3, pp. 209-218.

Begg, I. (2001) ''Investability': the Key to Competitive Regions and Cities?', *Regional Studies* 36(2)187–193.

Begg, I., Moore, B. and Altunbas, Y. (2002), Long Run Trends in The Competitiveness of British Cities, in Begg, I. (2002) Urban Competitiveness: Policies For Dynamic Cities, Policy Press, Bristol, 101-134.

Bratzel, S. (1999) "Conditions of success in sustainable urban transport policy: Policy change in 'relatively successful' European cities", Transport Reviews 19(2) 177-190.
Bissell, 2009

Cabinet Office (2009) An Analysis of Urban Transport, Cabinet Office, London. http://www.cabinetoffice.gov.uk/strategy/work_areas/urban-transport.aspx

Cahill, M. (2010) *Transport, environment and society*. Maidenhead: Open University Press.

Conklin, E. (2006) *Dialogue mapping: building shared understanding of wicked problems*. Chichester: Wiley.

CfIT (2001) *Study of European best practice in the delivery of integrated transport.* http://webarchive.nationalarchives.gov.uk/20110304132839/http://cfit.independent.gov.uk/pubs/2001/ebp/index.htm

CfIT (2007) *Are we there yet? A comparison of transport in Europe*. http://webarchive.nationalarchives.gov.uk/20110304132839/http://cfit.independent.gov.uk/pubs/2007/ebp/index.htm

Dacombe, R. (2011) "Councillor-officer relations in local government overview and scrutiny committees in England and Wales", *The International Journal of Leadership in Public Services* 7(3) 218-228.

Docherty, I. and Shaw, J. (2011a) "Transport in a Sustainable Urban Future", in Flint, J. and Raco, M. (eds) *The Future of Sustainable Cities: Critical Reflections*, Policy Press, Bristol.

Docherty, I. and Shaw, J. (2011b) "The Transformation of Transport Policy in Great Britain? 'New Realism' and New Labour's decade of displacement activity", *Environment and Planning A* 43(1) 224-251.

Docherty, I. and Shaw, J. (2011c) "The Governance of Transport Policy", in Kemp, R., Geels, F. and Dudley, G. *Automobility in transition? A socio-technical analysis of sustainable transport*, Routledge, Abingdon.

Docherty, I., Giuliano, G. and Houston, D. (2008) 'Connected cities', in R. Knowles, J. Shaw and I. Docherty (eds) Transport geographies: mobilities, flows and spaces. Oxford: Blackwell, pp. 83-101.

Dudley, G and Richardson, J (2000) Why Does Policy Change?: Lessons from British Transport Policy, 1945-99. Routledge, London.

Eddington, R. (2006) The Eddington transport study: the case for action. Sir Rod Eddington's advice to the government. London: The Stationery Office.

European Commission (1996) The Citizens' Network: Fulfilling the Potential of Public Passenger Transport in Europe: European Commission Green Paper, European Commission, Brussels.

Feitelson, E. and Verhoef, E. (2001) (*eds*) *Transport and environment: in search of sustainable solutions*. Cheltenham: Edward Elgar.

Gärling, T. and Steg, L. (2007) *Threats from car traffic to the quality of urban life: problems, causes, and Solutions.* Oxford: Elsevier.

Geels, F. Kemp, R., Dudley, G. and Lyons, G. (2011) *Automobility in transition? A socio-technical analysis of sustainable transport.* Abingdon: Routledge.

Glaeser, E., (2004) *Four challenges for Scotland's cities. AlLänder Series*. Glasgow: University of Strathclyde.

Goodwin, P; Hallett, S; Kenny, P and Stokes, G. (1991) *Transport: the new realism.* Oxford: Transport Studies Unit, University of Oxford.

Grengs, G. (2005) 'The abandoned social goals of public transit in the neoliberal city of the USA', *City*, vol 9, no 1, pp. 51-66.

Hansard (1998) Volume 309, 25 March, 468.

Hass-Klau, C. (1993) 'Impact of pedestrianization and traffic calming on retailing. A review of the evidence from Germany and the UK', *Transport Policy*, vol 1, no 1, pp. 21-31.

Haywood, R. and Hebbert, M. (2008) 'Integrating Rail and Land Use Development', *Planning Practice and Research*, vol 23, no 3, pp. 281 – 284.

Hull, A. (2005) "Integrated transport planning in the UK: From concept to reality", *Journal of Transport Geography* 13(3) 318-328.

Hull, A. (2008) "Policy integration: What will it take to achieve more sustainable transport solutions in cities?", *Transport Policy* 15(2) 94‑103.

Jacobs, J. (1961) *The death and life of great American cities*. New York: Random House.

Jessop, B. (2002) 'Liberalism, Neoliberalism, and Urban Governance: A State-Theoretical Perspective', *Antipode* 34(3) 452-472.

Kaufmann, V., Jemelin, C. Pflieger, G. and Pattaroni, L. (2008) 'Socio-political analysis of French transport policies: The state of the practices', *Transport Policy*, vol 15, no 1, pp. 12-22.

Keeling, D. (2009) 'Transportation geography: local challenges, global contexts', *Progress in Human Geography*, vol 33, no 4, pp. 516-526.

Knowles, R., Shaw, J. and Docherty, I, (*eds*) (2008) *Transport geographies: mobilities, flows and spaces*. Oxford: Blackwell.

Krugman, P. (1991) *Geography and Trade*. Harvard University Press, Cambridge MA.

Krugman, P. (2011) "The New Economic Geography, Now Middle-aged", *Regional Studies* 45(1) 1-7.

Laird, J., Nellthorp, J. and Mackie, P. (2005) 'Network effects and total economic impact in transport appraisal', *Transport Policy*, vol 12, no 6, pp. 537-544.

Lawless, P. and T. Gore (1999) 'Urban Regeneration and Transport Investment: a Case Study of Sheffield 1992-1996', *Urban Studies*, vol 36, no 3, pp. 527-545.

Lever, W. F. (1999) 'Competitive Cities in Europe', *Urban Studies*, 36 (5-6) 1029-1044.

Logan, J. and Molotch, H. (2007) *Urban fortunes: The political economy of place 2nd edition.* Berkeley: University of California Press.

Mackinnon, D. and Shaw, J. (2010) "New State Spaces, Agency and Scale: Devolution and the Regionalisation of Transport Governance in Scotland", *Antipode* 42(5) 1226–1252.

Marsden, G. and May, A. (2006) "Do institutional arrangements make a difference to transport policy and implementation? Lessons for Britain." Environment and Planning C: Government and Policy, 24(5), 771-790.

Newman, P. and Kenworthy, J. (1999) *Sustainability and cities: overcoming automobile dependence.* Washington DC: Island Press.

Porter, M. and Ketels, C. (2004) *UK Competitiveness: Moving to the Next Stage, framework paper to DTi and ESRC Cities Programme*.
http://www.isc.hbs.edu/econ-natlcomp.htm.

Pucher, J. and Lefevre, C. (1996) *The urban transport crisis in Europe and North America*. London: Macmillan.

RAC Foundation (2011) *Keeping the Nation Moving*, RAC Foundation, London. http://www.racfoundation.org/assets/rac_foundation/content/downloadables/keeping_the_nation_moving_final_report.pdf

Rittel, H. and Webber, M. (1973) 'Dilemmas in a general theory of planning' *Policy Sciences*, vol 4, no 2, pp.155-169.

Royal Commission on Environmental Pollution (1994) *Transport and the environment.* Oxford: University of Oxford Press.

Schaeffer, K and Sclar, E. (1975) *Access for all: transportation and urban growth.* London: Penguin.

Siemiatycki , M. (2005) 'The making of a mega project in the neoliberal city', *City* vol 9, no 1, pp. 67 – 83.

Shaftoe, H. (2008) *Convivial urban spaces: creating effective public places*. London: Earthscan.

Shaw, J. Hunter, C. and Gray, D. (2006) Disintegrated transport policy: the multi modal studies process in England. *Environment and Planning C: Government and Policy* 24(4) pp. 575-596.

Shaw, J., Knowles, R. and Docherty, I. (2008) 'Transport, governance and ownership' in R. Knowles, J. Shaw and I. Docherty (*eds*) Transport geographies: mobilities, flows and spaces. Oxford: Blackwell, pp. 62-80.

Standing Advisory Committee on Trunk Road Assessment (1994) *Trunk roads and the generation of traffic.* HMSO, London.

Stern, N (2006) Stern review on the economics of climate change. HM Treasury, London. www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm

Stoker, G and Wilson, D. (1986) "Intra-Organizational Politics In Local Authorities: Towards A New Approach", *Public Administration* 64(4) 285–302.

Sweeting, D. (2002) Leadership in urban governance: The Mayor of London. *Local Government Studies* 28, 3-20.

United Nations World Commission on Environment and Development (1987) *Our common inheritance*. Oxford University Press, Oxford.

Vanderabeele, W. and Horton, S. (2008) The evolution of the British public service ethos: a historical institutional approach to explaining continuity and change. In *Ethics and integrity of governance: perspectives across frontiers,* Edward Elgar, London 7-24.

Willeke, R. and Verbeek, F. (1977) "Verhekr und Umwelt", in Reihe, B. (ed) *Deutsche Verkehrswissenschaftliche Gessellschaft, Schriftenreihe* 35, Koeln.

Wolman, H. and Stoker. G. (1992) "Understanding Local Economic Development in a Comparative Context", *Economic Development Quarterly* 6(4) 406-417.