A Future Beyond the Car? Editorial Introduction

How to mitigate, counteract or eliminate the problems created by cars and traffic is the challenge at the heart of most transport research and many past articles published in this journal. This special edition turns this focus towards the future. The suggestion of a future beyond the car may seem extreme or utopian in a discipline and a world preoccupied with the present. But as Goodwin suggests in the next article, the assumption that trends observable today will continue indefinitely will often seem short-sighted from some point in the future. How many of those involved in the rail and bus industries would have predicted the rapid transition from growth to decline in rail and bus use after World War 1 and World War 2 respectively?

Whether such a turning point has already occurred in the use of the car is the issue of uncertainty at the heart of that article. One implication of this uncertainty, Goodwin suggests, is that policies which are "robust under any of the uncertain futures are to be preferred." In the context of 'peak car' this statement applies in the short-term: with the benefit of greater hindsight the causes of the recent fall in car use and the direction of future trends will become clearer. In the meantime, according to Goodwin, commitments to "frozen infrastructure" should be avoided.

Over the longer-term, uncertainties about behaviour change are overshadowed by the issue of climate change. Following the failure of the Copenhagen conference to agree binding global targets, the scientific consensus would suggest that disruptive – probably catastrophic – climate change is becoming progressively more likely.

In the third article in this edition, Hillman provides a sobering assessment of the seriousness of the situation, the inadequacy of current attempts to address it and the fallacious assumptions underpinning public policy across the developed world. The only effective solution, he argues, is 'contraction and convergence' a concept first proposed by the Global Commons Institute in 1995. Amongst other fundamental changes to western lifestyles, this would imply a dramatic fall in car ownership and use.

Attempting a rational discussion of policy options in such circumstances may seem faintly absurd, like a debate in a burning building whose occupants persist in spraying the air with petrol. With no political solution in prospect it may be useful nonetheless to draw a distinction between areas of certainty and uncertainty in climate science and their implications for transport policy.

The areas of certainty include the physical properties of greenhouse gases and their rising concentrations in the atmosphere. The longer this process continues, the greater the ultimate impact on the global climate. The existence of positive (and negative) feedback mechanisms, where rising temperatures release further greenhouse gases are likewise well-established. The nature, timing and regional variations in climate change are all subject to greater uncertainty. The IPCC reports express outcomes in terms of probabilities, mainly based on quantitative modelling. These probabilities are themselves subject to further uncertainties, to factors as yet undiscovered by the modellers. The consequences may be more or less serious, the timing sooner or later, the changes more or less rapid than current scientific knowledge suggests. The future trajectory of global emissions adds a further element of uncertainty.

To devise a comprehensive set of policies robust under all the scenarios this suggests would be impossible but as with peak car, uncertainty has policy implications. The position of some American opponents of action on climate change has been characterised as follows:

> "If we [the US] clean up our environmental act and the Chinese don't we all die anyway and their economy will outperform ours while we live. If we don't clean up our act, we still all die, but at least we have a stronger economy until then."
>
> (Clemons and Schimmelbusch 2007 cited in: Crompton, 2010)

The UK's Chancellor of the Exchequer expressed this argument in a European context in a recent speech to the Conservative Party conference (Osborne, 2011). A similar underlying logic can be detected in some discussion on transport and climate change, particularly in pronouncements from the aviation industry (although the consequences are rarely articulated in this way - see for example: Cheapflights Media, 2011). Threats from climate change cannot be solved by changes in the transport system alone, so why disadvantage one country, or group of countries, and why incur voter hostility or additional costs when 'we all die' anyway? As accumulating evidence weakens the climate sceptic case, variations of this argument are likely to become more common.

Apart from the obvious moral issues this raises, it implies a certainty and a finality which the evidence does not support. Some humans (and other species) have survived catastrophic climate change in previous eras – although people, settlements and civilisations have perished along the way. Even if 'tipping points' are breached, accelerating changes in the climate, our past and future actions will continue to influence the concentration of greenhouse gases in the atmosphere with consequences which cannot be quantifiably predicted with any certainty. This, and the moral imperative (if we are 'all going to die', how would I want to behave?) are two reasons why combating climate change should remain the principal focus of those of us seeking to influence transport policy, even if, as seems likely, the collective global response is too little, too late.

The largest proportion of transport emissions in most developed countries is caused by private cars, which brings us back to the point where this article began, but with greater urgency and a need to look beyond the policies and practices of the present. Those governments which are committed, legally or rhetorically, to climate change mitigation tend to emphasise technological solutions and to downplay systemic and behavioural changes.

In 2008 the UK became the first country in the world to enact legislation committing the Government to emissions targets based on scientific advice. This Act created a Climate Change Committee (CCC) to advise the Government on progress towards those targets and appropriate policy responses. The current target based on that advice aims for an 80% reduction in CO_2 equivalent emissions by 2050. The transport-related reports and chapters from the CCC illustrate this tendency, with graphs showing smooth and rapid reductions flowing from their policy recommendations. The Government is invited to assume the outcomes of these policies will occur in a timely way regardless of vested interests, unforeseen factors or unintended consequences. Thus politically difficult choices concerning car use and particularly aviation can be minimised or avoided altogether (see: Committee on Climate Change, 2009).

Their medium abatement scenario assumes a 44% reduction in emissions from road transport by 2030, mainly through a rapid switchover to electric cars accompanied by a 90% 'decarbonisation' of electricity generation over the same period (Committee on Climate Change, 2010). The carbon budgets recommended in this report were accepted by the Government, and their current approach is broadly in line with these policy recommendations. Though less specific, the recent E.U. White Paper on Transport recommends a similar approach across the European Union (European Commission, 2011). Bent Flyvberg, the leading authority on optimism bias in transport planning has written guidance for the UK's Department for Transport on how to deal with such bias in respect of infrastructure projects (Flyvbjerg, 2004). A similar analysis is clearly needed for the advice of the CCC and the climate change policies of governments in the UK and elsewhere.

One of the few transport issues of which we can be relatively certain over the longer-term is that walking will remain an important and sustainable mode. Under several possible scenarios it may become the principal, or only, mode available to most people. In the decades following World War 2, cities in many developed countries, particularly in North America and Australia, began to sprawl, with design features reducing their 'walkability' at the same time as rising car ownership was contributing to a modal shift from walking to driving. Newman and Kenworthy (1989) was an important milestone in the reaction against those trends, which has influenced planners and governments to varying extents across the world. One of the first cities to embrace pedestrian-focussed transport planning was Copenhagen, influenced by the work of Danish architect and urban designer, Jan Gehl. In the fourth article of this issue Matan and Newman describe how Gehl's work has helped to improve the pedestrian environment in several major Australian cities.

A growing body of literature has sought to measure the multiple benefits of increasing walkability and to make the case for investment in it (e.g. Sinnett *et al,* 2011). The evidence is compelling based on the short-term benefits of principal interest to governments but the strongest arguments for such changes relate to the probability that walking will remain essential to the functioning of cities which survive the ravages of climate change and the threats to movement by other modes.

An article in a previous edition of WTPP (Melia *et al,* 2010) described the range of carfree residential and mixed-use developments around Europe. The significance of these relatively few examples of good practice may likewise become more apparent in the longer-term, in providing models for how cities can begin to move beyond the age of the car.

The article by Ghent in this edition explores the potential demand for carfree developments in the English city of York, chosen for its compactness and culture of walking and cycling. He finds considerable evidence of potential demand, particularly amongst 'Carfree Choosers' – people who currently live without a car by choice.

Carfree developments built so far all involve some degree of compromise with vehicular access, partly because a small minority of their residents continue to own cars, but more importantly for deliveries of various kinds. Small-scale urban carfree areas will be served by the logistics system of the city as a whole. To go further towards an urban environment free from motor traffic would require a completely different system, only feasible over much larger areas. In *Carfree Cities* Crawford (2000) outlined a vision of how new cities could be designed entirely without cars. In the final article of this edition, he addresses this key issue for the design of carfree cities: how to organise deliveries of freight and removal of waste.

He assesses the experience of existing carfree areas, and proposes a system based on light rail deliveries of containers for the carfree cities of the future.

The UK Climate Change Act requires annual reporting to parliament of national performance against the carbon budgets. Whilst the recession has kept emissions below the first budget cap, in its latest report the CCC notes:

> "the underlying trend is one of broadly flat emissions. ..an acceleration in the pace of emissions reduction will be needed if future carbon budgets are to be achieved."
>
> (Committee on Climate Change, 2011)

Thus the UK will become a test-bed for the view that technological change could occur rapidly enough to avert catastrophic climate change. If that view proves over-optimistic, more radical options such as carfree cities may begin to seem less fanciful than they currently appear to governments and the mainstream transport community today.

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