

The future of public transport: the dangers of viewing policy through rose-tinted spectacles

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Improved public transport services are generally viewed as the most effective means of encouraging transfer from the car, especially on urban journeys. Accordingly, substantial public funds are being invested to this end. Demonstrates that such an approach achieves little of this transfer. By comparing patterns of travel in Britain and The Netherlands, shows that the prioritizing of walking and cycling is not only far more effective and cost-effective in achieving the transfer, but also is likely to deliver a wide range of social, health and environmental objectives of public policy additional to those related to transport. There must therefore be a presumption in favour of investment in networks for walking and cycling and in other measures enabling journeys to be made by these non-motorized modes well in advance of investment in public transport.

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It is the conventional view that the key element of a package to deal with the adverse effects of the growth in car-based geographically-dispersed patterns of activity is much improved bus and rail services in order to provide equivalent levels of convenience, speed and comfort to the car. In this way, car users can be more easily encouraged to transfer back to public transport.

These judgements about public transport as by far the most important substitute for the car are apparent in documents produced by the European Commission, notably in its recent Citizens Network, professional papers by academics and from transport institutions and transport-related commercial bodies, in party political agenda-setting statements, local and central government reports, in most spheres of information gathering and dissemination, and in the media. They are reflected too in attitudinal surveys revealing that the public, including most motorists, agree.

One of the primary explanations for this outcome, additional to the obvious one of the relative power and influence of both the private and public motor lobbies, is the fact that published statistics on patterns of travel are focused on a modal split that usually excludes journeys over short distances and by non-motorized means, thereby resulting in an exaggeration of the significance of longer journeys and of the importance of public transport. This then encourages solutions to be seen to lie in the area of investment in transport infrastructure – road building, rail electrification, and other improvements in public transport services to reduce travel times on these journeys.

So influential has been the support for substantial investment in public transport that it is rarely questioned, with the sole problem lying with budgetary limitations. Many cities have invested in or are proposing new high quality systems in spite of their capital costs per kilometre being not dissimilar to those for road building largely because of the expensive rolling stock and, in some instances, tunnelling.

Current patterns of travel

Any examination of the current role of public transport must differentiate between bus and rail. Their characteristics vary significantly in terms of meeting the demand for travel over shorter and longer distances. Table I shows that, in Great Britain, the near-exclusive use of buses at present is for journeys of between one and ten miles, but accounting for only 1 in 10 within this distance band, though for eight times as many as by rail. Indeed, only 1.6 per cent of journeys of any length are made by rail which is rarely used to travel less than 10 miles (16 kilometres) – 86 per cent of all journeys. Rail comes into its own on longer journeys over 10 miles in length but then caters for only 1 in 15 of them. However, it can be seen that most journeys are still sufficiently short that they can be made by non-motorized means. A third of all journeys is made within one mile, a distance fairly well suited to walking. A further third is made over distances of between one and four miles, which would involve a cycle ride of between five and 20 minutes. The fact that few of these journeys are made by bicycle in Great Britain may be explained by the lack of provision of safe networks for it, rather than its unsuitability for journeys within this distance band.

The bottom two lines of Table I show the ratio of walking and cycling journeys to those by bus, and the ratio of car journeys to those by rail, both ratios being recorded within each distance band. It can be seen that walking and cycling cater for five times as many journeys as do buses – in urban areas, the proportion is still higher – and 35 times as many journeys are made by car as by rail. Although it is clear that many issues other than travel time influence personal decisions on modal choice, even on journeys of up to 2 miles, journeys on foot do not take much longer than journeys involving use of a bus. Cycling is almost twice as fast: on journeys of up to 10 miles, it takes less time than bus or rail. On longer journeys, that is over 25 miles, accounting for only 4 per cent of all journeys – the car is used seven times more than is rail.

On work journeys in Great Britain, where public transport comes into its own, albeit

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largely owing to parking control, road congestion and other deterrents to car use, the number of journeys on foot is very similar to that by all public transport modes combined; the number by cycle is very similar to that by rail in spite of the very limited provision for cyclists. In general, buses are rarely used for most types of journey. In the case of shopping, walking accounts for nearly four times the number made by bus – a similar ratio to that for school journeys and for most leisure journeys. Bus and rail are rarely used for day trips or holidays.

not come about from transfer from public transport but from walking and cycling – in Great Britain in 1949, cycle mileage exceeded car mileage whereas it is now exceeded by a factor of 75! It has stemmed from more journeys newly-generated by the ownership of a car; and increasingly from travel to and from more distant destinations in new developments of low density – housing, shopping, commerce and leisure centres, convenient access to which is realistically only possible by car. In general, door-to-door travel time by car is far lower than by bus or rail, from which it can again be observed that it is wholly unrealistic to anticipate that improved public transport could result in it competing with the car on journeys up to 50 miles, accounting for over 98 per cent of all journeys. The expectation that, given sufficient improvement in public transport, especially rail, people will return to it from the car, overlooks the fact that, in the main, these journeys were neither previously made by public transport nor do they lend themselves to being matched by it.

Table 1
 Modal split on journeys, by distance band, Great Britain

	Distance band in miles						All	Trips per week
	<1	1<2	2<5	5<10	10<25	25+		
Walk	236	45	10	–	–	–	292	5.9
Cycle	5	6	5	1	–	–	18	0.4
Car	43	99	190	114	82	29	560	11.4
Public transport	5	14	33	17	8	4	79	1.6
Bus ^a	5	14	30	12	3	–	63	1.2
Rail ^b	–	–	3	4	5	4	16	0.3
Other	3	9	16	10	8	7	51	1.0
Total	290	173	254	143	100	40	1,000	20.3
Walk and cycle: bus	51	3.6	0.5	0.1	–	–	4.9	
Car: rail			63	28	16	7	35	

Notes: base = 1,000

^a London Transport bus and other stage bus

^b British Rail and London Underground

Source: derived from Department of Transport (1994)

It would seem that the prospect of buses playing a significantly larger role for most types of journey under 4 miles currently made by car is small. For journeys of 4 miles or more, the prospect of much substitution of journeys from car to coach or rail without considerable limitations on car use is also small. Neither improvements in urban services, recently introduced or under consideration (such as light rail, more comprehensive networks of bus lanes, computer-controlled traffic lights favouring buses, electronic indicators showing expected time of arrival, or even lower fares), welcome though these are or would be for bus users, nor improvements for longer inter-city journeys (such as faster trains, seat-back videos, and concessionary fares) bring about more than a modest transfer of people with the choice of travelling by these services rather than by car.

Indeed, in Great Britain, for every passenger kilometre “lost” to bus travel, 13 car passenger kilometres have been added over the 30-year period to 1993. Growth in car use has

Lessons from The Netherlands

The appropriateness of the bicycle as a far more appropriate substitute for many car journeys (as has been seen, over half of these journeys even today are over distances of less than 4 miles) is apparent by comparing patterns of travel in Great Britain and The Netherlands. The travel surveys for the two countries reveal similar levels of household car ownership, and a considerable degree of congruence within each distance band both in the overall distribution of journeys and in car use. However, one particular difference stands out, namely the much higher proportion of journeys made by cycle, a lower proportion on foot, and a lower proportion by public transport. In The Netherlands, over a quarter of all journeys are made by cycle – including over half of school journeys (only 1 per cent in Great Britain) – and journeys by cycle and on foot exceed those by public transport by a factor of 10. The ratio of car journeys to cycle journeys is about 2 to 1 whereas, in Great Britain, the ratio is 32 to 1. Moreover, the number of cycle journeys there easily outstrips those made by public transport on journeys in all distance bands up to 15 km.

Given the fact that most urban settlements in Europe are topographically not “cycle-unfriendly”, it is clear that the explanation for the high level of cycle use in The Netherlands has much to do with its transport policy over the last 25 years which has led to cycling playing such a significant role in spite of a

continuing rise in car ownership. Nor can the relatively low use of public transport there, much lower than in Great Britain, be explained by a poorer service, for the reverse is true: 12 times as much money is spent on that mode as on cycling. Indeed, higher densities of population which in turn promote public transport use are more commonplace in The Netherlands. This again points to the limited role of public transport in attracting people who currently use cars.

Investment decisions in transport

Repeated calls are made in transport circles for a "level playing field" in road and rail investment. "Balance", "least-cost planning" and an "integrated approach" in policy decisions, are recommended. All travel methods are claimed to incur environmental costs. That is true for motorized travel: like private transport, all forms of public transport are the source of noise, pollution, danger to other road users, severance, and so on. It is untrue for walking and cycling.

What sort of sensible balance, however, can be struck when the transport modes incurring high economic, social and environmental costs are given preferential treatment to those incurring low costs; when investment in all the modes is not evaluated according to common criteria; and when the benign non-motorized modes are largely left out of consideration other than in the context of road safety?

Even when large investment has been made in high quality public services, the outcome has been disappointing. On average, the best of new public transport systems cost far more than budgeted and then carry far fewer passengers than predicted. In spite of their high capital costs, rapid transit systems add no more than a few per cent to public transport patronage for a whole city and have relatively little effect in terms of the objective of relieving road congestion by attracting car users, and the benefit of the small transfer to public transport tends to be overtaken within a year or two by the continuing rise in the use of the car.

Even discounting criteria other than direct economic ones, comparison between investment in walking and cycling networks rather than public transport, points overwhelmingly to one decision based on achieving the best rate of return: the capital costs per kilometre for the new type of public transport systems currently under construction or being reviewed are hundreds of times higher than those for cycling provision and are likely to be much more effective in meeting travel

demand. Indeed, the total 2,000 kilometre cycle network for London would cost the equivalent of two kilometres of the Leeds Supertram system or 0.4 kilometres of the Jubilee Line Extension!

Discussion

At this juncture, it must be acknowledged that, of course, public transport does have an important role to play. First, it is needed to cater for the journeys of people without access to a car, and for those who, for whatever reason, prefer to travel by it rather than use their car on particular journeys. Second, it is required for commuting where it may be especially necessary to oblige motorists to use public transport owing to the shortage of parking space and problems of congestion in central urban areas – though thereby rendering its services extremely uneconomic as vehicle occupancy, and therefore revenue, are low outside the rush hour. Its third role is for long distance inter-city travel but, as has been seen, door-to-door travel time and convenience – and overall cost where several people are travelling together – can easily tip the balance in favour of the car even when rail journeys are on fast electrified routes or coach journeys are largely on motorways. Unless the real and perceived costs of car travel are dramatically increased, holding down fares is likely to have only a minor effect on this particular modal choice.

At the heart of the debate about the future role of public transport lie three questionable and dubious, albeit unspoken, assumptions. The first is that people's appetite for travel – "further and faster" – is insatiable and that longer journeys at higher speeds are somehow more significant. This is certainly true as far as environmental impacts and other costs are concerned! The second is that current and future demand must be met, though perhaps in less environmentally-damaging ways, because people have an inalienable right to have their wish to travel met, if not by car, then by some alternative form of motorized transport to which they can be won over because it largely matches the car's attractions. The third, and perhaps most worrying, is that the accumulation of greenhouse gases from all sectors of the economy, especially transport, can continue to rise without putting at risk the ecological balance of the planet.

It may be through our response to the urgent need to curtail dramatically our use of fossil fuels that the inappropriateness of bus and rail as substitutes for car and air travel will be recognized. Not only do all these

modes rely completely on the use of fossil fuels but, taking account of typical vehicle occupancies, public transport's fuel consumption per passenger kilometre is only a third to a half lower than that of the car, whereas, of course, for walking and cycling, none is required.

Two recent reports of the Intergovernmental Panel on Climate Change have called for a global 60 to 80 per cent fall in carbon dioxide emissions to stabilize the world's climate. With the moral imperative as stewards of the planet to modify our lifestyles to meet this objective, and political realism to reflect the fact that developing countries cannot realistically be called on at this stage in their development to reduce their low levels of fuel consumption, the author of this article has calculated that for Western European countries, the reduction determined on an equitable per capita basis is over 90 per cent. Without action to this end, the overriding message of the Brundtland Report, the 1992 Rio Conference, and European Union States' response to it including a commitment to sustainable development, that we must hand on to future generations an environment no worse and preferably better than the one we inherited, will prove to be just pious and unfulfilled expressions of intent.

Conclusions

A consensus is being reached that, in the light of all its adverse consequences, demand for car travel must be reduced. Restrictions will have to be progressively but speedily phased in during the next two decades – for instance, through private and public parking control, much lower and properly enforced speed limits, traffic calming, much heavier taxation of fuel and possibly fuel rationing. However, while investment in public transport is justified for the motorized travel of all adults without access to a car or who prefer not to use a car, and of course for all children who can be allowed to travel on their own, buses are generally a far less satisfactory alternative to the car than the door-to-door convenience of walking on short journeys or

the door-to-door convenience of cycling on journeys up to four to five miles in length – in combination, representing close on 2 in 3 of all current journeys. While rail can be a better alternative to the car on long journeys, in practice these represent only a very small proportion of all journeys and opportunities for transfer from car to rail are limited.

Thus, to meet the objective of providing a realistic substitute for the car, an investment strategy would be better directed to provision first, for safe and convenient pedestrian networks for short journeys; second, for safe and attractive cycle networks for other urban journeys; and third, for the non-motorized modes in combination with public transport for longer journeys. Any evaluation of the costs and benefits of each form of transport, taking account of social, health, economic and local and global environmental criteria, is likely to reveal the non-motorized modes as by far the most cost-effective. Such a strategy must take precedence over one aimed at encouraging significant transfer from the car to public transport for that is an ephemeral goal.

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