IEA Discussion Paper No.68

# SEEING RED

## Traffic controls and the economy

Martin Cassini and Richard Wellings
January 2016

iea
Institute of
Economic Affairs

With some exceptions, such as with the publication of lectures, IEA Discussion Papers are blind peer-reviewed by at least one academic or researcher who is an expert in the field. As with all IEA publications, the views expressed in IEA Discussion Papers are those of the author and not those of the Institute (which has no corporate view), its managing trustees, Academic Advisory Council or senior staff.

# Acknowledgement

This publication has been made possible by the support of the Nigel Vinson Charitable Trust. The directors and trustees of the IEA thank the Rt. Hon. Lord Vinson of Roddam Dene, LVO, for both his intellectual and financial input.

# Contents

# About the authors

**Martin Cassini** is a video producer and campaigner for traffic system reform. He has written on the subject for *Economic Affairs*, *The Times*, *Daily Telegraph*, *Guardian*, *Highways Magazine*, and broadcast on BBC TV and radio. He speaks at conferences, most recently *The Politics of Roadspace* at the School of Geography, University of Oxford. In 2009 he instigated a traffic lights-off trial in Portishead which went permanent after improvements in journey times, safety and quality of life for all road-users. A video he made about the transformation of Poynton in Cheshire has had over 200,000 views and is influencing traffic policy internationally. He is a member of the International Advisory Council of the New Mobility Program.

**Dr Richard Wellings** is Deputy Academic and Research Director at the Institute of Economic Affairs and Director of IEA Transport. He was educated at Oxford and the London School of Economics, completing a PhD on transport policy in 2004. He is the author, co-author or editor of several papers, books and reports, including *Towards Better Transport* (Policy Exchange 2008), *High Speed 2: The Next Government Project Disaster?* (IEA 2011), *Which Road Ahead – Government or Market?* (IEA 2012) and *The High-Speed Gravy Train: Special Interests, Transport Policy and Government Spending* (IEA 2013).

# Summary


- Not only is a high proportion of traffic regulation detrimental to road safety, the economy and the environment, it also imposes huge costs on road-users, taxpayers and communities.
- Despite the potential for social and economic harm, traffic regulation is introduced without analysing the full cost to road-users. All too often, policymakers neglect negative effects and approve schemes even when costs outweigh benefits.
- From 2000 to 2014, when there was little growth in traffic volumes, the number of traffic lights on Britain's roads increased by some 25 per cent. The number of junctions controlled by signals has risen to about 15,000 with a further 18,000 pedestrian crossings.
- The number of instructional traffic signs in England reached 4.57 million in 2013 – an increase of 112 per cent since 1993.
- Britain's first speed camera was installed in 1992. By 2012 there were over 3,000 at 2,300 fixed sites. Monitoring now extends to large sections of the motorway network, a step change in the surveillance of motorists.
- In 2013 Islington became the first borough to bring in a blanket 20 mph speed limit. By summer 2015 around 14 million people lived in local authorities that had adopted or were in the process of adopting a 20 mph standard.
- The rapid expansion of bus lanes began in the late 1990s. In London they grew from 59 miles in 1997 to 172 miles in 2007.
- The importance of the road network means the cumulative effect of these measures imposes an enormous burden on the UK economy. Just a two-minute delay to every car trip equates to a loss of approximately £16 billion a year.

- There is a strong economic case for replacing standard traffic regulation with strategies that harness voluntary cooperation among road-users. ‘Shared space’ schemes – such as the one in Poynton in Cheshire – show the transformational benefits of this unregulated, design approach.
- A high proportion of traffic lights should be replaced by filter-in-turn or all-way give-ways. Many bus lanes, cycle lanes, speed cameras and parking restrictions should also go. Culling such traffic management infrastructure would deliver substantial economic and social benefits.

# Introduction

Before there were any statutory traffic regulations, road-users were governed by common law. All had equal and mutual rights to be exercised so as not to interfere unreasonably with the rights of others. They were required to avoid unnecessary obstruction and to use such care for their own and others' safety as a reasonable person would under the circumstances.

This laissez-faire approach was undermined in the 1920s. Along with other economic sectors, roads became subject to a far greater degree of centralised control. This partly reflected the ideological shift towards statism following World War I, but was also influenced by railway technology where high speeds and long braking distances justified strict safety rules.

In 1929, without reference to Parliament, a meeting chaired by Sir Henry Maybury took place at Scotland Yard to regulate the new form of locomotion, the motor car.[1] The AA argued for 'priority from the right', but the RAC won the day with its proposal to segregate major and minor roads, and grant major/main roads priority over minor/side roads, regardless who was there first.

Abandoning common law principles of equal rights and responsibilities, priority conferred superior rights-of-way on main road traffic. Thus it imposed inferior rights on side roads and pedestrians, putting them at a dangerous disadvantage. As main road drivers exercised their legal right-of-way over 'inferior' side road traffic and people on foot – who now had to run the gauntlet of fast-moving priority traffic coming at them from opposite directions – a spate of road deaths occurred. Instead of revoking

1 For a more detailed account, see: http://www.equalitystreets.com/presspublications/1795-2/

the priority rule – the underlying cause of dangerous conflict – the authorities installed traffic lights at junctions. To avoid the inconvenience of slowing down to accommodate other road-users, drivers now had to stop (Todd 2011).

In turn, this led to demands for other management infrastructure, such as road markings, railings, traffic signs and bollards. These mushroomed inexorably with the increase in car ownership. Implementation tended to be incremental and piecemeal, with highway authorities responding to perceived problems at particular sites.

In the mid-1990s traffic management became more systematic, as part of a change of direction in British transport policy (Dudley and Richardson 2001). A somewhat grudging acceptance of motor cars was replaced by policies that sought to discourage private motoring on environmental and equity grounds. The road building programme was cancelled, fuel taxes hiked, and spending on trains, buses and trams increased to encourage a 'modal shift' to public transport.

These policies were accompanied by a huge expansion of measures such as traffic lights, road humps, parking restrictions and bus lanes. While 'anti-car' policies on road building and fuel duty have been moderated over the last decade, the growth of traffic management[2] has continued apace.

Traffic management schemes, implemented by local authorities, arguably now comprise the government's key strategy to discourage motoring. Yet there has been little attempt to analyse their overall economic and social effects. Given the importance of the road network to the UK economy, this is a matter of profound concern.

This paper is an attempt to analyse the economic impact of the growth in traffic control. While the full cost is hard to quantify, it is possible to challenge the economic assumptions made by policymakers.

It is concluded that most traffic management strategy is flawed, and imposes high costs on road-users and the wider economy. In addition to failing to give due weight to economic impacts, this reflects more

2 The 2004 Traffic Management Act requires LTAs (local traffic authorities) to: (a) secure the expeditious movement of traffic on the authority's road network; and (b) explore all options for improving road safety, congestion and air quality. Traffic management has exceeded this function to become a means to achieve wider policy objectives such as modal shift.

fundamental flaws in the government's 'command and control' approach to the roads. Accordingly, there is a strong case for replacing it with one that harnesses voluntary cooperation among drivers, pedestrians and cyclists, with far less interference from politicians and officials. These alternatives – usually achievable at much lower cost - are examined in the latter part of the paper.

# The 'command and control' approach

The shift in roads policy did not reflect the preferences of transport users themselves. It was a top-down process driven by political and bureaucratic elites, notable for a high degree of 'command and control' characteristic of the centrally planned economies of the Cold War era. In the words of transport economist Gabriel Roth (1996), roads are one of the last bastions of 'Soviet-style central planning', yet in the UK, the period following the collapse of communism actually saw this approach to transport policy gain ground.

The flaws in top-down, centrally planned economic policy are now widely understood. Failure to harness the skills and knowledge of individual economic actors produces an endemic misallocation of resources (Hayek 1945). Centralised economic regulation is also vulnerable to capture by special interests. By exerting disproportionate influence over officials, concentrated groups are able to shape policy to favour their own interests at the expense of consumers, taxpayers and the wider economy (Olson 1965). Policy may also be distorted by the self-interest of bureaucrats seeking to expand their regulatory powers to increase their status in government or for financial gain (Niskanen 1971; Dunleavy 1991). A large body of empirical evidence supports these theoretical critiques of central planning (see Myddelton 2007).

The alternative approach is to allow social and economic activity to arise through voluntary cooperation among individuals. Compared with central planning, such 'bottom-up' organisation achieves efficiency gains by drawing on the dispersed, subjective and constantly changing knowledge of individuals (Hayek 1945). Instead of being determined by 'one-size-fits-all' policies from remote elites, behaviour can adapt to circumstances

of time and place. Systems based on voluntary cooperation are less prone to the influence of special interests. Without politicians and state officials dispensing favours to the well-connected, the economic incentives to engage in lobbying are greatly reduced.

Traffic management amply illustrates the problems identified by critics of central planning. At the same time, the benefits of a dispersed and spontaneous approach based on cooperation among individuals have been largely ignored.

# The economic importance of the road network

At first sight, the 'command and control' approach to traffic management might seem a minor matter, but it has an immense impact on transport, road safety and the taxpayer. Roads carry no less than 90 per cent of passenger traffic and 70 per cent of freight, forming the core element of Britain's domestic transport sector (DfT 2014c).

After housing, road transport is the second largest area of consumer spending, with the average household spending £3,500 a year on motoring costs alone (ONS 2014). This reflects the vital role of roads in providing access to jobs as well as leisure and retail opportunities. A more efficient road network therefore has the potential to reduce living costs and boost living standards directly. But the economic benefits are even more wide-ranging.

Faster and cheaper journeys lower the costs of trade, facilitating competition, enhancing entrepreneurship, innovation and productivity. At the same time, increased trade allows cities and regions to specialise where they have an economic advantage.

Reducing travel costs also improves labour mobility, providing access to a greater range of jobs. It means workers are more likely to find employment suited to their talents, increasing productivity and wages. There will be less unemployment and welfare dependency because travel-to-work costs act like a tax on jobs. With a fall in those costs, workers are incentivised to move off benefits and discover more employment opportunities (Wellings 2012). Employers, too, benefit from improved labour mobility. Lower travel-to-work costs increase the pool of potential workers for businesses to draw on, enabling better matching of jobs to skills.

Efficient transport links also enable similar businesses to cluster in locations which can develop as centres of expertise. 'Agglomerations' may stimulate innovation by promoting interactions among specialist firms which benefit from concentrations of people with relevant skills. Specialist suppliers and subcontractors can cluster in the same location, lowering the costs of developing and delivering new products and services. Such agglomerations depend on the transport networks that bring entrepreneurs, workers, competitors and suppliers within reach of each other.

While the benefits of efficient transport networks are established both in economic theory and by the historical evidence, quantifying their impact is more problematic. This is because many of the benefits consist of unknowns, such as the new business and employment opportunities created when transport costs fall.

It is possible, however, to estimate the impact of some aspects of the road system. For example, numerous studies agree that traffic congestion imposes significant direct costs on the UK economy, typically estimated at about £20 billion per annum (e.g. Blythe 2005). Moreover, the prodigious volumes of traffic mean that even small delays translate into significant economic costs, which can be assessed by reference to the value of travellers' time (see below).

But these crude calculations provide only a partial picture of the cost of inefficiencies in the road network and thus the benefits of a more efficient one. This is because, as explained above, transport costs affect the wider economy through their impact on trade, labour markets, competition, and hence productivity generally.

In combination with the direct costs of traffic congestion and delays, such wider economic impacts imply that the effects of road network inefficiencies are highly significant, and may include higher unemployment and lower productivity across the UK economy. In this context, the expansion of traffic management policies clearly has the potential to impose very high costs indeed.

# The growth of traffic controls

Several trends demonstrate the rise of command and control. These include an increase in the number of traffic signals and speed cameras, the expansion of bus lanes, cycle lanes and traffic calming, the introduction of 20 mph speed limits, and the spread of controlled parking zones. Such measures spring from an attempt to coerce road-users into behaving in certain ways, instead of allowing practices to develop spontaneously through free choice and cooperation, with road-users assessing costs and benefits to decide on an appropriate mode for their individual needs. They might recognise, for example, the benefits of cycling for health and the urban environment, and buses for their low-cost, high-capacity provision in cities. The following analysis focuses on the pros and cons of a particular policy approach rather than different transport modes.

### *Traffic lights*

Although, as explained later, there is a powerful case against traffic lights *per se*, the data show they have proliferated in the last twenty years. In the mid-1990s the government estimated the number of signal-controlled junctions in Great Britain at approximately 11,000. By 2000, this had risen to 12,000 (DTLR 2001). A total of 12,000 pedestrian crossings in the mid-1990s rose to around 14,000 by 2000 (ibid.).

National-level data on the number of traffic lights are difficult to obtain, but available figures at local level suggest a serious increase. Our estimate for 2014 is 15,000 signal-controlled junctions and 18,000 pedestrian crossings.[3] This suggests an increase of 40 per cent over the last twenty

3 Estimated from available local authority and regional transport authority data.

years and 25 per cent since 2000. The number of individual signal heads is now likely to exceed 400,000 (see UKERC 2006).

Vehicle traffic rose by just 5 per cent in the period 2000-2013, and fell after 2007 during the Great Recession (DfT 2014a). Similarly the length of the entire road network increased by 1.3 per cent, and major roads by just 0.6 per cent (DfT 2014b). The growth in traffic controls reflects neither an increase in traffic levels nor in road space. Indeed, in some urban areas where signals have proliferated, transport planners have reduced road capacity and traffic levels have fallen (see TFL 2012).

### *Speed cameras*

Britain's first speed camera was installed in 1992. In 2012 there were over 3,000 camera housings at 2,300 fixed sites, as well as mobile devices (RAC Foundation 2012). Growth was particularly steep from 2000 to 2010, at which point some local authorities withdrew their cameras after government funding cuts during the slump. The upward trend appears to have returned. In particular, the installation of digital cameras with low operating costs means that at any given time a higher proportion of fixed sites are now actively enforced.[4]

In addition, monitoring of motorways is expanding rapidly with the roll-out of 'active traffic management'. Previously, cameras on 'smart motorways' operated during peaks only, when speed limits were lowered to increase capacity. In many areas they now operate round the clock, penalising motorists who exceed 70 mph. At the start of 2015 roughly one tenth of the motorway network had been 'upgraded' to 'smart motorway'. By 2018 this is expected to rise to one third.[5] Cameras might also be deployed to monitor average speeds beyond actively managed stretches, which would represent a major expansion in surveillance.

4 'Speeding fines hit four-year high due to new digital cameras', *Daily Telegraph*, 26 December 2014.

5 See, for example, 'Drivers warned to stick to 70mph as motorway speed cameras arrive by stealth', *Sunday Times*, 12 January 2015.

### *Traffic calming*

A similar pattern can be observed with speed humps, devised to slow traffic to 10-20 mph. While there are clear benefits from slower speeds in many locations, the way traffic calming has been extended is once again symptomatic of a 'command and control' approach. Since their introduction in the early 1980s, the number of humps rose to an estimated 60,000 across the UK, with almost half thought to be in London.[6] The number of road signs for speed humps in England surged from 4,675 in 1993 to 98,351 in 2013 (or 2004 per cent), a proxy measure for the scale of the increase (see Table 1).[7]

As well as speed humps, many councils have installed chicanes, which slow vehicles by creating horizontal obstacles. Some of these reduce two-lanes to one, forcing drivers to give way to traffic from the opposite direction. By creating additional delays to journeys, transport planners may deter people from using a particular route.

A similar strategy is to narrow major urban roads and widen pavements. This brings benefits if combined with removing signals, but at signal-controlled junctions where 'left' and 'right' feeder lanes have been replaced by a single lane, fewer vehicles can get through in the green time allowed.[8] Moreover, a large number of former through-roads have been turned into cul-de-sacs. Again, there is an absence of aggregate data on this type of measure.

### *Bus priority*

An increasing amount of road space has been excluded from general use and given over to buses, particularly during peak periods. This is often combined with other measures such as traffic lights that give priority to buses. By the end of 2008, 8,425 traffic lights were giving priority to buses, compared with 3,801 at the start of 2007 – a rise of 120 per cent (Yass 2011).

---

6 'Speed bumps labelled an acute risk to spinal injuries', *Sunday Times*, 11 November 2012. Unfortunately there appear to be no official data at the national level on the number of such installations.

7 These estimates come from different sources, so do not necessarily tally up.

8 Accordingly, where signals are removed there may be a far stronger case for such measures (see below).

The first bus lane in London appeared in 1968 and in the 1980s they began spreading to provincial cities. Expansion continued in the late 1990s and into the 2000s, coinciding with a growing hostility to motoring among policymakers (Dudley and Richardson 2001). In London, bus lanes almost trebled from 59 miles in 1997 to 172 miles in 2007 (Jepson and Ferreira 1999; TFL 2012). As a proxy measure, the number of bus lane signs in England shot up from 2,742 in 1993 to 20,471 in 2013, a rise of 647 per cent (Table 1).

The growth in dedicated bus lanes appears to have slowed since the 2008 recession, perhaps because of budget constraints.[9] Some councils have grown sceptical. In Liverpool the local authority recently removed 20 out of 24 bus lanes from the city's roads.[10]

In many urban areas the growth in bus lanes has meant reductions in road capacity for cars, vans and lorries. Between 1996 and 2012, capacity declined by 30 per cent in central London, by 15 per cent in Inner London and by 5 per cent in Outer London (TFL 2012).

### *Cycling infrastructure*

The case for an integrated, inclusive approach is presented below, but recent decades have seen a significant expansion of segregated, exclusive cycling infrastructure, a trend which has accelerated in the last five years. Cycle lanes have appeared along a great many urban roads, reducing capacity for other users. Advanced stop lines at junctions, which give priority to cyclists, have been installed before comprehensive research was conducted into their impact on road capacity (see TRL 2003).

It is difficult to obtain UK-wide data on the growth of cycling infrastructure, and there is considerable variation between local authorities. However, government figures on traffic signs in England provide an indication. Road signs for cycle routes rose from 1,572 in 1993 to 41,188 in 2013, and for 'cycle information' from 1,018 to 36,418 (Table 1).

9 There appear to be no national level data on bus lanes, though based on available figures from local/regional bodies it is possible to estimate the total UK length at roughly 400 miles.

10 'End of the line for the lanes: Motoring groups hail Liverpool's 'bold' move to scrap bus routes...but will other cities follow suit?', *Daily Mail*, 25 October 2014.

In 2013, Mayor Boris Johnson announced a £1 billion, ten-year cycling infrastructure programme, to include segregated 'superhighways' and junction changes to favour cyclists (GLA 2013). Typically, these 'superhighways' involve reducing road space and parking for other users.[11]

### *20 mph zones*

The promotion of cycling is part of the rationale for reducing the default urban speed limit from 30 to 20 mph. The rationale for low urban speed is sound, but the means for achieving it is regrettable.

In 2013, Islington in London became the first local authority to impose a blanket 20 mph limit across the borough.[12] Numerous councils have followed suit, including Birmingham, Manchester, Glasgow, Liverpool and Bristol, as well as other London boroughs.

By summer 2015, around 14 million people lived in boroughs that had adopted or were adopting 20 mph. 90 per cent of roads in Birmingham will see the lower limit applied.[13] While most councils exempt key arterial roads, Transport for London now applies the 20 mph limit to selected 'red routes'[14] Certain pressure groups want it to be the national standard in built-up areas.[15]

Speed limit reductions are not restricted to 20 mph zones. Many major urban roads have seen 40 mph reduced to 30 mph and stretches of rural 'A' road from 60mph to 50 mph. In the absence of direct data, it is telling that the number of speed limit road signs in England increased from 224,885 in 1993 to 441,394 in 2013, a rise of 96 per cent (Table 1).

11 For details of the network, see https://tfl.gov.uk/modes/cycling/routes-and-maps/cycle-superhighways
12 http://www.islington.gov.uk/services/parking-roads/street_improvements/Pages/20mph_limit.aspx
13 http://www.bbc.co.uk/news/uk-england-birmingham-24208988
14 http://www.standard.co.uk/news/transport/20mph-limit-on-major-london-routes-in-radical-plan-to-save-lives-10102995.html
15 See, for example: http://www.livingstreets.org.uk/make-a-change/take-action-with-us/20mph

### *Parking restrictions*

A similar story of intervention and restriction is evident in the expansion of parking controls. Controlled Parking Zones (CPZs) require residents and businesses to buy permits to park outside their homes and premises. They have spread from city centres to inner cities and, in London at least, to the outer suburbs. Non-permit holders must buy vouchers for parking bays that may be some distance away from their destination. If they return a few minutes late, they will find a penalty ticket representing a hefty fine.

Permit charges vary but can cost several hundred pounds. Some councils, Islington for example, use permits to deter high-polluting vehicles. It adjusts permit charges according to 13 bands based on CO2 emissions, from zero for electric vehicles to £434 a year for vehicles in the highest emissions band.[16] In June 2015, Islington introduced a £96 a year surcharge for diesels.[17] Typically, business permits are more expensive still – as much as £1,351 a year in Islington.[18] So permits are used not just to ration parking space, but to support transport policy. Clearly the cost and aggravation of CPZs have the potential to deter car ownership, particularly for lower-income households and 'outsider' groups who may struggle to deal with associated local authority bureaucracy.[19]

Parking is used as a transport policy tool in other ways. In the 1990s, some councils adopted a 'car-free homes' policy, where planning permission was conditional upon no parking provision. Residents could also be denied permits to park on nearby streets – effectively rendering car ownership unpractical. A key objective was to deter car use and favour public transport (DETR 2000).

From 2001 to 2011, to favour a modal shift away from motoring, central government placed restrictions on town centre parking.[20] In rare cases, after the decline of many town centres, blanket restrictions were lifted, but most councils maintain a policy of discouraging long-stay parking for town

16 http://www.islington.gov.uk/services/parking-roads/parking/parking_permits/Pages/resident_permit.aspx?extra=10
17 http://www.islington.gov.uk/services/parking-roads/parking/Pages/Diesel-surcharge.aspx
18 http://www.islington.gov.uk/services/parking-roads/parking/parking_permits/Pages/business-permits.aspx
19 For example, migrant workers and short-term residents who may lack the relevant 'proof of residence' documents and/or have poor English skills.
20 https://www.gov.uk/government/news/high-streets-get-boost-from-fairer-parking

centre workers, while adopting more lenient policies for short-stay shopping. This is reflected in parking rates to deter employee parking, with transport policy objectives outweighing commercial criteria. In 2012 Nottingham City Council took this approach a step further with the introduction of a 'workplace parking levy' on employers who provide staff parking. The revenue raised is used to help fund public transport schemes.[21]

Other traffic management measures, such as traffic calming and bus or cycle lanes, have reduced on-street parking provision. Sometimes this has exacerbated parking problems, enabling local authorities to bolster public support for further parking controls. Restrictions in one zone may displace problems further afield, providing a justification for new zones.

According to government estimates, road signs in England denoting parking restrictions rose from 35,875 in 1993 to 337,880 in 2013, an increase of no less than 842 per cent (DfT 2013). In the same period, the number of CPZ signs rose by 272 per cent (Table 1).

***Table 1: Growth in the number of road signs in England (1993-2013)[22]***

| Type | 1993 | 2013 | Growth |
|---|---|---|---|
| All signs | 2,161,695 | 4,571,710 | 112% |
| Traffic signals ahead | 5,836 | 15,780 | 170% |
| Speed humps | 4,675 | 98,351 | 2004% |
| Bus lanes | 2,742 | 20,471 | 647% |
| Cycle routes | 2,857 | 36,418 | 1175% |
| Cycle information | 1,018 | 31,154 | 2960% |
| Speed limits | 224,885 | 441,394 | 96% |
| Controlled parking zone | 18,294 | 68,090 | 272% |
| Waiting/loading restrictions | 443,790 | 554,296 | 25% |
| Parking regulations | 35,875 | 337,880 | 842% |

Source: DfT (2013)

21 http://www.telegraph.co.uk/motoring/news/9179055/Tax-on-workplace-car-parks-begins-in-Nottingham.html

22 See DfT (2013) for details of the definitions and methodology used.

# The economic impact of traffic control policies

Given the importance of road transport to the UK economy, there are *prima facie* grounds for concern about the economic impact of measures that increase delays. The vast amount of road traffic means that small increases in journey time translate into gigantic losses. On top of this are the wider effects on labour mobility, agglomeration economies and productivity.

Yet benefits are claimed for 'anti-car' measures over the last two decades, such as improvements in air quality, road safety and urban environments.

In fact, the cost-benefit balance is time and place specific – and subjective. Delays may be particularly significant at night or in rural areas, where a driver would otherwise enjoy an unimpeded journey. The cost of delay will vary from person to person, depending how they value their time.

The top-down, command-and-control approach applied to traffic management does not reflect diversity of circumstance and preference, a problem exacerbated by the high degree of political centralisation in the UK. Local councils depend on central government for their funding, which can be in the form of dedicated grants for particular schemes.

Accordingly, there is a bias towards one-size-fits-all policies that take insufficient account of local conditions. At particular times of day, bus lanes may benefit inner-London routes with frequent services, but costs might outweigh benefits in suburban and rural locations. Yet there is a risk that policy prescription and funding incentivise transport authorities to expand such measures beyond reason. Traffic management, particularly small-scale schemes, is seldom subject to cost-benefit analysis, and when analysis is undertaken, it often overlooks negative effects. Moreover, it is

open to political pressure and influence from special interests. A consultancy that produced the 'wrong answer' might lose work from officials keen for a scheme to proceed.[23] Similarly, academics involved in cost-benefit analysis are typically 'court intellectuals' - directly or indirectly state-funded, with their careers dependent on adherence to the same broad policy agenda.[24]

Given the absence of aggregate data, as well as the complexities of the subject and methodological limitations, it is not possible to provide a full assessment of the costs and benefits of traffic management measures. But it is possible to appraise many of the economic assumptions made by transport policymakers, and to provide evidence that their analysis often exaggerates benefits while underplaying costs.

### *Direct costs*

Traffic management involves major installation, operation and maintenance costs. DCLG accounts reveal that in financial year 2012/13, local authorities in England spent £428 million on traffic management and road safety (DCLG 2014). In addition, £293 million went on transport planning, policy and strategy. Precise figures are hard to gauge, but a fair slice of English councils' £3.5 billion annual construction and maintenance budget is likely to go on traffic management. Measures such as bus/cycle lanes and traffic signals, with their component costs, are often installed as part of new developments. Including devolved spending, for example in Scotland, Wales and Northern Ireland, a conservative estimate of direct state spending on traffic management is £1 billion a year, though the actual figure is likely to be far higher. To this can be added the wider economic losses from the tax-funding of such expenditure, likely to add at least a third to the official cost (see Feldstein 1995).

Local authorities in England spent an additional £800 million on parking services in 2012/13 (DCLG 2014) but received £1.3 billion revenue from

23 The deficiencies of cost-benefit analyses are mentioned here in passing. For detailed discussion see Aizlewood and Wellings (2011); Starkie (2013); Wellings (2006b; 2013).

24 According to Rothbard (1973), 'The leading role of the intellectual throughout history is that of the court intellectual, who, in return for a share of, or junior partnership in, the power and pelf offered by the rest of the ruling class, spins the apologias for state rule with which to convince a misguided public.'

parking fees. The UK-wide cost of local authority parking charges is in the order of £1.5 billion a year.[25] In addition to parking fees there were £267 million in congestion charges in 2012/13, primarily through the central London scheme, with £129 million going on administration costs.

### *Environmental costs*

Although environmentalism has been a driving force behind the growth of traffic management, the measures themselves have produced serious environmental costs. These must be set against presumed (and highly questionable) benefits. For example, modal shift to public transport may deliver few if any gains if motorists switch to noisy and polluting diesel buses, or if energy-intensive new rail infrastructure forms part of the policy package. Moreover, the environmental costs and benefits of 'anti-car' policies are notoriously difficult to quantify, particularly in the case of global warming, which involves forecasting economic and climate outcomes decades in advance (see Whyte 2013). Assessing local impacts is also problematic, particularly the role of land-use planning controls in forcing people to live in high-noise, high-pollution locations (Wellings 2006b; 2012).

In any case, it is clear that the manufacture, delivery, installation, maintenance and administration of traffic management systems consume vast energy and resources. A 2006 study estimated that traffic lights in the UK consumed 102 million kwh of electricity a year, equivalent to around 30,000 homes (UKERC 2006). As a result, approximately 50,000 tonnes of CO2 entered the atmosphere.[26] Further resources are required for installing and maintaining infrastructure such as bus and cycle lanes.

25 English councils made a 'profit' on 'parking services' of £458 million in 2012/13 (DCLG 2014).

26 Although the number of signals has increased since then, energy consumption per unit has fallen as incandescent bulbs have been replaced with LEDs (which may also save on maintenance costs).

Yet the direct environmental impact of traffic management pales into insignificance when the spill-over effects on road-users, residents and businesses are taken into account. Traffic lights add to fuel consumption as drivers brake and accelerate, increasing emissions, noise pollution and harmful health effects, bringing considerable extra costs (Cassini 2007). [27]

Furthermore, the mishmash of signals, signage, yellow lines, railings and bollards damages the aesthetic quality of the public realm (see CIHT 2010). The number of traffic signs in England reached 4.57 million in 2013, an increase of 111.5 per cent compared with 1993 (DfT 2013). In towns and cities, the juxtaposition of traffic control infrastructure with historic streetscapes is particularly jarring.

This is just one aspect of the 'urban blight' associated with traffic management. Parking policies appear to have a particularly detrimental impact, often combined with other measures (see Portas 2011). Bus and cycle lanes can mean parking restrictions outside homes and businesses. These may deter car-owning households which, compared with car-free households, tend to be better off (ONS 2014). They may be replaced by a shifting population in multiple-occupancy housing or low-income tenants on housing benefit and/or local authority leases. Thus traffic control can contribute to social decay.[28]

Similarly, anti-car policies can damage local businesses by making it less convenient to visit their locality. With car owners' spending pushed elsewhere, local businesses may fail or go downmarket in a spiral of urban 'degeneration'.[29]There is already a problem with shabby high streets blighted by boarded-up businesses and a shift downmarket catering to lower-income, non-car driving customers. Unattractive environments in turn deter the better-heeled from residing in the afflicted areas. Blighted neighbourhoods may then become targets of government regeneration policies, at additional cost to taxpayers.

27 The impact of traffic management measures on pollution levels will of course vary by location and depend partly on the effect of overall traffic levels in a given locality. It has been hypothesised that the health costs of urban air pollution from vehicles are very high indeed (e.g. Public Health England 2014), although the underlying research methods have been questioned (e.g. Milloy 2013).

28 This field would benefit from further research to explore the relationship.

29 A survey of local newspaper reports reveals this to be a widespread problem across the UK. For example: 'Bus lanes have put me out of business, claims shop owner', *Manchester Evening News*, 12 January 2013.

### *Economic impact on road-users*

As with environmental impacts, the economic effects of traffic management are hard to quantify. It is certainly the case that for large parts of the network and for much of the time, the benefits of traffic management are negligible or non-existent, while costs are substantial. These include situations where without controls, traffic would flow freely. Traffic management can reduce delays, for example with signal control enabling minor road traffic to join or cross a main road during peak hours, although as explained below, a change in priority rules could address this issue. Similarly, active traffic management on motorways may be effective at reducing rush-hour delays by increasing capacity through lower speeds, although observation of the Highway Code – use the inside lane except when overtaking – would mitigate the problem.

In any event, some of these policies have been extended far beyond any sites where an economic case can be made for benefits outweighing costs.

Transport for London's own modelling suggests that the flagship East-West Cycle-Superhighway will lead to serious added delays. For vehicles, peak journey times between the Limehouse Link tunnel in Docklands to Hyde Park Corner will more than double, adding around 20 minutes to this crucial cross-London route (TfL 2014). At the same time, the new lane will do little to speed up cycling, shaving only two minutes off the journey from the East to West End.[30]

It is difficult to see how such measures offer value for money in terms of standard cost-benefit analysis. Accordingly, TfL has added difficult-to-quantify benefits, such as improvements in 'ambience' and 'reduced absenteeism'. Despite this, costs outweigh benefits by a factor of five, producing total discounted losses of £200 million over 30 years (TfL 2015a).

Similarly, a TfL roundabout project at Elephant and Castle 'has predicted journey time delays whose monetised value significantly outweighs the monetised ambience, safety and health benefits of the scheme, by a factor of almost three to one' (TfL 2015b). According to official estimates, the economic costs of London's 'Low Emission Zone', introduced in 2008, far outweighed the benefits (TfL 2005).

30 In fact these alleged reductions in journey times are questionable given the tendency for some cyclists to minimise journey time by nipping through on red or using pavements.

The fact that TfL implements such poor-value schemes – and there are many other examples – suggests that politics and ideology override economic logic. Other transport authorities appear to have adopted a similarly 'anti-economic' approach.[31]

The results of the Liverpool bus lane study, for example, suggest that bus lanes were introduced with insufficient consideration of the costs to other road-users. The removal trial showed major journey time savings in several locations, suggesting the lanes were responsible for significant delays (LCC 2014). At three sites, the removal of bus lanes speeded up journeys for bus passengers as well as general traffic, a win-win result. Again, it is likely they were installed without adequate economic analysis.

Successful experiments (detailed below) involving the removal of traffic lights suggest that the potential for self-management has been seriously underestimated by transport planners and policymakers. This is despite their duty under the 2004 TMA (Traffic Management Act) to explore all possible options for improving congestion, road safety and air quality.

The importance of the road network to the UK economy means that delays caused by traffic management impose heavy costs. Government estimates of the value of travellers' time imply that a delay of just two minutes to every car trip imposes annual costs of roughly £16 billion, equivalent to almost 1 per cent of GDP.[32] It can be calculated that a 1 per cent increase in car journey times imposes time losses worth approximately £200 million in London. Further costs encumber other vehicles such as buses, HGVs and bicycles.

On top of the cost of delays, traffic policy increases fuel consumption, emissions and vehicle maintenance. Traffic signals require frequent braking and acceleration. Road humps and other obstacles may increase wear on tyres and suspensions, and damage bodywork and exhausts. With effects hard to isolate, it is difficult to quantify such costs, but with over 30 million vehicles on UK roads even a small percentage increase in annual fuel and maintenance costs translates into a substantial sum. Such costs are not given due attention by policymakers.

31 This is also a problem at national level. For example, the Transport Select Committee's (2011) report on congestion failed to mention the role of traffic signals in generating delays, despite the testimony of expert witnesses.

32 Authors' calculations using 2014 DFT webTAG estimates (adjusted to 2015 prices). For an illustration of the methodology, see: http://www.transport-watch.co.uk/topic-9-appendix-1-calculations

### *Accidents, health and safety*

Traffic management schemes are often justified on safety grounds, but alleged benefits are debatable. Coincidentally there was a drop in the number of KSIs (killed and seriously injured) on UK roads, which have roughly halved since the mid-1990s. Yet this declining trend long predates much current traffic management. Other factors are at work, such as improved vehicle safety and less drink driving. Stagnant or falling real wages and a sluggish economy have contributed to a reduction in traffic growth in the last decade, which flatters the accident statistics vis-à-vis previous periods. Other factors are the ageing population and increased regulatory barriers to driving for high-risk young people. In any case, as Adams points out, accident data do not measure danger, and improving statistics may reflect the presence of other costs:

> 'There are many dangerous roads that have good accident records because they are seen to be dangerous - children are forbidden to cross them, old people are afraid to cross them, and fit adults cross them quickly and carefully. The good accident record is purchased at the cost of community severance - with the result that people on one side of a busy road tend no longer to know their neighbours on the other.'
>
> Adams (1998: 6)

Many studies appear to show accident reductions at speed camera sites. But separating causal factors is problematic. 'Regression to the mean' is rarely mentioned but may account for atypical 'blips' in incident frequency (Forster 2012).

Even if there are localised benefits, it is argued that traffic controls are detrimental to 'driving culture' and road safety generally.[33] A high degree of regulation, especially based on anti-social priority, subverts our social nature and removes individual responsibility; it makes road-users rely on third-hand instructions rather than first-hand judgement about how to adapt to the conditions and proceed safely. The most obvious example is the traffic light: in taking our eyes off the road, it flouts the fundamental principle of road safety: to watch the road. Similarly, exceeding the designated

33 For example, see Adams (1999) on 'risk compensation' issues. Buckingham (2003) examines the counterproductive effects on driving culture of speed cameras.

speed limit may be perfectly safe in favourable conditions, whereas driving within the limit can be lethal in fog or on busy streets.

Well-meaning but misguided traffic policy contrives other dangers, above all, inappropriate, conflicting speeds, as the following examples illustrate.

Imagine approaching a rural main road from a minor road. You want to turn right. High-speed traffic is coming at you from opposite directions. You wait interminably for a viable gap, or you hope, as you pull out in frustration and despair, that the traffic (licensed by the rule of priority to plough on regardless) will slow down to let you cross one stream and enter the other.

At a four-way crossroads with traffic lights, two opposing traffic streams are in a stationary queue at red. On the opposing junction arm, traffic is crossing or approaching on green. Cautious drivers slow down, anticipating a return to red. Assertive drivers accelerate to beat the light in a bid to avoid another hold-up. Is it surprising that a great many injury accidents take place at traffic lights or priority junctions?[34]

The system not only contrives danger, it is also inefficient. Traffic wanting to turn right, already in the junction and ready to go, must wait for traffic approaching from the opposite direction, not yet in or even near the junction, to clear. Some right-turners will risk small gaps, with potentially fatal results. Others wait for a sizeable gap and block traffic behind them, causing further congestion and frustration. It's not uncommon for right-turners to endure a second, and even a third signal change before they can get out of the junction they entered long ago. The authorities may introduce a separate green filter to allow right-turns – but these are rarely timed to allow the whole queue to clear. So drivers sit there fuming, in both senses, for another entire signal cycle change. And the other three junction arms also sit fuming, raring but forbidden to go.

Interventions that inhibit movement have other health and safety consequences. In some locations, for every life saved, far more are lost through delays to emergency vehicles. A study in Boulder, Colorado, estimated the ratio of lives lost to lives saved for a proposed traffic calming scheme at a shocking 85 to 1 (Bowman 1997). Similarly, in London it has

34 For example, a 2012 safety audit from Westminster City Council showed that 44 per cent of personal injury accidents occurred at traffic lights. See http://www.equalitystreets.com/

been estimated that traffic calming is responsible for the deaths of 500 people a year.[35] This partly reflects the extreme time-sensitivity of heart attacks, with delays in treatment of just a few minutes dramatically increasing mortality rates. Road humps can also cause pain and discomfort to travellers with arthritis, back pain and similar ailments, requiring ambulances to negotiate them at a snail's pace.

Traffic management interventions also have a long-term impact on health outcomes through their effect on productivity and wealth creation. If economic activity is suppressed, fewer resources are available for healthcare.

### *Wider economic impacts*

One way in which traffic management policies risk suppressing economic activity is by raising the costs of exchange. Trade is reduced and associated benefits lost. Thus traffic controls can damage productivity and economic output by reducing the division of labour, economies of scale, competition and so on (see above).

Longer journey times reduce employment opportunities within reasonable travelling distance. This effect on labour mobility reduces economic output by increasing unemployment and preventing workers optimising their productivity in labour markets. Clustering and specialisation – so-called agglomeration economies (see above) – are also negatively affected. Again, these effects are hard to quantify, in part because many of the costs take the form of 'lost opportunities'.

While traffic controls may suppress mobility, they may also encourage modal shift, a key rationale for implementing them. If there is spare capacity on public transport in a particular locality, the marginal costs of such changes in travel behaviour may be small. But where there are capacity constraints, the long-term effect may be upward pressure on government subsidies to railways, buses and trams. These are currently running at approximately £12 billion a year (DFT 2014).

35 For example, 'Road humps hamper police response', BBC News, 3 December 2003, http://news.bbc.co.uk/1/hi/england/london/3288795.stm

# A better approach?

The above analysis provides evidence that transport policy fails to take account of the full costs of traffic management. It appears that benefits are exaggerated and costs played down. Certainly there is evidence that traffic management has spread far beyond the locations where it might be justified. Arguably this is a symptom of a centralised, command-and-control approach, with insufficient regard to the potential for cooperation in human nature or to variations in circumstances of time and place.

The case against current traffic policy is further strengthened by evidence that an alternative approach can deliver many of the desired objectives, such as greater road safety, without the colossal costs. This approach replaces command-and-control with self-control. In the process, its proponents argue, human conduct adapts constructively to time, place and context. Restoring individual responsibility and harnessing human nature achieves what coercion never will: safe speeds, mutual tolerance, cooperation, compliance without resentment.

This alternative approach is best known as 'shared space', although Ben Hamilton-Baillie, who coined the term, now prefers 'low-speed environments'. Shared space is too often confused with shared (flat) surfaces, which are unsuitable for blind people who need to orientate themselves. Kerbs tell them where the pavement ends and the road begins.

According to its proponents, shared space is about integration rather than segregation; designing roads for a social rather than a traffic engineering context.[36] Conventional traffic infrastructure, such as traffic lights, road markings, railings and bollards, have no place in shared space. As soon

36 For more explanation, see http://www.equalitystreets.com

as drivers are free of vexatious regulation, it is argued, they behave differently. They see pedestrians and cyclists as fellow road-users, and make common cause. It becomes a case of 'After you' instead of 'Get out of my way!'

Conventional traffic control demands disproportionate attention. It promotes competition for gaps and green time. Removing it stimulates cooperation and empathy. But so far, despite safety, social and economic benefits, the unregulated approach has been adopted in very few locations.

At their least ambitious, these projects have consisted of 'decluttering' exercises, such as removing street furniture and reducing signage. The completion of a scheme in Kensington High Street in 2003 brought a 43 per cent drop in the accident rate.[37] However, it retained high kerbs and traffic signals, so the improvements are largely cosmetic. A handful of more ambitious projects are more relevant to this discussion.

### *Ashford*

A comprehensive approach was taken in Ashford, Kent, where the redesign of the town's ring road, completed in 2008, incorporated the UK's 'first fully functioning shared space scheme'.[38] The ring road had acted as a barrier to movement between the town centre and adjacent areas, and it blighted the urban environment. The shared space scheme simplified the layout and removed conventional highway engineering features, with all users occupying a largely unmarked level surface with little street furniture (Moody and Melia 2014: 4). It is surfaced with attractive granite slabs rather than tarmac.

The scheme appears to have been successful in many ways. It won numerous design awards[39] , and was acknowledged to have improved the urban environment dramatically.

37 'Life on the open road', *The Guardian*, 12 April 2006, http://www.theguardian.com/society/2006/apr/12/communities.guardiansocietysupplement

38 'Shared Space: Breaking Boundaries – Transforming Ashford's Ring Road', Ashford Borough Council, http://www.ashfordbestplaced.co.uk/live_here/transport_and_travel/shared_space

39 Another award for Ashford's shared space', Kent Online, 18 March 2010, http://www.kentonline.co.uk/ashford/news/another-award-for-ashfords-shar-a87025/

There was a 41 per cent drop in injury accidents in the three years following completion.[40] Early evidence suggests that congestion has fallen despite a small increase in traffic flows, together with reductions in noise and air pollution, as vehicles now proceed much more smoothly.[41] There have been criticisms, however (see below).

### *Portishead*

Radical steps were also taken at the Cabstand junction in Portishead. In 2004, traffic signals were installed at a cost of £800,000. Severe congestion and delays followed, much to the frustration of residents and businesses, who held protest marches calling for the signals to be removed.[42]

The council remained intransigent until, in June 2009, the lights failed for a few hours and the traffic jams disappeared. Cassini spotted the story and lobbied the Council, who agreed to a lights-off trial. It started on 14 September 2009. The results were instantaneous. Despite a return from back-street rat-runs and greater numbers using the now free-flowing main route, there was a dramatic drop in congestion and journey time, as confirmed by monitoring of the trial (Cassini 2010; Firth 2011). In the words of traffic engineer Keith Firth:

> 'Within hours of hooding the signals, things were looking bleak for the traffic engineering fraternity. Up to 2000 vehicles per hour sailed through the junction with little, if any, delay and queues disappeared on all the approaches. Drivers were courteous to each other, a good proportion slowed to allow pedestrians to cross, and road users interviewed a few days before the trial who had said it would be chaos, now reported that they were prepared to have a three-course millinery delight.'
>
> (ibid: 74)

40 '"Fewer injuries" in Ashford shared space road scheme', BBC News, 31 July 2012, http://www.bbc.co.uk/news/uk-england-kent-19065954

41 W. Tomaney quoting Kent County Council data: http://www.rtpi.org.uk/media/10116/Case-Study-Ashford-Ring-Road-PDF-7.pdf

42 '£200,000 to be spent on improving Portishead's Cabstand junction', *Bristol Post*, 18 July 2014, http://www.bristolpost.co.uk/pound-200-000-spent-improving-Portishead-s/story-21654996-detail/story.html

The benefits were so obvious that after ten months the council decided to make the trial permanent and removed the traffic lights altogether. The Portishead experiment has been marked by a very low accident rate, although small sample sizes make statistical analysis problematic. Firth concludes that 'removing all forms of conventional junction control resulted in less traffic congestion, fewer delays and queues, and greater capacity, with little impact on pedestrian amenity' (ibid).

### *Poynton*

To date, the most 'radical' scheme was completed in the small Cheshire town of Poynton in 2012 (Cassini 2013). In the absence of a bypass, 26,000 vehicles a day use its main thoroughfare, and there are hundreds of pedestrian movements. The crossroads in the village centre, Fountain Place – typical of urban crossroads throughout the land – suffered from traffic queueing at red lights or speeding through on green, with pedestrians marooned on traffic islands breathing the polluted air. The traffic-dominated environment was alienating and deterred shoppers. In 2010, sixteen shops in the town centre were empty (ibid.). It was a community divided, and there was a record of serious accidents involving pedestrians.

Resisting sustained opposition from traffic officers, local businesses and residents, Councillor Howard Murray commissioned street designer Ben Hamilton-Baillie to transform the space. Traffic lights, railings, signage and bollards were scrapped. Multi-lane approaches were reduced to single lanes, thereby freeing carriageway space for other activities and on-street parking.

The scheme has brought all-round benefits (Kirkup 2013). Outside rush-hours, journey times and delays have dropped. Civility is the order of the day: instead of racing to beat the lights, drivers slow down and give way to pedestrians. Instead of stopping and starting as before, traffic now moves smoothly through the junction. Evidence shows a fall in overall accident rates of 70 per cent, and a complete absence of serious injuries.[43] The taming of the traffic and the uncluttered, attractive streetscape have brought regeneration. Footfall and turnover have more than doubled. Instead of empty premises, there is now a waiting list of applicants.[44]

43 Police data obtained through private correspondence.
44 Private correspondence.

Poynton is particularly important because it shows the success of this approach at junctions with heavy traffic, challenging earlier Department for Transport assumptions (DFT 2007: 83) that shared space can only work on streets that restrict traffic.

### *Priority vs. cooperation*

Opponents of current traffic policy argue that the contrived distinction between major and minor roads, which grants superior rights to one set of road-users over others who were there first, subverts our natural desire to take it in turns. The success of deregulation in Portishead, and deregulation and 'sociable' street design in Poynton, appears in large part due to the absence of the rule of priority and the regulation that enforces it. Now cooperative instincts can flourish.

This helps explain why road-users adapt quickly when traffic lights break down. They use common sense and common courtesy to filter through, often far more efficiently than when the lights were 'working'.[45] Removing priority therefore removes the 'need' for traffic control by enabling all road-users to do what is natural and intrinsically safe: approach carefully and merge more or less in turn.

45 See for example: 'Yorkshire junction with 42 traffic lights worked better when they broke', *Daily Telegraph*, 8 October 2015.

# Criticisms

Although many assessments of shared space-type initiatives are positive, there are criticisms. Moody and Melia's study of the Ashford scheme finds, for example, that the design made a high proportion of pedestrians feel unsafe, despite the available data suggesting a decline in the accident rate (Moody and Melia 2014). There may of course be a benefit with this, in the sense that uncertainty about priority prompts more cautious behaviour.

The blind and partially sighted object to the loss of features such as kerbs that aid navigation and give them a sense of security.[46] It should be noted that shared space does not require shared (flat) surfaces, though as mentioned, the terms are often confused. Hence Hamilton-Baillie's preference for the term 'low-speed environments', and the writers' preference for 'sociable streets' or 'equality streets'.

Many of the high-specification projects such as Ashford and Exhibition Road in London share some command-and-control characteristics with conventional traffic management, notably standard traffic control at both ends of the street. This may, however, be difficult to avoid given current institutional and ownership arrangements (see below). While the schemes themselves may be centrally planned and funded, at least their objective is to reduce regulation and foster a greater degree of mutual tolerance among road-users.

The cost to taxpayers of high-specification shared space projects raises issues. At 2015 prices, this element of the Ashford scheme cost

46 For example: http://www.guidedogs.org.uk/supportus/campaigns/streets-ahead/shared-surfaces#.VYrOnkZ0eq5

approximately £13 million[47], while Poynton cost about £4 million.[48] There have also been maintenance problems, in the case of Poynton owing to short-term council cost-cutting. This raises the question of whether such initiatives represent good value for money compared with other transport investments such as bypasses. When a large part of the benefits relate to improvements in the urban environment[49], it is not entirely clear how schemes can be compared using conventional cost-benefit analysis.

In this context, the economic case for simple traffic control removal such as Portishead is far more clear-cut. In suitable locations, rolling back traffic control would appear to be a win-win policy. Substantial time savings are achieved through reduced delays and congestion. Operating and maintenance costs are slashed or eliminated. There are improvements in road safety and air quality. Because such deregulation delivers substantial benefits while reducing public expenditure, the benefit-cost ratio is likely to be very high, far outstripping conventional transport investment options.

47 https://democracy.kent.gov.uk/documents/s3245/20081121143624119.pdf

48 Although the marginal cost was far lower since Fountain Place was due an expensive traffic signal upgrade and the scheme included extensive repairs to underground drainage. See: http://www.hamilton-baillie.co.uk/_files/_projects/100-3.pdf

49 Correspondence with local estate agents suggests that the scheme has made the shopping area a much more attractive area for working, walking, shopping and eating/drinking.

# Reforming traffic management policies

An economically rational transport policy would therefore prioritise the removal of standard traffic control where it is clear the costs outweigh the benefits. The long-term solution is institutional reform and a departure from the existing top-down approach (see below). Nevertheless, the following strategies illustrate the kind of measures that might be adopted to address the costs imposed by current policy.

- Traffic signals could be taken out where they cause unnecessary delays, perhaps following Portishead-style trials where lights are switched off for several weeks to observe the impact. Successful schemes in Drachten in the Netherlands (in 2002) and Bohmte in Germany (in 2007) scrapped over 80 per cent of their traffic lights. Together with the Portishead experiment, this suggests a broadly similar proportion of signals could be removed in the UK.[50] High-specification shared-space designs, as seen at Ashford and Poynton, might be considered at complex junctions where improvements to the urban environment would be particularly beneficial. At multi-lane intersections carrying high traffic volumes, signal control might still be required but, given junction modifications, only during peaks.
- Bus and cycle lanes could be taken out where efficiency or safety benefits are too insubstantial to justify their consumption of road space. This is likely to be the case in many suburban and rural areas, where bus frequencies and cycle traffic are low.

50 This is an approximate estimate. A precise figure could only be obtained via detailed local surveys.

- Speed cameras could be switched off or removed where time losses exceed safety gains. For example, on ‘smart motorways’ they could operate only when active management is addressing congestion issues.
- Traffic calming could be removed from through routes where it produces delay and damage to vehicles, especially the emergency services, and air and noise pollution for residents. A similar approach could apply to 20 mph speed limits.
- Parking regulation could be restricted to locations where there is a genuine scarcity of spaces. Councils could reverse the policy of reducing provision to contrive shortages. Wherever possible, parking outside dwellings and businesses should be restored, particularly where there is a risk of urban blight and social decay.

# Removing barriers to change

While the potential economic benefits from such a policy shift are momentous, there are numerous institutional obstacles to implementing it. First, traffic management policies have fostered bureaucracies at local, regional, national and even EU level. This means officials have a vested interest in their continuance and growth in order to preserve jobs, salaries and status (Cassini 2010).[51] Local authorities themselves have become increasingly reliant on revenues derived from traffic enforcement, parking fees in particular, but also other penalties against drivers. The importance of such income sources has arguably increased in the context of the deficit reduction programme, which in many cases has resulted in government funding cuts.

Second, there is a 'private sector' industry that manufactures, installs and maintains traffic signals, speed cameras and other equipment and infrastructure. This concentrated special interest, dependent on government contracts, is likely to lobby hard to retain its source of profits.

Third, certain road-user groups would resist change. Even if a policy disadvantages users and local residents generally, it may benefit narrow interests. For example, bus companies and cycling groups often demand priority measures, even where the cost to other road-users exceeds the benefits to their chosen mode. Such costs may bolster those special interests by encouraging more motorists to travel by bus or bike, thereby swelling their numbers and political clout.

51 See Butler (2012) for an introduction to the economic literature on such interest group behaviour.

Fourth, ideological opponents represent a major obstacle to change. For radical environmentalists, the long-term risks of global warming might trump conventional economic analysis of costs and benefits. Thus any measure that deters motoring, and mobility in general, would tend to be supported (see Wildavsky 1986). Similarly, egalitarians might prioritise collectivist public transport policies that redistribute resources from rich to poor over economic efficiency. They might favour anti-car traffic policy as a matter of principle because it deters private motoring – seen as socially divisive and a way of signalling social status (Prescott 1992; Torrance 1992).

# From command and control to voluntary cooperation

Reflecting the high degree of centralisation in policymaking, command-and-control traffic policy is highly susceptible to 'capture' by both special interests and ideological agendas. Policies adopted by a relatively small number of politicians and officials are imposed across the UK, largely regardless of the preferences of road-users and local residents.

Democratic processes offer little restraint. Voters must decide whole packages of policies across a range of issues, of which transport is only one. Policies are also subject to 'agenda setting' and 'priming' in the media, by which special interests attempt to influence the terms of the debate (see, for example, Iyengar and Kinder 1987).

Deregulating traffic management is a powerful means of undermining top-down control and restoring responsibility to individuals, who are far better placed to adapt their behaviour to prevailing conditions by cooperating with other road-users in appropriate ways. However, without institutional reform, the conditions will still pertain for harmful regulation to be imposed from above. It is not difficult to see how 'shared space' schemes in particular could be corrupted to serve special interest groups or particular ideological agendas, for example if combined with reductions in road capacity that imposed significant economic harm.

A first step to addressing top-down control would be to phase out central government grants to local authorities for traffic management schemes, including those that form part of road upgrades. If councils had to raise the money themselves, they might be more careful about their effect on the local economy and their tax base. Currently, they enjoy the benefits of central government funding but do not face the costs.

While greater ‘localism’ could improve the problem, it would not necessarily solve it. Local politicians and officials would remain susceptible to the special interest lobbying and ideological fads that afflict policymakers at national and supranational level – although local politicians might be more responsive to opposition from negatively affected parties.

Ideally, then, decentralisation should go much further than granting councils more fiscal responsibility. This might include transferring ownership of minor roads to residents’ groups and some major roads to mutual organisations separate from local government, or indeed commercial owners (see Knipping and Wellings 2012).

Decentralisation would make far better use of time and place-specific knowledge, ensuring that traffic management practices were tailored to local conditions. And unlike the current system, there would be financial incentives to avoid imposing economically harmful measures.

A decentralised system would be less prone to special interest influence. Instead of one-size-fits-all policies imposed from above, experimentation, entrepreneurship and diversity would encourage a constant discovery process by which better practices would evolve.

Given its enormous impact on the wider economy, roads policy is far too important to be left to politicians and bureaucrats.

# References

Adams, J. (1998) Risk, Freedom and Responsibility. Paper for conference on 'The Risk of Freedom'. Institute of US Studies, Senate House, 6 October.

Adams, J. (1999) *Risky Business*. London: Adam Smith Institute.

Aizlewood, K. and Wellings, R. (2011) *High Speed 2: The Next Government Project Disaster?* London: Institute of Economic Affairs.

Bowman, R. R. (1997) Deaths Expected from Delayed Emergency Response Due to Neighborhood Traffic Mitigation. Submission to City Council of Boulder, Colorado. http://www.calmingrisk.com/Bowman1997studyBoulderCO.pdf

Blythe, P. T. (2005) Congestion charging: technical options for the delivery of future UK policy. *Transportation Research Part A*, 39: 571–87.

Buckingham, A. (2003) Speed Traps: Saving Lives or Raising Revenue? *Policy* 19(3): 3-12.

Butler, E. (2012) *Public Choice – A Primer*. London: Institute of Economic Affairs.

Cassini, M. (2006) In your car no one can hear you scream! Are traffic controls in cities a necessary evil? *Economic Affairs* 26(4): 75-78.

Cassini, M. (2007) No idle matter. *Traffic Technology International*, October/November: 57-59.

Cassini, M. (2010) Traffic lights: weapons of mass distraction, danger and delay. *Economic Affairs* 30(2): 79-80.

Cassini, M. (2013) *Poynton Regenerated*. Documentary film. https://www.youtube.com/watch?v=-vzDDMzq7d0

CIHT (2010) *Manual for Streets 2*. London: Chartered Institution of Highways and Transportation.

DCLG (2014) Revenue Account Budget: 2012-13 data for England. London: DCLG.

DETR (2000) *Our towns and cities: the future - delivering an urban renaissance*. White Paper. London: TSO.

DfT (2007) *Manual for Streets.* London: Thomas Telford.

DfT (2013) *Estimating the number of traffic signs in England*. London: Department for Transport.

DfT (2014a) Road traffic (vehicle miles) by vehicle type in Great Britain, annual from 1949. https://www.gov.uk/government/statistical-data-sets/tsgb07

DfT (2014b) Road lengths (miles) by road type in Great Britain, annual from 1914. https://www.gov.uk/government/statistical-data-sets/tsgb07

DfT (2014c) *Transport Statistics Great Britain.* London: TSO.

DTLR (2001) *Transport Statistics Great Britain*. London: TSO.

Dudley, G. and Richardson, J. (2001) *Why Does Policy Change: Lessons from British Transport Policy 1945-99*. London: Routledge.

Feldstein, M. (1995) Tax Avoidance and the Deadweight Loss of the Income Tax. Working Paper No. 5055. Cambridge, MA: National Bureau of Economic Research.

Firth, K. (2011) Removing traffic engineering control – the awkward truth. *Traffic Engineering and Control*, 1 February.

Forster, A. (2012) New reports asks: are speed camera effects on collisions real or illusory? *Local Transport Today* 590: 8.

GLA (2013) *The Mayor's Vision for Cycling in London*. London: Greater London Authority.

GLA Economics (2009) *Economic Impact of Traffic Signals*. London: Greater London Authority.

Iyengar, S. and Kinder, D. (1987) *News That Matters: Television and American Opinion*. University of Chicago Press.

Jepson, D. and Ferreira, L. (1999) Assessing travel time impacts of measures to enhance bus operations. *Road and Transport Research Journal* 8(4): 41-54.

Kirkup, A. (2013) Poynton Town Centre. Institution of Civil Engineers, case studies. https://www.ice.org.uk/disciplines-and-resources/case-studies/poynton-town-centre

Knipping, O. and Wellings, R. (2012) *Which Road Ahead: Government or Market?* London: Institute of Economic Affairs.

LCC (Liverpool City Council) (2014) *Bus Lane Review Outcomes*. Liverpool City Council.

Milloy, S. (2013) *Airborne Fine Particulate Matter and Short-Term Mortality: Exploring the California Experience, 2007-2010*. https://junksciencecom.files.wordpress.com/2013/12/california-pm25-experience-2007-2010-final.pdf

Myddelton, D. (2007) *They Meant Well, Government Project Disasters*. London: Institute of Economic Affairs.

Moody, S. and Melia, S. (2014) Shared space: Research, policy and problems. *Proceedings of the Institution of Civil Engineers – Transport* 167(6): 384-392.

ONS (2014) *Family Spending – 2014 Edition.* Newport: Office for National Statistics.

Portas, M. (2011) *The Portas Review: An independent review into the future of our high streets*. London: BIS.

Prescott, J. (1992) Foreword. In Roberts, J., Cleary, J., Hamilton, K. and Hanna, J. (eds) *Travel Sickness: The need for a sustainable transport policy for Britain*. London: Lawrence and Wishart.

Public Health England (2014) Estimating Local Mortality Burdens associated with Particulate Air Pollution. London: Public Health England.

RAC Foundation (2012) Speed camera FOI data. http://www.racfoundation.org/media-centre/speed-camera-foi-data

Roth, G. (1996) *Roads in a Market Economy.* Aldershot: Avebury Technical.

Rothbard, M. (1973) *For a New Liberty: The Libertarian Manifesto.* New York: Collier Macmillan.

Short, M. S., Woelfl, G. A. and Chang, C-J. (1981) 'Effects of Traffic Signal Installation on Accidents', *Accident Analysis and Prevention*, 14(2): 135-145.

Starkie, D. (2013) *Transport Infrastructure: Adding Value*. London: Institute of Economic Affairs.

TFGM (2011) Traffic signals maintenance contract, 9 September.

TFGM (2014) Traffic signals maintenance review, 18 May.

TfL (2005) Proposed London Low Emission Zone, 28 September 2005. https://tfl.gov.uk/cdn/static/cms/documents/Agenda2809.pdf

TfL (2012) What is the capacity of the road network for private motorised traffic and how has this changed over time? Road Task Force - Technical Note 10.

TfL (2014) East-West Cycle Superhighway - Modelling Results. https://consultations.tfl.gov.uk/cycling/be832fad/user_uploads/east-west-cycle-superhighway-modelling-results---230914.pdf

TfL (2015a) Proposed Cycle Superhighway Schemes. https://tfl.gov.uk/cdn/static/cms/documents/board-20150204-part-1-item-07a-propose-csh-scheme.pdf

TfL (2015b) Finance and Policy Committee. Item 10: Elephant & Castle Northern Roundabout. 22 January 2015. https://tfl.gov.uk/cdn/static/cms/documents/fpc-20150122-part-1-item10-elephant-castle.pdf

TRL (2003) *Capacity implications of Advanced Stop Lines for cyclists*. Wokingham: TRL.

Transport Select Committee (2011) *Out of the jam: reducing congestion on our roads: Government Response to the Committee's Ninth Report of Session 2010–12*. London: TSO.

Todd, K. (2004) Traffic Control: An Exercise in Self-Defeat. *Regulation*, Fall: 10-12.

Todd, K. (2011) Written evidence to Transport Select Committee, October. http://www.publications.parliament.uk/pa/cm201213/cmselect/cmtran/506/506vw17.htm

Torrance, H. (1992) Transport for All. Equal Opportunities in Transport Policy. In *Travel Sickness: The need for a sustainable transport policy for Britain*. London: Lawrence and Wishart.

Wellings, R. (2006a) Environmentalism, Public Choice and the Railways. In *The Railways, the Market and the Government*. London: Institute of Economic Affairs.

Wellings, R. (2006b) Rail in a Market Economy. In *The Railways, the Market and the Government*. London: Institute of Economic Affairs.

Wellings, R. (2012) *Time to Excise Fuel Duty?* London: Institute of Economic Affairs.

Wellings, R. (2013), *The High-Speed Gravy Train: Special Interests, Transport Policy and Government Spending*, London: Institute of Economic Affairs.

Whyte, J. (2013) *Quack Policy: Abusing Science in the Cause of Paternalism.* London: Institute of Economic Affairs.

Wildavsky, A. (1986) *The Rise of Radical Egalitarianism*. Washington DC: AUP.

Yass, I. (2011) *Every Second Counts: Choices in the Operation of Traffic Lights*. London: RAC Foundation.

The Institute of Economic Affairs
2 Lord North Street
London SW1P 3LB
Tel 020 7799 8900
email iea@iea.org.uk