



# **Trends in Car Use, Travel Demand and Policy Thinking**

## Discussion Paper

181

Roundtable

**Phil Goodwin**

Emeritus Professor  
United Kingdom

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## Summary overview

How to cope with cars in towns has been subject to debate for over a century. One approach has sought to cater for the growth in the number of cars by building sufficient roads and parking space and implementing planning practices to accommodate them. This has involved decentralisation, lower density, widely spread suburbs, longer journey distances, and positive feedback (or a “vicious circle”), which has embedded car dependence. There are concerns about harmful consequences, including congestion, noxious emissions, quality of life, health, social interaction, inequitable distribution of costs and benefits, excessive mobility for some and insufficient for others, and more recently, deeply damaging trends in emissions of carbon dioxide causing climate change.

The other approach has aimed at reversing car dependence and encouraging alternative, less damaging forms of movement. This initially focussed on public transport. Recently, attention has also turned toward active travel modes (predominantly walking and cycling) and related changes in land use with higher densities and closer matching of origins and destinations, reinforced by reallocation of road capacity, demand management (sometimes including road user charging), regulation and enforcement. These policies have become a primary focus of most urban policy intentions since the 1990s.

Research on behavioural trends has shown that growth in car use is no longer universal; in some places it has stabilised, and in some it has been declining. Notable cases of decline have included large cities and some small ones, partly because of transport policies. The largest declines are among the travel choices of young people for a complex combination of social, transport and economic reasons, not all of which are understood.

However, urban policy practice is not always fully consistent with these intentions. In the best cases, there have been very successful initiatives in constructing new urban rail services, pedestrianising town centres, and traffic calming residential neighbourhoods. These demonstrate success and popularity, though there are many towns where such approaches are half-hearted or partial. In the majority of towns – even those with the most advanced sustainable transport initiatives – there are three fault lines: a) continued and very large scale spending to produce increases in road capacity in many parts in and between towns; b) continued allocation of scarce space to car parking in preference to other uses; and c) continued encouragement of land use planning for patterns of activity which depend on car use for access.

It is widely thought that this marriage of two incompatible strategies is necessary in order to secure public support. This may be true, though consideration of climate change requires more attention to ways of reducing or counteracting it. It seems that at present, while there are many examples of good practice, there are no cases where all the available policy instruments have been implemented in a consistent way. Opportunities still exist, then, for greater impact.



## Urban transport in an international context

The history of urban transport in much of the 20<sup>th</sup> century is generally viewed as a story of an early predominance of rail and road public transport, progressively overwhelmed by a rising tide of car ownership and use. This reduced the role of public transport, led to a major expansion of road construction designed to cope with motor traffic, and in turn prompted changes in urban design and land use. The latter predominantly increased suburbanisation, which further increased the growth rate of car use. It is only recently that urban planners tried to halt or reverse this trend. This sequential story is not quite accurate. In fact, there has been a long-unresolved history of battles about this trend, even from the early years. Annex A gives a more detailed summary of the ebbs and flows of attitudes to car use for the United Kingdom.

**Table 1. Percentage of trips by each mode, Freiburg, 1976 to 1996**

Year	Car	Public Transport	Bicycle
1976	60	22	18
1989	48	25	27
1996	43	28	29

Source: Von Ungern-Sternberg (1997).

Even so, it is true that a dominant tendency in most towns and cities was an increase in car use. For over 50 years, the negative effects have been concerning. While many cities continued trying to cope with the growth, even from the 1970s a few cities operated deliberate policies intended to reverse the process. One of the most influential early examples was Freiburg in Germany, one of a group of towns consciously adopting a range of measures sometimes described as “anti-car”, notably large-scale pedestrianisation of the central area, and reinvestment in public transport. Table 1 shows some early successes (Von Ungern-Sternberg, 1997).

### International policy concerns

Informed by such discussions, mostly relating to urban contexts, there were important developments in some national discussions, which broadened to include international organisations. The European Conference of Ministers of Transport, ECMT (the direct predecessor of the ITF) took on a leading role. For example, in 1989, ECMT convened a meeting of transport ministers who, on behalf of their governments, unanimously adopted Resolution 66 on transport and the environment. The full text, now available online, is reproduced as Annex 2 in OECD (1999).

Figure 1 shows extracts of the 1989 statement, mostly related to urban transport policy, show themes which were to become key elements of strategic transport policy debate to follow. However, some of the governments who participated in drafting the statement had a hard time converting it into practice, as it was usually controversial and sometimes abandoned. It is notable that governments recognised the relevance of transport policy to climate change even at this very early date, though it failed to become a salient influence on urban transport policy until much later.

**Figure 1. Extracts from European ministers' Resolution 66 on transport and the environment, 1989**

"...Governments should review the use of taxes and/or regulations for motor vehicles to ensure their consistency with the goal of reducing fuel consumption and emissions..."

"...a full range of possible measures that can be taken to reduce transport's contribution to the "greenhouse effect" be set out together with the costs and practical problems of implementing them..."

"...that traffic management be used to further environmental objectives in transport policy, both in relation to demand management and in relation to changing modal split"

"...it is necessary, in accordance with the 'polluter pays' principle, to introduce systems of supplementary charging for environmental damage caused..."

"...that effective and acceptable means of reducing the use of the private car in urban areas need to be applied..."

"...that assessments of infrastructure investment proposals should include traffic and environmental evaluations of the alternatives, including...extending railway or other public transport infrastructure and that of not building the infrastructure."

Source: OECD (1999).

## Transmission of experience between countries

Countries have tended to form urban policy at a local or national level rather than directly look to international policy statements. International experience has also effected local practice through the informal transmission of best practice by visits, holidays, and the movement of specialist researchers between countries. As an example, Hass-Klau (1990, 1992, 1993) reported European initiatives on town centre pedestrianisation and traffic calming and took British town planners on visits to the Netherlands, Germany and elsewhere. Such activities, mostly organised at the local government level, had significant influence on changing hypothetical discussions into practical ones. It also widened the transmission of knowledge about the specific effects of implementing policies, including evidence reviews that traffic-reducing measures in town centres could increase the centre's economic success. During the 1990s-2000s, there were also a number of substantial evidence reviews, which gave more confidence in moving away from car-based transport infrastructure and policies. Most noticeable among them are the following:

- SACTRA (DfT 1994), summarised in Goodwin (1996), which showed that building more road capacity in conditions of congestion could increase the total volume of traffic with little or sometimes no relief from congestion
- Cairns et al. (1998), with evidence that reallocating road capacity to bus priority, pedestrianisation or other improvements resulted in some degree of "traffic evaporation", reducing the predicted chaos to a manageable level

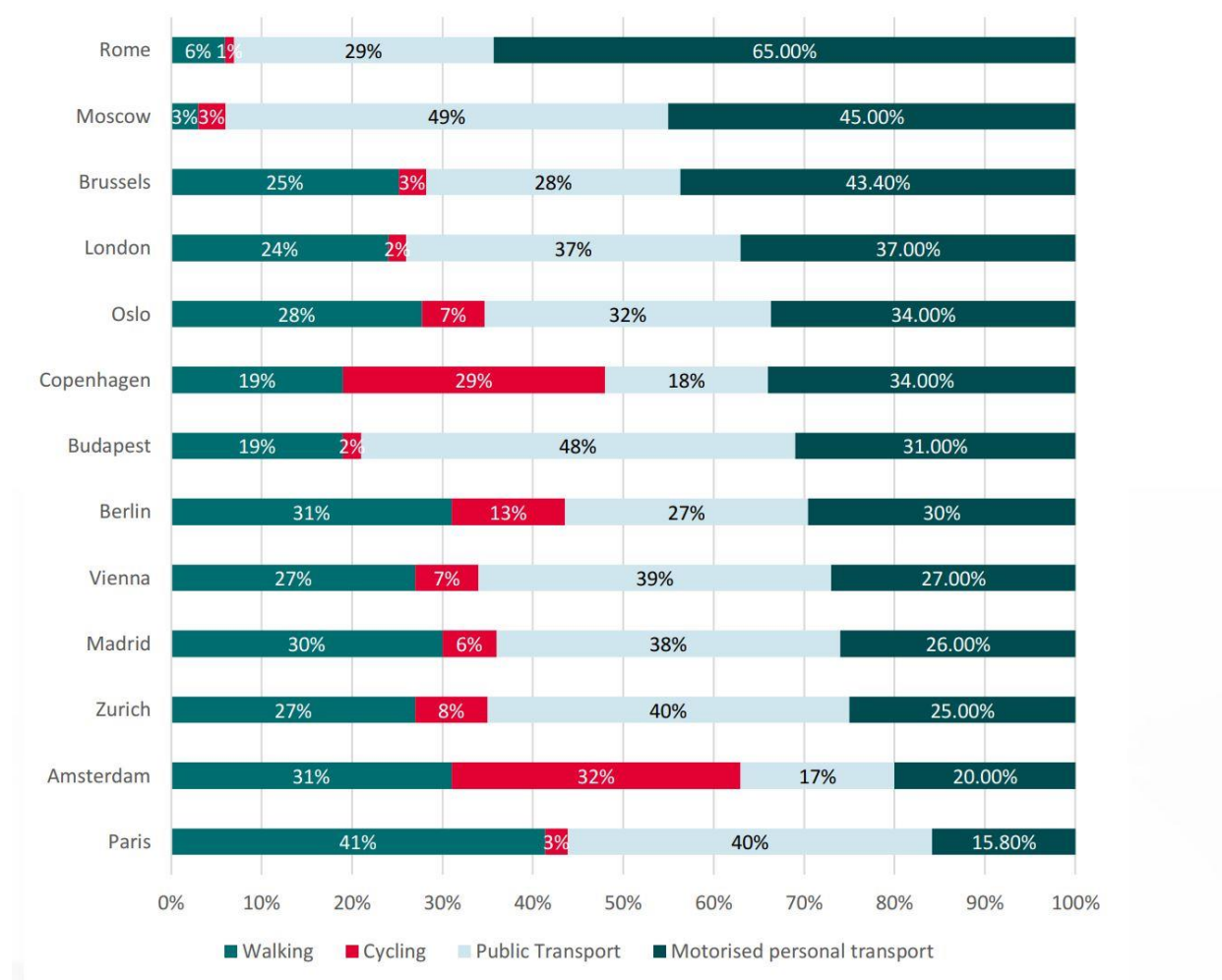


- Cairns et al. (2004), with evidence that “soft” or “smart” measures of encouraging modal shift by information, guidance or publicity could work, albeit better if they were supported by improved travel opportunities.

## Variation between countries and cities

A problem in discussing urban transport trends and policy at an international meeting is that there is no established international database of local evidence. Every country, and indeed every town, has had its own specific transport setting with particular features, which derive from its geography, history, social norms and political battles. For many years, the national administration assumed that the early growth of mass car ownership in the United States represented a sort of common future towards which other countries would develop. That assumption is now mostly rejected in European countries and much of the developing world (and indeed challenged in the United States itself), but the trajectory it suggested forms part of the history of most urban areas.

Figure 2. Wide range of levels of car use in 13 major European cities



Source: Kodukula et al. (2018).

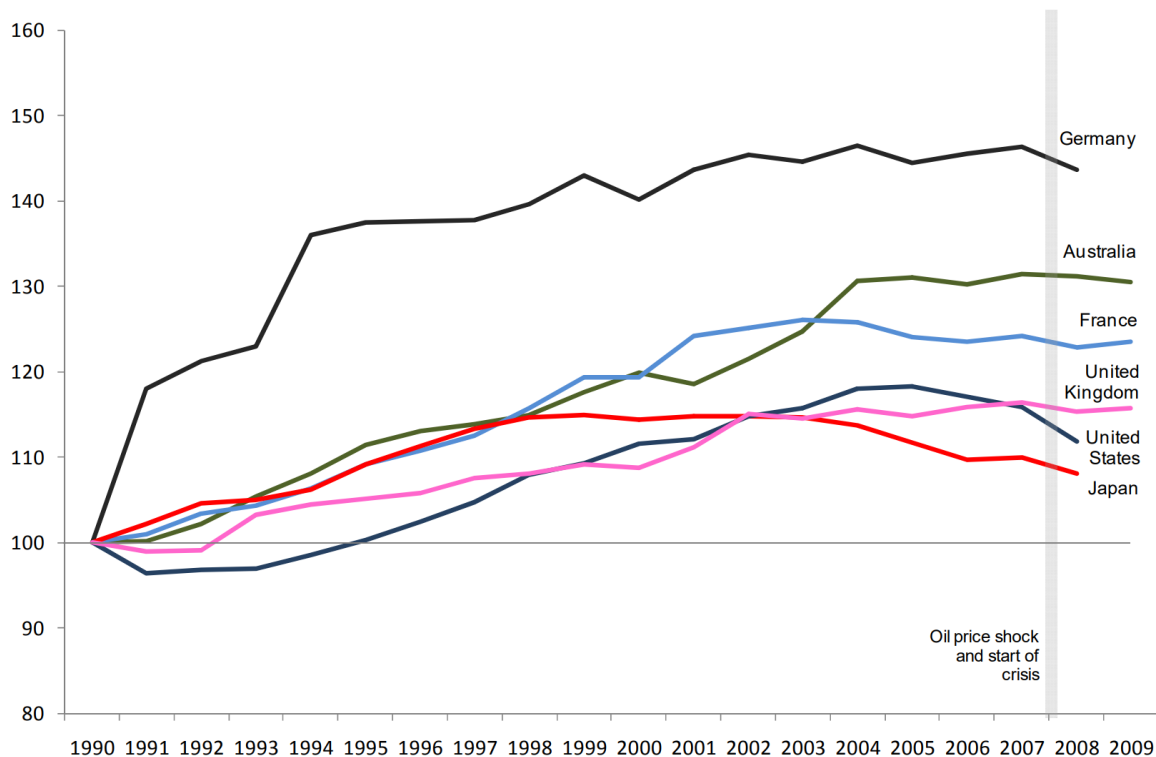
Within Europe, there are some common features, but there are distinct differences between, for example, Germany, the Netherlands, Denmark, Sweden, Norway, Spain, Italy, France and the United Kingdom, each of which took their turn in defining “leading thought”. Among the large cities, Paris, London, Amsterdam and Munich have had very different approaches to car use. Their inspiration has often been smaller, self-contained towns and cities with an important civic culture, such as the key developments in pedestrianising town centres, for which Nurnberg and Freiburg were early inspirations. Some of this is considered further below.

Kodukula et al. (2018) collected data from a wide variety of different sources on car use in major European cities. This information was published by Unearthed, Greenpeace. Figure 2 shows the wide range of differences among those cities. They show the percentage share of trips by different transport modes in cities from Paris to Rome. As a caveat, there are difficulties of comparability of data due to differences in collection methodology, and the situation has altered quickly in some cities. Nevertheless, the difference is marked.

### Peak car

By about 2010, attention focused on increasing evidence that the long-term growth in car-use might have slowed, stopped, or even reversed – a phenomenon known as “Peak Car”. In its early stages, the discussion around this mainly looked to statistics at a national level. The ITF (2011) compared the growth in car and van use in national statistics for six developed countries and noted signs of a levelling off and maybe even a decline.

Figure 3. Signs of saturation in car and van use 1970-2009



Source: ITF (2011).

This result seemed to be consistent at least with the earlier policy objectives, and may be partly a result of them, though this was to be contested. One hypothesis was that the statistics showed signs of reaching “peak car”, which became an important debate.

Several countries reported the observation that car use seemed to have slowed, stopped growing or perhaps even reversed. The ITF convened a Roundtable on “Long Run Trends in Travel Demand” (ITF, 2013). The topics in the 2013 Roundtable foreshadowed some of the themes of the 2019 “Zero Car Growth? Managing Urban Traffic” Roundtable for which the present paper was written. The 2013 Roundtable presented detailed research from Germany, the United States, the United Kingdom, the Netherlands, Sweden and Australia. It was followed by a Special Issue of the journal *Transport Reviews* 2013, which included articles by some of the same authors who participated in the Roundtable. Goodwin and Van Dender (2013) give a summary of the themes in both the ITF Roundtable and the *Transport Reviews* 2013 Special Issue, and identify a number of common threads, of which the most prominent was a tendency for young people to be less car-oriented than previous generations.

## Insights from segmentation

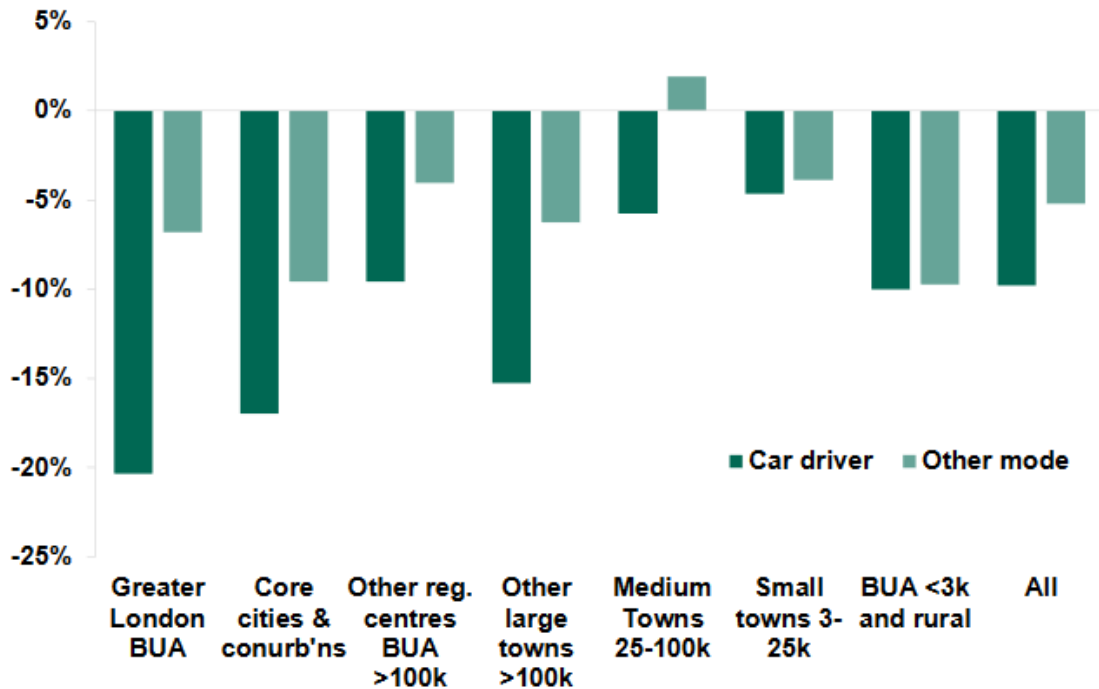
### Urban areas

In retrospect, one weakness of the arguments about “Peak Car” in the period from 2010 to about 2015 was that they mostly focussed on trends at the national level, so that explanatory factors were discussed also in terms of national statistics, for example national income, population, and fuel prices. There were suggestions that the observed levels of demand could be adequately explained without changing established forecasting models based on aggregate demand elasticities.

A criticism of this approach may be seen by considering the logical expectation that if the national level of car ownership or car use is stable, and if we know that there are some areas or groups for which it is increasing, then there must be other areas or groups for which it is decreasing. Since the underlying reasons for increases and decreases will at least be opposite, and may be quite different, it follows that the scope for seeking to understand “peak car” as a national aggregate concept is limited. Subsequent analyses by the UK Department for Transport and others (i.e. Vine et al.; Chatterjee et al.; Headicar, Marsden et al.) profoundly changed the interpretation of the aggregate trend. These analyses looked below the national level and segmented by various socio-economic variables (age, sex, employment status, demographic trends including social changes in household and family formation, area of residence), of which two specific factors emerged as most important. The first was that while national trends often showed a degree of levelling, urban trends in many areas showed a reduction in car use. The second was similarly that while the population as a whole showed signs of levelling (and elderly people of an increase), young people were showing a decline.

Figure 4, from Headicar (2018), shows that in the 2000s, during a period of declining travel overall, the reductions in car use per capita were greater than the reductions in other modes. The reductions were related to the size of the urban area, with the biggest reductions seen in London and large cities, but much less so for medium and small towns.

Figure 4. Percentage change in miles per head per year by car driver, 2002-5 to 2011-14

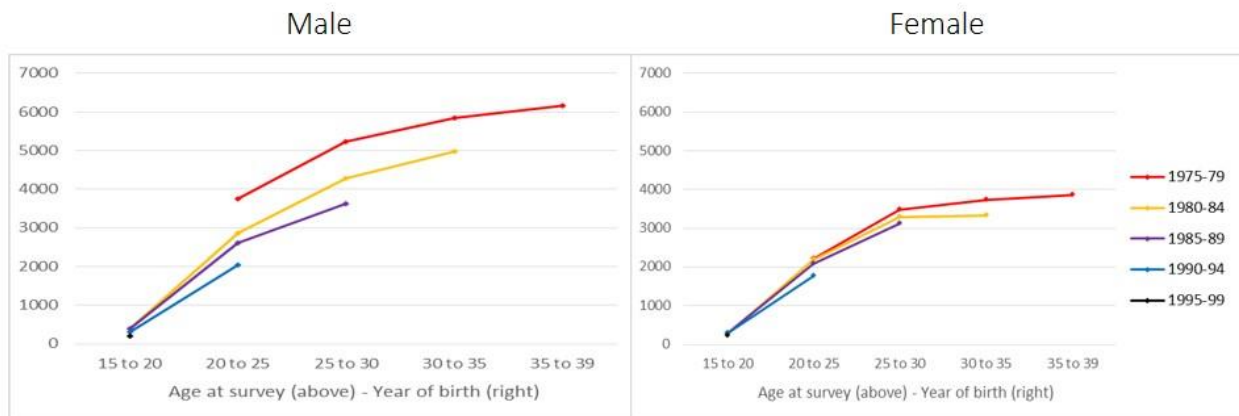


Source: Headicar (2018).

## Age and gender

Analysis by Chatterjee et al. (2018) showed that in the whole period from about 1991 to 2010 and possibly 2015, each successive cohort of young people over 17 had adopted fewer driving licenses, lower car ownership, and lower car use than the previous one. The effect remained apparent up to the age of mid-40s, beyond which observations were not yet available. The effect was most prominent for men and in the same direction, but smaller and later, for women. Figure 5 shows the effect for car miles driven.

Figure 5. Car miles driven by successive cohorts, 1990-94 to 2010-14, England



Source: Chatterjee et al. (2018).

Chatterjee et al. concluded that:

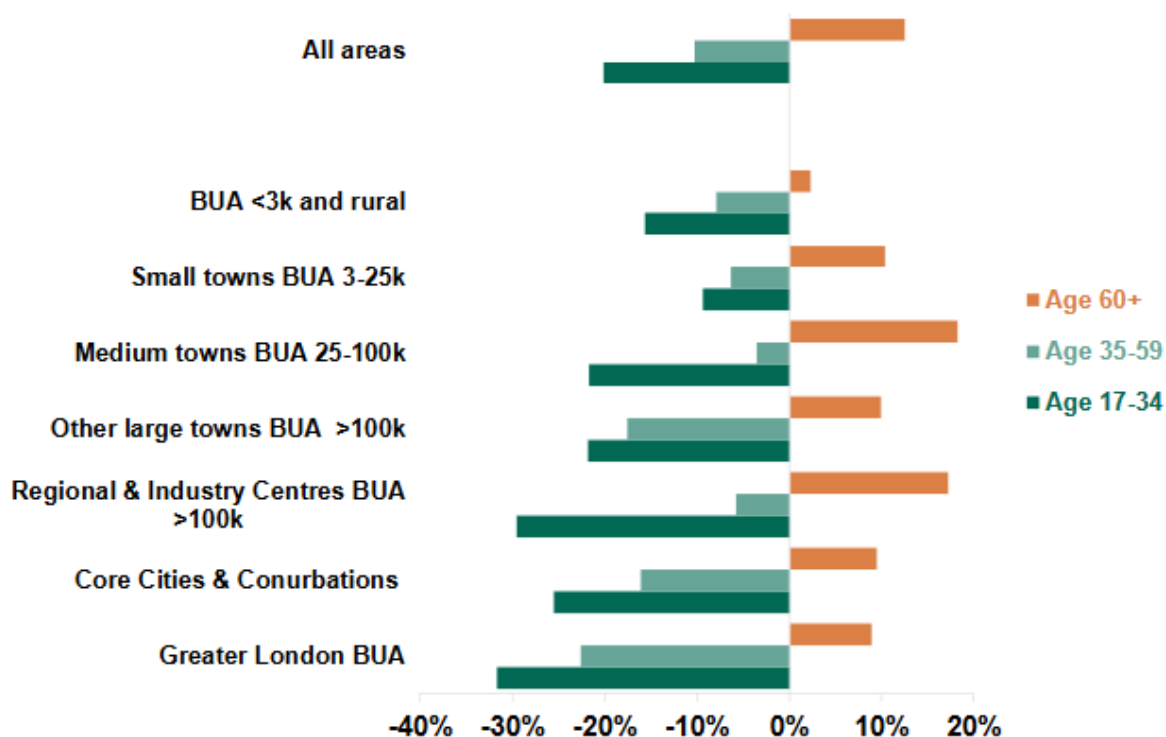
Social and economic factors interact, and are about the distribution of wealth and incomes, and changes in the conditions of work, more than average GDP growth.

The most important of these factors were deep social changes in young people's socio-economic and living situations, including the rise of precarious employment, decline in disposable income, increased participation in higher education, reurbanisation, and the decline in home ownership. Partly because of these changes, many of the linked traditional markers of adulthood, such as a stable household situation, an owner-occupied dwelling, a suburban or rural setting, and one or more cars, had become decoupled, lost their significance or even become unattainable for many young people. Many of the factors have tended to push in the same direction, although with different relative importance at different periods.

## Combined effect of age and area of residence

Taking the period as a whole, an appearance of stable, or slightly reducing, car use at the national aggregate level was actually driven by the offsetting trends of: (a) increases in car use in small towns and rural areas and decreases in cities and large towns; and (b) simultaneously, increases in car use among older people and decreases by younger people. Analysis by Headicar (2018), shown in Figure 6, of the interaction of these effects shows that these effects are not completely independent of each other. Young people living in urban areas are the ones that have most clearly reduced their car use.

Figure 6. Percentage change in annual miles per head as car driver 2002-5 to 2011-14



Source: Headicar (2018).

Older people's car use was, at the same time, still increasing. During this period, there was also a trend for young people to live in, or move to, urban areas more than other groups. The assessment was made that this would, or could, in future slowly reverse the "total" car use trend from increase to decline, as new generations replaced the old ones.

This process allows for the possibility that in the future, successive age-related changes can reverse the "total" car use trend from increase to decline, as new generations replace the old ones. This is a substantially different process from that of individuals changing their travel behaviour, being about habit formation rather than habit breaking.

The details of work in the United Kingdom summarised above were also seen in related themes of work in other countries. Dejoux et al. (2010) had undertaken related modelling for Paris and Montreal. Bastian and Borjesson (2017) show some features of similar trends for Stockholm.

## Future policy on urban car use

One of the characteristic features of road traffic, developed in traffic science since the 1950s, is the speed-flow curve showing that more traffic causes slower speeds, this being more intense in conditions of high congestion. Drivers take decisions in response to the costs and times facing them, without consideration of the additional costs and delays each imposes on others. This combination of traffic engineering and consumer economics has prompted many transport policy discussions, since Smeed and Wardrop (1964) showed the apparent paradox that people could travel faster in buses than in cars, provided enough of them did so. In general, the use of mass transport can deliver greater mobility at smaller social costs than systems based on private, single-person vehicles, but the mechanisms for delivering such advantages do not find easy acceptance by car owners or the politicians, for whom they vote.

Owens (1995) coined the phrase "Predict and Prevent" to replace "Predict and Provide" in an influential paper which broke the previous axiom that high traffic forecasts must justify high road building politically. In the 1990s, a substantial amount of literature using case study experience with important evidential underpinning supported a strategic approach based on the idea of induced traffic from increases in road capacity and "disappearing" traffic from reallocation of road capacity from cars to other modes. This literature helped shift the policy focus away from providing additional road capacity to cope with more car traffic, to a preference for reallocating road capacity to buses, pedestrians and cycling. This has since become a theme in nearly all urban policy statements, though often implemented only partially or inconsistently. There were also a limited number of trials of road pricing, with important full-scale schemes in London and Stockholm being particularly influential.

There is a wide recognition that urban transport policy should be oriented not only towards efficiency issues of congestion relief, but also to objectives of health, such as air quality, active travel, and well-being, as well as accessibility and fairness. Although urban transport policy makers mooted issues of climate change as long ago as the 1980s, it is only now that they are beginning to be taken seriously, let alone seen as a primary constraint on all carbon emissions. One particular feature of the transport sector, especially urban personal movement, is that reducing car use contributes to all these objectives, therefore potentially reducing the difficulty of controversial trade-offs between competing objectives.

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## Annex A. The longer term persistence of opposing trends in urban policy on cars

In the UK, there have been two parallel streams of argument on what to do about the relationship between the car and the infrastructure it uses. One view has been to control, moderate or tailor car use so that it is in some way kept within bounds defined by broader objectives of traffic or social efficiency. The other has been to accept its growth as inevitable and provide the road capacity necessary to accommodate it. This has not been a recent development: both streams of thought have been evident, and in competition, throughout the whole of the 20<sup>th</sup> century.

### The early years, 1900-1944

Following the account given by Hass-Klau (1990), the Garden City movement was developed from an idea by Ebenezer Howard (published in *Garden Cities of Tomorrow* in 1902, available as Howard, 1946), who wished to build a town with the benefits of the country and the benefits of the town, but with the disadvantages of neither. Contained in this idea was the notion of the “quality of the environment”, as well as a vision of the planning of a whole town or city. That tradition has stayed as a force in planning thinking ever since. However, at the time that Howard wrote, the car had only recently been invented; rail, limited road based public transport, and walk were the major modes of urban travel. By the time the second Garden City (Welwyn) had started in the early 1920s, the design had been adapted with the car in mind, but the present-day problems of the motor car had been little felt. An early recognition of the differing needs of cars and pedestrians was based on cul-de-sacs for housing. Footpaths went between the cul-de-sacs allowing easy pedestrian movement and allowing for the creation of green space between houses. Cul-de-sacs reduced road traffic in residential streets and channelled traffic into distributor roads around the edges and between housing estates. Thus, the cul-de-sacs create a large area which is free from traffic. The British Garden Cities of Letchworth and Welwyn first put the idea into practice. It was also put into practice in 1928, when Clarence Wright and Henry Stein used it in Radburn, New Jersey, leading to the adoption of the name “Radburn Layout”.

In parallel with this, the idea of traffic growth and the desire to accommodate was also stated, as early as 1913, when Sidney and Beatrice Webb (who were, incidentally, two important pioneers in the history of socialist thought in the United Kingdom) wrote what may have been the first statement of “predict and provide”:

We cannot doubt that - whatever precautions may be imposed for the protection of foot passengers and whatever constitutional and financial readjustments may be necessary as between tramways, omnibuses and the public revenues, the roads have once more got to be made to accommodate the traffic, not the traffic constrained to suit the roads.

In 1936, Alker Tripp, the Assistant Commissioner of Police for London, wrote that “motor traffic will never and can never mix safely with pedestrians and pedal cycles” and that since it would take a long time to separate the modes “a civilised degree of safety can only be achieved by definite restriction of freedom of movement”. His approach was to keep activities apart: to separate, in particular, shopping and vehicles. In later years, Tripp (1951, first published in 1942) advanced ideas which are akin to modern traffic calming ideas. Arterial and sub-arterial roads served precincts for residential, shopping and industrial areas from the outside. In some cases, gates would stop traffic entering, but in others:

...the road layout within the precinct may have to be altered in such a way as to make it deliberately obstructive. ... The broad idea will be to give the traffic a really free run on the sub-arterials and a very slow and awkward passage if it attempts to take a shortcut through the precincts.

Tripp's approach had a dual character, with measures favouring pedestrians in local areas but major road provision to accommodate cars between towns, and for major flows within towns (including town centres).

### **“Predict and provide”**

The Webbs had proposed “roads... made to accommodate the traffic” in principle, but how to put this into practice became a dominant and contested theme in the 1940s, notably in London. The County of London Plan (1943) presented rather simple calculations representing “forecasts” of traffic, based essentially on comparison of the higher levels of car ownership in the United States:

In England, the ratio of cars to population is about one to twenty-two; in America it is one to six or seven. It is perhaps doubtful whether this country will equal America in this respect, but it is generally agreed that there is every likelihood of a rapid approach to the American figure and that the increase in numbers of vehicles will far outstrip the 500 cars per day increase which was taking place in the years preceding the present day. It is not an idle speculation, therefore, to assume that within a few years the number of mechanical vehicles on the roads will be twice or thrice those of 1938.

This was followed by combined transport and land use plans, in Abercrombie (1944-5): “we consider it essential to plan ahead on comprehensive lines”.

The new plan was constructed around the central theme of decentralisation – of population, work and industry – which included reconstruction, lower density suburbs, and new settlements outside London, which later became the New Towns. All this required new roads. The map of new roads and expanded old roads envisaged a series of concentric rings around central London into the outskirts, and radial roads fanning out through the rings and beyond.

In retrospect, it is clear that the planners of the 1940s had no conception of the dynamic interaction of lower densities, decentralisation, roads, traffic and car ownership, with positive feedback later called a “vicious circle”. Indeed, some of them might have been horrified. The intellectual tradition of town planning in that period was strongly influenced by egalitarian, socially-oriented (and sometimes socialist) objectives to improve the welfare of working people. Replacing slums with modern decentralised housing was part of the same ethos that was, at the same time, leading to plans for the large-scale nationalisations and the creation of the National Health Service. Nevertheless, car ownership would not become the primary mode of use.

The government produced a technical manual “Design and layout of roads in urban areas” (Ministry of War Transport, 1946), which laid out standards for road design including traffic engineering considerations applied specifically to the car. In this guide, the idea of catering for increased traffic growth was taken for granted:

... we recommend that provision should be made for a volume of traffic double that which obtained prior to the war. ... We suggest, however, that where there is a foreseeable possibility of the need for further widening in the distant future which may be precluded by the erection of important buildings having a long life, it will be prudent to design the road to carry traffic greater than double the pre-war volume.

In fact, car ownership increased to levels far higher than the predicted “one car to six or seven people”. That in turn put pressure on the road system, led to plans for further road building, reductions in the use of public transport, cuts in service levels of public transport, continual revisions of parking standards for new housing to provide for increasing cars, and so on.

The next stage was an important report by Colin Buchanan: “Traffic in Towns” (Buchanan, 1963). When appointed to write this report he was known as a critic of the dominance of cars in urban areas, though the report was very carefully drafted in ways where both the champions and the opponents of expanding roads for car traffic saw it as support for their positions. There was an ambivalence built into the structure of “Traffic in Towns” which is repeatedly nearly, but not quite, resolved. Firstly, the production quality is very high, with some 200 black and white photographs, several coloured graphic charts, many coloured maps and some “artists impressions” of possible schemes. The most powerful visual impressions are of maps with large road schemes superimposed over them. The text consistently refers to a choice between two alternatives:

... so the choice will be either to match the investment in vehicles with an equivalent investment in works, or to invest less in works and curtail the usage of vehicles. It is questionable whether anything will curtail the acquisition of the vehicles by the public. The great danger for the future would seem to lie in the temptation to seek a middle course by trying to cope with a steadily increasing volume of traffic by means of minor alterations, resulting in the end in the worst of both worlds - poor traffic access and a grievously eroded environment. (Buchanan, 1963, p7)

At the same time, Frank Lloyd Wright (1963) wrote:

What nobler agent has culture or civilisation than the great open road made beautiful and safe for continually flowing traffic, a harmonious part of a great whole life? Along these grand roads as through human veins and arteries throngs city life, always building, building, planning, working.

One of the biggest responses in London was a plan to adopt the “invest in roads” choice. The 1943-46 road building proposals came back in a consultants’ study of London, commissioned using American techniques (Freeman Fox, 1966). In summary this said:

- Population, employment and incomes in London would rise.
- As a result, car ownership would almost double in twenty years.
- The total number of trips would increase by nearly 50%; the share of car would increase from a third to over half; the share of bus would decrease from a third to a sixth; and the share of rail would decrease from a sixth to a tenth.
- A “high class” road network can be provided of sufficient capacity to serve such demands.
- Public transport must be provided for the people unable to use cars, although they are relatively few in number.

The 1944 road plan evolved into a plan for Ringways and a “Motorway Box” planned (with far more elaborate surveys and modelling, but essentially the same logic). However, it was greeted by major political battles, in elections and demonstrations, under the slogan “Homes Before Roads”. The resistance also found its expression in professional challenge on a large-scale public inquiry, which resulted in a rejection of the main logic of the proposals. Some larger cities went much further in their attempts to build their way out of congestion. Birmingham is probably the clearest example, with a nearly complete set of three ring roads and a motorway system running through the conurbation. Other cities such as Glasgow and Liverpool demolished large sections of their inner cities to provide fast roads. Even so, no cities built

*enough* roads to fully implement the “provide for the car” alternative. Overall, car ownership continued to rise, while passenger miles by bus continued to fall.

The dominant engineering paradigm was that the growth in motorised travel was inevitable and the job of technicians and engineers was to provide the capacity for that growth. Nonetheless, in parallel, the alternative line continued to develop. The decline in public transport as a result of the growth in car ownership and social problems, underpinned arguments around the social inequities of car ownership and the likely consequences of continued growth in traffic. Hillman, Henderson and Whalley (1973), Illich (1974) and Plowden (1972) give examples of such arguments. This work proposed that the physical quantity of movement by car was not an expression of chosen utility. Instead, it was the result of a faulty planning paradigm, which ought to be based on integrated or balanced transport policies: CPRE (1973) wrote “Today Britain has a road policy. It has no transport policy”.

A Government White Paper (HMSO, 1977), was clearly influenced by such arguments and included policies of continuing support for public transport, keeping fares low and mentioned the idea of integrated policies, a quite different emphasis from “Cars for Cities” (Buchanan, 1967). The 1977 approach expressed a dilemma but did not resolve it:

It often appears that the improvements in the capacity of a road system are very quickly matched by such an increase in traffic that much of the potential benefit from the increased capacity seems lost. It might be argued that this will invariably apply to any attempts to increase accessibility by car. But it seems to us that this ignores two factors. First, even if increased capacity is largely taken up by increased traffic, it still allows a greater number of people the benefit of the use of personal transport. Second, there seems to be an increasing recognition that some means must be found to ensure that traffic congestion itself does not indefinitely continue to be the main factor limiting the growth of traffic.

## **Predict and Prevent**

In 1989, the publication of new national traffic forecasts – substantially higher than any previous ones – represented a turning point. Initially, a proposed national expansion of road capacity used the forecasts as the basis for a programme described at the time as the “biggest road programme since the Romans”). Yet this turned out to have the opposite effect on policy to what was expected, and planned: instead of intended improvements in congestion there would be, at best, a slowing down of the pace at which congestion got worse. Local authorities, especially some Conservative Councils in the Southeast, in areas which included urban, suburban and some rural parts, concluded that the high forecasts required a new generic transport policy tool, “demand management” (which could include road user charging) to reduce traffic growth, instead of the declared approach of road building to provide for it. This duly became, for a time, the Conservative-declared policy by about 1994, and New Labour made it a part of their strategy from 1998, converting it into policy in the White Paper “A New Deal for Transport”; though it was subsequently softened.

Thus, high road traffic forecasts led to less road building. There were still unresolved arguments about the forecasting method and reliability, including challenges to the validity of the high forecasts. There were also unresolved policy arguments about the most appropriate transport policies that should be followed. However, crucially, the two sets of arguments did not map on to each other, leaving a fault line in the relationship between forecasting and policy. It suited both those who wanted more road building and those who wanted less, to construct their arguments around the same high forecasts: one side using the argument that they were “so high that extra roads were necessary” and the other side arguing that they

were “so high that extra roads would not be useful”. The uneasy synthesis “necessary but useless” did not make for a long-lasting or comfortable consensus in policy formation, and the flaw kept re-emerging.



## Trends in Car Use, Travel Demand and Policy Thinking

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This paper discusses the main trends of car use and travel demand, as well as changes in policy responses and attitudes to managing the growth in urban traffic. It highlights the importance of orienting transport policies towards broader objectives beyond efficiency of congestion relief. Such a comprehensive set of objectives would include improvements in health, air quality, active travel activity, human well-being, as well as accessibility and fairness.

All resources from the Roundtable on Zero Car Growth? Managing Urban Traffic are available at: [www.itf-oecd.org/zero-car-growth-managing-urban-traffic-roundtable](http://www.itf-oecd.org/zero-car-growth-managing-urban-traffic-roundtable).