

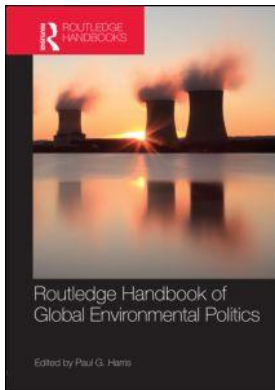
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On: 28 Oct 2020

Access details: *subscription number*

Publisher: *Routledge*

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: 5 Howick Place, London SW1P 1WG, UK



Routledge Handbook of Global Environmental Politics

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Sustainable transport and infrastructure

Publication details

<https://www.routledgehandbooks.com/doi/10.4324/9780203799055.ch31>

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Published online on: 25 Sep 2013

How to cite :- Iain Docherty. 25 Sep 2013, *Sustainable transport and infrastructure from: Routledge Handbook of Global Environmental Politics* Routledge

Accessed on: 28 Oct 2020

<https://www.routledgehandbooks.com/doi/10.4324/9780203799055.ch31>

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Sustainable transport and infrastructure

Iain Docherty

Good transport and infrastructure provision are acknowledged as vital ingredients for economic success, but they have often important negative environmental consequences. The argument about the impact of the relative quality of transport and other infrastructure networks, such as water, drainage and telecommunications, has been developed across several decades, with an extensive literature now available encompassing diverse theoretical and empirical analyses of the links between infrastructure investment and economic growth. For example, Banister and Berechman (2001) set out evidence for the simple yet important assertion that locations with poor quality transport are at a competitive disadvantage when compared with those with high quality transport infrastructure. This is a rather straightforward finding. Prioritizing infrastructure investment is an attractive, easily understandable policy position to take for those charged with delivering economic development because it is seen to create employment, improve place attractiveness and competitiveness, and stimulate growth.

There are various constraints on the development of infrastructure, however, ranging from the direct environmental impact of construction and subsequent operations, through to the difficulty in financing large schemes with very significant demands on public spending, and on to more technical and institutional considerations, such as the “strategic capacity” of the organizations charged with managing infrastructure and corresponding services effectively (Docherty and Shaw 2011). Given the sheer complexity of the myriad intersecting economic, environmental and social impacts of infrastructure development, formulating a coherent and credible infrastructure strategy is often characterized as being a “wicked problem”, one that policy-makers consistently find hard to resolve (Conklin 2006; Rittel and Webber 1973).

In order to shine a light on some of the most pressing issues at stake, this chapter focuses on the development of transport infrastructure, especially in cities, for it is there that many of the critical debates have come into the sharpest focus. Many of the reasons for this are long-standing and have their origins in the dominance of the private car in meeting the demand for mobility. The environmental implications of reliance on the car for the scale of urban transport infrastructure necessary to accommodate such a mobility system are enormous. As a consequence, in the developed world a highly contested environmental politics has grown up over several decades around the impact of road building on the local and global environments. There have been signs in recent years that the developed world may have witnessed “peak car” (Goodwin 2011),

with car use levelling off and even falling, and therefore the balance of the debate may be shifting fundamentally. Nevertheless, the explosion of car use in the fast-growing cities of the Pacific Rim and elsewhere in the developing world keeps the issue of the environmental impact of transport infrastructure (especially roads) very much alive (Newman and Kenworthy 1999; Lyons and Loo 2008).

Transport and the reproduction of the space, society and the economy

Transport is perhaps the most critical technological and social phenomenon to shape the spatial organization of human activity. The underlying morphology and structure of our economic and social systems is in large part determined by the transport technologies available to each generation. Each new wave of technological progress brings additional opportunities for enhanced mobility, but at the price the impact of that technology – and the infrastructure that supports it – has on the environment. The most important technological innovation underpinning the environmental politics of infrastructure in recent years remains the automobile. Since its appearance on the streets of early twentieth-century towns and cities, the car has utterly and perhaps irrevocably transformed the spatial organization of the economy and society. Its potential to introduce a step change in the “supply, demand, efficiency, speed and opportunities for movement” (Daniels and Warnes 1980: 4) over what existed before – such as the horse, and later electric tramways, in many Western cities, or the bicycling culture of twentieth-century China – means that the physical structure of most modern cities is constructed in the image of the car.

There is no doubt that the car is a technology that has transformed the quality of life of hundreds of millions of people since its invention. This transformational effect is more than the direct personal advantage (or “user benefit”) of being able to choose where and when to travel relatively unhindered: by permitting daily travel over much greater distances than would otherwise be possible, the car enabled many more people to live in their preferred (often suburban) environments than would have been facilitated by rail-based modes alone. In time, the development of a spatially differentiated pattern of land use with increasing separation of homes and workplaces has generated a complex web of daily movement *between* suburbs rather than just to and from the urban core, and kick-started the development of other culturally significant developments that have come to characterize modern life around the world, such as the supermarket and shopping mall (see Chapter 16).

Although mass car ownership undoubtedly facilitated structural adjustments in the labor and housing markets and in other economic domains that stimulated enhanced productivity (Meyer and Gomez-Ibanez 1981; Pucher and Lefevre 1996), the rapid growth in car use in the 1980s and 1990s also brought a range of negative externalities associated with “unrestricted mobility” – especially environmental and social costs – to the fore (see, e.g., Cahill 2010; Sheller and Urry 2006). It is beyond the scope of this chapter to address fully these implications of the rise of the private car, except to note that its negative impacts on the fabric of neighborhood life – primarily local air pollution, noise, threats to pedestrian (especially children’s) safety and the sheer level of severance implied by fast-moving traffic in the urban setting – have been fundamental in the story of urban decline ever since Jane Jacobs’s (1961) seminal book, *Death and Life of Great American Cities*. More recently, the pinnacle of car-oriented developments, such as the sprawling, low-density business parks and gargantuan shopping centers that line the urban fringe of many cities around the world, continue to undermine the economic and social vibrancy of many places (see, e.g., Gärling and Steg 2007; Haywood and Hebbert 2008; Shaftoe 2008).

At the same time as the first explorations of the social impacts of the car were being understood, transport economists, engineers and planners were beginning to envisage the sheer scale

of infrastructure investment that would be required to capture fully the potential reduction in the friction of distance presented by the car running at full speed. Traffic congestion had been a fact of urban life since the days of the horse and cart, but the explosion of car ownership and use in the 1960s brought the problem to the fore, and new computing technologies revolutionized the process of taking major planning decisions by informing them with detailed economic models. These models suggested that very important economic efficiency gains could be achieved by realigning the built environment to accommodate the huge increases in road traffic forecast over the succeeding decades. Such was the level of improved economic performance – in large part envisaged due to the strong liberalizing force on the labor and housing markets promised by increased car-based accessibility – that governments around the developed world stepped up the pace of planning for a car-based future (see Glaeser 2004; Laird et al. 2005).

In much the same way as Jane Jacobs's *Death and Life* set the terms of the debate about the social implications of a future predicated on unrestrained car use, the publication two years later of *Traffic in Towns* (Ministry of Transport 1963), a report produced for the UK government by Colin Buchanan, a British engineer and planner, lit the touchpaper for a heated discourse on the environmental consequences of road building that was to last for 30 years or more in the UK and beyond. *Traffic in Towns* became internationally famous in large part due to its lavish illustrations of the changes in the physical structure that would be required of British towns and cities if they were to adapt to accommodate unrestricted use of the car. Such was the striking nature of the report's images – one of the most celebrated depicts Tottenham Court Road, a main radial street in central London, transformed into an expressway with segregated bus lanes and stops, with pedestrians relegated to elevated gangways – that the report was often wrongly perceived as a polemic in favor of the car or even the epitome of "motorway madness" (see Starkie 1972).

The report's simple yet controversial message was that the inevitable outcome arising from the scale of road traffic growth envisaged over the next 40 years was one of very severe congestion, and that if this congestion was to be tackled by building new road infrastructure, then the scale of this task, and the impact of such development on the urban environment, would be immense. Buchanan himself was well aware of what was at stake, having previously published a book characterizing the motorcar as a "mixed blessing" (Buchanan 1958). What was critical about the analysis in *Traffic in Towns* was that Buchanan had identified how a "car-owning democracy" had emerged: "It seems futile to deny these things [the advantages of motorcars]. The motor vehicle is a remarkable invention, so desirable that it has wound itself inextricably into a large part of our affairs. There cannot be any going back on it" (Ministry of Transport 1963).

The importance of the concept of the car-owning democracy is that it neatly summarized how the demand for personal car-based mobility was, as far as could be foreseen, likely to be insatiable given the combination of sustained economic growth through the long boom of the postwar years. As more and more people experienced the economically, socially and emotionally transformational effects on their perceptions of wellbeing generated by seemingly unrestricted car travel, car ownership and use would continue to rise for many decades until some kind of saturation point was reached.

Juxtaposing Jacobs's and Buchanan's seminal publications summarizes the environmental politics of road building that has dominated the infrastructure debate for over half a century in many countries. On the one hand, the welfare benefits of infrastructure development are of huge value for some people since the range of economic and social opportunities available to them increase substantially. But for others – often those on low incomes or those who have a disability or limiting illness – no such opportunities arise, so that over time the advantages brought about by infrastructure development increase social polarization and inequality. This is because, over time, employment, healthcare, retailing, leisure and other services have tended to

move to the most car accessible locations, leaving behind impoverished neighborhoods with little or no local service base, and a population dependent on dwindling public transport for its mobility needs. Added to this, the negative externalities of infrastructure development tend also to fall on disadvantaged groups: one of the main critiques of the splurge of urban road building in the middle years of the twentieth century was that new roads enabled the rich to commute further, whilst the roads themselves were built through declining older communities because the land was cheap, and the social infrastructure had already declined sufficiently so that no meaningful opposition movement could become established (see Lucas et al. 2008).

The “environmental turn”

In many countries, the core concern of transport policy, especially for roads, remained that of building as much new infrastructure as possible to (try to) meet demand well into the 1990s. Known colloquially as “predict and provide”, the basic premise of this policy approach was that rising standards of living would inevitably generate increased levels of car ownership and use (Goodwin 1999), a trend that was already well established by the time of the wholesale quantification of transport planning and modeling in the 1960s. In the United States, road building was given an additional stimulus from the 1950s onwards by the Eisenhower Program of Interstate Highway building, a policy originally intended to provide the means of dispersing the population quickly from major metropolitan centers should a military conflagration between East and West turn the Cold War hot. In many countries of Western Europe, the density of settlement rendered such a civil defense justification for road building redundant, although the perceived logics of economic growth nonetheless supported a similar program of major inter-urban highway building well into the 1970s.

By the end of the 1980s, however, external conditions were beginning to change. Governments were finding it increasingly difficult to muster the resources to keep pace with their rhetorical commitment to (road) infrastructure development: the UK government’s policy document, *Roads to Prosperity* (Department of Transport 1989) – proudly championed by ministers as “the largest road building programme since the Romans” (Department of Transport 1989; see also Hansard 1994) – quickly became something of a hostage to fortune as the policy system’s ability to actually deliver this scale of investment was called into question. Yet this was fully ten years after the Organization for Economic Cooperation and Development (OECD), having reviewed similar post-oil crisis investment programs around the world, warned that a strategy focused on road building would be unlikely to solve the transport problem in any meaningful way:

since further extension of the road infrastructure to meet growing demand for car use is not everywhere possible for urban planning and financial reasons, nor desirable from environmental, energy and often social policy standpoints, the only remaining transport policy option is to swing modal split in favor of public transport by investment and/or pricing policy measures.

(OECD 1979: 149)

At the same time as the financial and other policy practicalities of continued road infrastructure expansion were becoming readily apparent, a number of critical international discourses were emerging to challenge the economic orthodoxy that infrastructure expansion was a stimulus to growth without substantial negative *environmental* externalities. The first such critical turning point was probably the publication in 1987 by the United Nations World Commission on Environment and Development (WCED) of *Our Common Future* (commonly known as the

“Brundtland Report” after the Commission’s chair, the former Norwegian Prime Minister Gro Harlem Brundtland). For the first time, this report set out in plain language the scale of the environmental problems that could arise if contemporary socio-economic development trends were left unchecked. It noted – in no uncertain terms – that there was “a growing realization... that it is impossible to separate economic development issues from environment issues...and environmental degradation can undermine economic development” (WCED 1987: 3). The report paid special attention to the question of the rate of depletion of natural resources, especially fossil fuels, and increasing pollution of air (see Chapter 30), water (Chapter 34) and land (Chapter 33). In a now-celebrated passage, the WCED offered a definition of sustainable development that survives to this day: “sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED 1987; see Chapter 15).

If the “environmental turn” in the politics of transport infrastructure development can be traced to any particular event or point in time, the collective realization of the potential scale of a future environmental crisis, and transport’s contribution to it, following the publication of the Brundtland Report is that moment (see Baumol and Oates 1988; Pearce et al. 1989; Ison et al. 2002). It was after this intervention in the global debate that the term “sustainability” became commonplace in the objectives of government policy and more widely in political discourse (Goodwin 1999; see Chapter 15). The implications for the politics of transport and the infrastructure development that supports it were particularly stark, since the task of “satisfying current transport and mobility needs without compromising the ability of future generations to meet these needs” (Black 1996: 151) was especially challenging given the sheer scale of resource consumption associated with the transport sector (see also Greene and Wegener 1997).

In the years following the WCED’s report, a number of further key policy events and documents provided momentum for the environmental turn. The 1989 meeting of the European Conference of Ministers of Transport was perhaps the first significant international event to debate the emerging scientific evidence on the role of transport in diminishing environmental sustainability, particularly through the emission of greenhouse gases (see Chapter 28). Further events, most importantly the UN Earth Summit held at Rio de Janeiro in 1992, cemented the policy realization that the construction of new infrastructure to stimulate additional demand for mobility was a critical issue that had to be addressed. For some governments, this juxtaposition of events was not necessarily a bad thing. In the UK, for example, the explosion of environmental awareness that led to the celebrated anti-roads projects campaigns of the 1990s coincided with a sharp reduction in the resources available for new infrastructure development. An unusual alignment of policy and popular objectives therefore emerged, with government articulating quite radical policy prescriptions including a definite swing away from new infrastructure construction as the primary instrument of transport policy, towards increased transport taxes (especially on fuel), and stronger planning policies aimed at reducing the demand for transport in the first place (see, e.g., RCEP 1994).

The contemporary environmental politics of infrastructure development

As the scale of key challenges such as climate change (Chapter 28) and the rate of natural resource depletion (Chapters 35, 36, 37 and 38) has become more apparent, infrastructure development policies have come under increasing pressure to justify themselves by means other than traditional economic cost–benefit models that assume gains from ever-greater consumption of goods such as mobility (see Chapter 16). The difficulty is that the basic environmental politics of the sector remain unchanged. On one side are those actors (in fact a wide variety of individuals,

businesses and other organizations) that stand to gain from a continuation of the status quo in terms of the expansion of infrastructure provision (either by constructing or using it) (see Chapters 13 and 14). On the other side are those who are (relatively) disadvantaged by this process, for example when it causes them to fall behind other locations. Both sides are also open to influence from voices with strident, sometimes normative, positions. The pro-infrastructure development lobby is supported by those seeking direct stimulus in the post-recession economy through boosting the construction sector, and by other interests, especially in the USA, Canada and Australia, who reject the new scientific orthodoxy on climate change and carbon emissions, and for whom any policy response to reduce the importance of creating new infrastructure capacity is misguided as a result (see Chapter 28). Those advocating less focus on infrastructure development and more on reducing demand for energy are often clearly linked to a “deep green” political and philosophical standpoint (see Chapter 25), which risks being accused of being no more than a luddite reaction to modern problems and opportunities.

An example of this clash in approaches can be found in the debates surrounding the introduction of High Speed Rail (HSR) in the USA and UK. Proponents of this very large-scale infrastructure intervention point to its claimed economic returns in terms of creating new agglomeration benefits by bringing firms, their suppliers and customers closer together (see Martin 1997; Gutiérrez 2001; de Rus and Nombela 2007; de Rus 2008). Although some view HSR as an environmentally positive idea in that it abstracts mobility from the car and especially the airplane, many of those against it point to the fact that, whilst potentially “better” than aviation or the car in some key respects such as carbon emissions, these benefits are not as clear-cut as might be imagined, and in any case are dwarfed by the environmental degradation associated with construction (see Janic 2003; Givoni 2006). Perhaps worse, they argue, is that HSR is just the latest multibillion dollar example of applying an expensive, engineering-led sticking plaster to more profound issues of how we structure society and the economy, which needs a much more incisive debate than whether people fly or take the train to business meetings.

Underlying this conflict is the fact that many governments have been relying on the so-called “technological fix” (see Chapter 18), that is the emergence of low-carbon technologies, perhaps most importantly electric vehicles, rather than more politically difficult policy measures aimed at reducing the demand for mobility (or energy, electricity, water etc.) to meet the environmental targets stated in the Kyoto Protocol and subsequent international agreements. Whilst some progress is being made in, for example, the fuel efficiency of conventional internal combustion engines and the development of hybrid vehicles, the widespread adoption of zero-emission (at the point of use) “ecocars” remains some way off (Banister 2000). The unfulfilled promise of electric vehicles highlights the fact that any kind of future-casting for a complex policy area is extremely difficult, but for transport and infrastructure development this is especially so, given the scale of the critical uncertainties at play (see Chapter 18). Moving forward, the environmental politics of transport and infrastructure development seem most likely to revolve around two different potential futures. The first is one in which the “technological fix” becomes a reality, with the widespread “greening” of the current transport system through the wholesale adoption of electric vehicles and other complementary technologies so that the carbon emissions problem with respect to transport is “cracked”.

The second future is a much more challenging one in which the greening of the car – which in itself does nothing to address issues of congestion or social externalities, and indeed might be argued to make them worse given one of the policy justifications for car restraint would have vanished – makes way for a different “mobility regime” (see Geels et al. 2011). Such a new regime, rather than conceptualizing the environmental crisis as something to be “solved” through successive waves of technological innovation (leading to renewed economic growth), poses more

fundamental questions about how the economy and society organize themselves in critical domains such as the demand for energy and mobility (see Chapter 28). In this alternative future, environmental politics is about a truly cross-cutting endeavor to reduce the impact of the transport system on the environment in a “first principles” approach firmly rooted in the rhetoric of Brundtland and other key foundation documents (see Anable and Shaw 2007). Such a perspective is about much more than “just” greening the car, envisaging instead a large-scale reorganization of the transport system across all modes and linking into other realms of public policy especially health and wellbeing. Achieving this level of structural change in many of the key processes that govern the economy and society is a huge task, of the same order of magnitude as the changes brought about by the adoption of the automobile itself.

Contested politics

As other chapters in this book demonstrate, the concepts of sustainability and sustainable development (see Chapter 15) are open to substantial criticism, not least because they are often actually rather vague and can be differentially interpreted by different organizations and interests (see, e.g., Pezzoli 1997; Redclift 1987; Williams and Millington 2004). The famous definition of sustainability advanced by *Our Common Future* – development that “meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED 1987: 8) – is undoubtedly well intentioned, but it can be and has been picked apart without too much difficulty (see Chapter 15). For example, when examining the different definitions of sustainability in the transport domain, Bill Black (1998: 337) made the important point that “there is no limit placed on ‘future generations’ and nothing is sustainable forever”, so the actual value of the Brundtland Report in informing policy decisions might be less than imagined or hoped for.

The contemporary context of a highly uncertain economic future, given the depth and length of the post-2008 global financial crisis, coupled with the apparent lack of real appetite for international coordination of measures designed to limit climate change (brought into stark relief after the failure of the 2009 UN Climate Summit in Copenhagen; see Chapter 28) suggest that the future politics of transport and other infrastructure development will be even more problematic than before. Most governments were struggling to meet the first wave of carbon-reduction targets for the first half of this century put in place in the 2000s (see, e.g., Anable and Shaw 2007; Chapman 2007). This generates an immediate layer of political conflict between those who want to see much swifter progress towards existing targets, with a view to setting even stiffer ones, and others who question the policy system’s capacity to deliver the highly complex set of interventions required to decarbonize the economy, or even individual sectors within it such as transport, and those who are simply opposed to mainstream climate science and carbon reduction on ideological grounds (see Chapter 28).

Perhaps the most important issue for the politics of infrastructure investment at the current time arises from debates on whether economic recovery will be robust and resilient enough worldwide to prompt a return to a “business-as-usual” policy approach to growth and competitiveness of which substantial investment in infrastructure is a key part. Indeed, in many countries, there is now a strong political argument for increased investment in infrastructure as a means to *recreate* previous conditions of economic growth; such arguments were central to elections in 2012 in the United States and the Netherlands, for example.

If we assume that the impacts of the financial crisis and post-2008 recession are sufficiently deep and long-standing so that the rate of growth in developed economies remains modest over the medium term, then a number of critical policy questions for infrastructure development arise.

First is that the conventional economic case to invest in upgraded and expanded infrastructure becomes substantially weaker under conditions of reduced future demand. For several decades, the increasing demand for transport has been very closely tied to the underlying rate of economic growth. Therefore, with low or zero growth, we might expect the demand for mobility to remain relatively static; indeed it has actually fallen in several countries across the world during the post-2008 recession. More than this, the lack of a growth “problem” to “solve” through the construction of new infrastructure capacity calls into question one of the main policy factors for the justification of such investment over the past two decades or so, namely that city and regional “competitiveness” is dependent on increasing the scale of key infrastructure assets to attract and accommodate growth. With widespread low-growth conditions, these assumptions might have to be rewritten, perhaps to focus more on the resilience and quality of existing infrastructure instead of capacity expansion (Curtis and James 2004).

More broadly still, the depth of the financial crisis has prompted at least the beginnings of a debate about how the (urban) economy might be organized in future, and to what extent future wealth creation will depend on particular kinds of transport and other infrastructure. Even if governments have the finance available to maintain infrastructure investment or, indeed, have actively prioritized such spending in an attempt to stimulate the economy, the pace of socio-technical change means that it is by no means certain that the envisaged economic returns on such investment will be realized. Consider, for example, a new road project in the UK completed in 2008, based on a standard 60-year economic forecast of steadily increasing demand for car traffic, but which has for the first five years of its existence seen *falling* traffic levels.

In many ways, this is a contemporary version of the debates over the practical definition of sustainability outlined above. Crucial here is whether the very notion of “sustainability” itself will be reconfigured so that the roles of socio-technical systems dependent on substantial infrastructure, such as transport, change significantly. As we have seen, “sustainability” is a slippery term (see Chapter 15), and has often been used by different interests in environmental politics to mean quite different things. This is because, as Wackernagel and Rees (1995: 64) argue, the “deliberate vagueness” associated with the narrative of sustainability is “a reflection of power politics and political bargaining”. This perhaps explains why many governments and especially business interests have been able to construct powerful narratives around potentially highly contradictory ideas such as “sustainable economic growth”, even to the extent of arguing for increased investment in aviation, which is one of the most polluting forms of transport and heavily dependent on the very large infrastructure requirements of airports and their associated surface access systems (see Chapter 13).

At the other end of the environmental–political spectrum, the so-called “deep green” standpoint, which elevates the protection of the environment above all other public policy priorities, is not without its philosophical and practical problems (see Chapter 25). There is something intuitively powerful in the public’s minds about the notion that, as Black put it, “nothing is sustainable for ever” (Black 1998: 337). At a more immediate and practical level, implementing the kinds of taxation and regulatory policies that would deliver profound changes in behavior, from large rises in fuel tax to reducing aviation capacity and even general carbon rationing, on which many deep green positions depend, would seem almost impossible in a democratic society. Mainstream politicians have for decades been highly skeptical; even to propose such radical policy changes would be electoral suicide given public doubts over the need for them in the first place, and the extent of the real and immediate impact on lifestyles that their implementation would entail.

As with most political debates, those of environmental politics as they relate to transport and infrastructure are likely to be fought out in some kind of “center ground”; that is, in terms of

those policies designed to deliver better sustainability but which are acceptable to mainstream opinion in practice. Given that transport is perhaps the one sector that is proving the most difficult to decarbonize (in the developed world at least), the scale of this challenge should not be underestimated. As long as conventional definitions of increased prosperity based on rising gross domestic product and the increase of production and consumption associated with economic “growth” are promoted, there will be significant political pressure from business and supporters of the free market to further expand infrastructure provision (see Chapters 13 and 16). Whilst some of the individual strategy and project choices might be different in future under this scenario – a focus on high speed rail rather than aviation for inter-urban transport, for example – it is very difficult to see how the overall environmental impact of the transport system would be reduced substantially, if at all.

Although the apparent scale of the challenge might suggest that transport’s status as a “wicked problem” is well deserved, this is not to say that the politics of transport and infrastructure cannot be oriented towards a more environmentally sensitive set of objectives. Indeed, it may turn out to be the austerity policies of many countries facing medium- to long-term constraints on the availability of public resources for major infrastructure investment that bring about this change in direction. When resources are tight, decisions over the investment of public funds are placed under more scrutiny than ever, and there is increased scope to challenge orthodox assumptions on the value of certain large infrastructure investments – roads or railways, for example – versus alternative transport opportunities such as better provision for walking and cycling.

In many ways, we have been here before. In the 1990s, a similar juxtaposition of increased environmental awareness following critical events, such as the 1992 Rio Earth Summit, with recession and reduced infrastructure investment capacity occurred in many Western countries. Under these circumstances, the development of a more “balanced” approach to transport policy and the role of infrastructure development began to emerge. Often known as the “New Realism” (Goodwin et al. 1991), this approach argued that, in cities at least, the primary benefit of the car, that is its “go anywhere, anytime” flexibility, was beginning to be substantially eroded by the problem of traffic congestion and the consequent delays to and unreliability of journeys. Against this backdrop, the conventional policy response of trying to add more infrastructure capacity to meet demand was at best futile – research increasingly demonstrated that additional capacity simply filled up with formerly suppressed demand – and at worst highly damaging given the local environmental cost of infrastructure construction, which destroyed historic urban places and/or areas of green space in the city. Alternative policy prescriptions were therefore required, which comprised both a shift away from infrastructure-intensive modes of transport (especially the car) and also the introduction of pricing mechanisms such as congestion charging so that demand could be actively managed.

Conclusion

Twenty years on from the New Realism, the core challenge for the environmental politics of transport and infrastructure remains that of how to maintain the important economic and social benefits of the systems that have developed on the back of decades of investment in infrastructure, such as mobility. It is now increasingly clear that the “boom” conditions of much of the 1990s and 2000s obviated the need for a deep (re)analysis of this domain of environmental politics. The ready supply of money for capital investment meant that, for many countries across the world, prioritizing transport infrastructure was an easy choice, whether part of a comprehensive growth plan as in China or a shift towards a more “sustainable” distribution of resources

by the targeting of (even) more money towards urban metro and transit networks in Europe and North America. In the latter case, policies pursuing such high technology solutions to the transport “problem” were doubly attractive given the environmental imperative to offer an alternative to the car, and to demonstrate the “competitiveness” of cities in a context where locations across the world were actively aiming to out-do each other on the attractiveness of their infrastructure “offer”.

But as the post-2008 recession dragged on, the ground rules for the politics of infrastructure were changing. The Pacific Rim has seen an unprecedented level of investment in infrastructure in an attempt to “catch up” with the developed West. But as the rate of growth in China and elsewhere in the region moderates over time, such investment may be harder to sustain. In the West itself, if the recession transforms into an extended period of real austerity, fundamental changes in the political debate may occur. Limited resources for the development of new infrastructure make the prospect of pricing more attractive, whilst at the same time consumers will demand that if no increase in supply is possible, then at least the quality and reliability of the existing networks should be improved.

In future there may be a more radical reassessment of the politics of infrastructure whereby the dependence of socio-economic systems on expensive and fragile infrastructure networks is reappraised. It is not too hard to imagine a scenario in which a few critical shifts in key variables, such as the price of oil or in energy security more generally (see Chapters 28 and 19), begin to radically alter behavior patterns to the extent that they no longer match our infrastructure inheritance. Under these conditions, it will take a very “sophisticated policy mix” (Eddington 2006: 6) to sustain the kind of expansionist infrastructure policies to which modern societies have become accustomed.

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