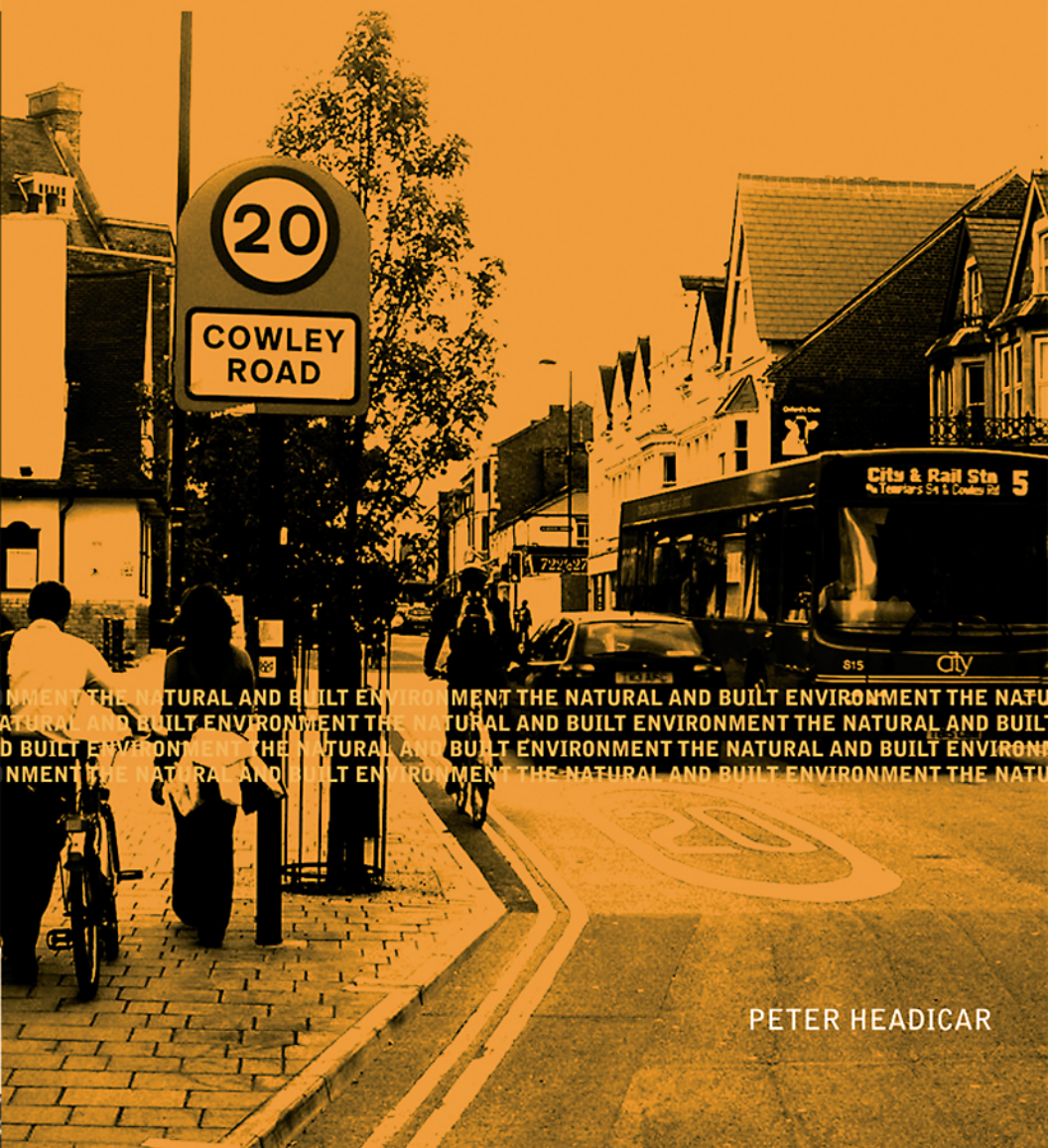
ROUTLEDGE

# TRANSPORT POLICY AND PLANNING IN GREAT BRITAIN




PETER HEADICAR

# Transport Policy and Planning in Great Britain

How can we manage transport in the 21st century? Peter Headicar makes sense of this large and complex field with explanations of the nature and origin of current policy and planning in Britain as well as the instruments available to national and local governments for tackling problems and fostering sustainable development. The decisions taken about policies and priorities are explored alongside the mechanisms through which choices about the future are conceived and evaluated. In particular, this book addresses the links between transport and spatial planning which are often poorly appreciated.

Designed as an essential text for transport planning students and as a source of reference for planning practitioners, it also furthers understanding of related fields such as urban and regional planning, environmental studies and public policy. Based on the postgraduate course the author developed at Oxford Brookes University, this indispensable text draws on a lifetime of professional experience in the field.

**Peter Headicar** is Reader in Transport Planning at Oxford Brookes where he leads the postgraduate teaching programme in transport.

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# Transport Policy and Planning in Great Britain

Peter Headicar

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# Preface

The main reason for writing this book was the thoroughly unoriginal one that, in attempting to teach the subject at Oxford Brookes University, I found that there was nothing published which dealt with the subject in the way I thought it ought to be. As a lecturer this made life difficult – though challenging and ultimately rewarding. From the students' perspective it also meant that there was no easy way of bridging the gap between what they heard in the classroom and wading through a list of references a mile long.

The reasons for taking such an individualistic standpoint probably have to do with my own educational and professional background. I was fortunate enough to take degrees in land use planning, transport and public policy – a combination which has left me forever committed to the view that transport planning is about people, places and politics rather than vehicles, infrastructure and modelling. I also spent the first half of my professional career working in planning practice and have continued to think that this is an appropriate focus of interest even whilst working within the cloisters of academe. Unfortunately, as any glance at the academic transport journals will testify, this is not a perspective which appeals to many career researchers.

So a further reason for writing this book was to try and bridge a different sort of gap – the one noted by George Bernard Shaw when he said that 'those who can, do and those who can't, teach'. People who come to learn how planning and governance 'work' through experience at the highest professional levels do not normally have the time or inclination to write books. Equally those who are paid to write (literally in the performance-monitored industry of higher education) do not have a very good idea – it seems to me – of what planning in the real world is actually like. This book is not a manual for 'doing' transport planning or even a close study of 'what is being done' in a grass-roots sense but it is a view of the subject which I hope will be relevant and interesting to those who are working, or are setting out to work, in transport planning practice.

Anyone teaching or studying the subject is faced with the dilemma that, like the universe of which we are part, it seems to be expanding at something approaching the speed of light! Certainly the volume of material available via the web has these properties. Any course – any book – which attempts to chart something approaching the totality can therefore be but the merest glimpse. Hopefully, having tested it out on successive cohorts of students, the picture which is presented here will enable people working in particular fields to 'see where they are' and – equally

important – see what others are doing and why and to make the connections between them.

The fact that this book has a single author hopefully means that it has a coherent structure and offers a reasonably comprehensive and integrated treatment of the subject. The downside is that there is a limit to what any one person – this one at least – can get their mind around and put into print if the book is ever to see the light of day. Inevitably therefore the span of topics and their treatment presented here is somewhat idiosyncratic. From an academic perspective I am also conscious that the book gives inadequate recognition of the work of those whose insights are secreted away in the many research journals. (Rectifying this would have delayed publication several more years!)

As far as students and other readers are concerned however I hope that sufficient references are given to provide 'leads' into the literature which people can pursue as they wish. The texts written by Stephen Glaister and others (2006) and by David Banister (2001 and 2005) provide valuable overviews with their own distinctive properties and are recommended as the first port of call before plunging into more specialised material. Iain Docherty and Jon Shaw's edited book *Traffic Jam* (2008) provides a timely analysis of the substance of transport policy in Britain under ten years of New Labour. Geoff Vigar's book (2002) reports on policy during a slightly earlier period but deserves special mention because it is so rare in attempting to bridge the theory–practice gap.

Space and time have prevented me from including even a taster of what the field of policy studies has to offer. However Michael Hill's text (2005) – originally trialled on me and others whilst a student at Bristol University – should be a definite follow-up for anyone interested in understanding the various dimensions of power and why things ultimately happen, or not, the way they do.

Special acknowledgement needs to be made of *Local Transport Today* – the unofficial 'house journal' of professional transport planners – and thanks offered to publisher Peter Stonham and editor Andrew Forster. It is unimaginable how we could all function without it, or how a book like this dealing with contemporary policy and practice could ever be written. In the later parts of the book there are many references to particular issue numbers (e.g. *LTT 450*) which are not listed in the bibliography. LTT offer an online database of all issues since 2004 and, if you don't already have it, you are strongly recommended to get access to it!

On a personal note I would like to thank John Glasson and Steve Ward for their initial encouragement to publish. My immediate colleagues at Oxford Brookes, Stephen Brown and Tim Jones, and successive cohorts of graduate students have given their interest and support which have made the running of the course and the 'project' of writing of this book seem worthwhile. In a different way the domestic support and forbearance of my partner Jill Loveday – confronted with someone apparently 'staring at a screen' for days and months on end – has been equally invaluable.

Ultimately, though, the book is dedicated to future students who I trust will want to engage with the complex, fascinating and vitally important subject that is transport planning. This book cannot resolve the complexity but will hopefully make it seem less bewildering – and thereby empower people who want to work in the field to go out and make their own, more effective contribution.

# Abbreviations

| | |
|---|---|
| AA | Automobile Association |
| ACORP | Association of Community Rail Partnerships |
| AONB | Area of Outstanding Natural Beauty |
| APR | Annual Progress Report (of Local Transport Plans) |
| AQMA | Air Quality Management Area |
| ASC | Approved Scheme Cost |
| AST | Appraisal Summary Table |
| ATCO | Association of Transport Coordinating Officers |
| ATM | Active Traffic Management (of motorways) |
| BAA | British Airports Authority |
| BCR | benefit/cost ratio |
| BERR | Department of Business, Enterprise and Regulatory Reform (successor to DTI since 2007) |
| BR | British Rail (1962–97) |
| BSA | British Social Attitudes |
| BSOG | Bus Service Operators Grant (formerly Fuel Duty Rebate) |
| BTC | British Transport Commission (1947–62) |
| CBA | cost benefit analysis |
| CBI | Confederation of British Industry |
| CCP | Climate Change Programme |
| CfIT | Commission for Integrated Transport |
| CIF | Community Infrastructure Fund |
| CIL | Community Infrastructure Levy |
| CP4 | Control Period 4 (Rail 2009/10–2013/14) |
| CPA | Comprehensive Performance Assessment (of local authorities) |
| CPRE | Campaign for the Protection of Rural England |
| CPZ | controlled parking zone |
| CSR | Comprehensive Spending Review |
| CTA | Community Transport Association |
| CTRL | Channel Tunnel Rail Link |
| CVS | Council for Voluntary Service |
| dB(a) | A-weighted decibels (noise measurement) |
| DCLG | Department of Communities and Local Government (since 2006) |
| DCSF | Department for Children, Schools and Families (since 2007) |
| DECC | Department of Energy and Climate Change |
| Defra | Department of the Environment, Food and Rural Affairs (from 2001) |

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|---|---|
| DETR | Department of Environment, Transport and the Regions (1997–2001) |
| DfES | Department for Education and Skills (to 2007) |
| DfT | Department for Transport (since 2002) |
| DG | Director General |
| DIUS | Department for Innovation, Universities and Skills (since 2007) |
| DIY | do-it-yourself |
| DOE | Department of the Environment (1970–97) |
| DPD | Development Plan Document (within LDFs) |
| DRT | Demand Responsive Transport |
| DTI | Department for Trade and Industry (to 2007) |
| DTLR | Department of Transport, Local Government and the Regions (2001–02) |
| DTp | Department of Transport (1977–97) |
| DVLA | Driver and Vehicle Licensing Agency |
| EIA | Environmental Impact Assessment |
| EIP | Examination in Public |
| EIS | Environmental Impact Statement |
| EU | European Union |
| EWS | English, Welsh, Scottish (privatised rail freight company) |
| GAF | Growth Area Funding |
| GDP | gross domestic product |
| GLA | Greater London Authority (since 1999) |
| GLC | Greater London Council (1965–86) |
| GLDP | Greater London Development Plan (pre-1986) |
| GOMMMS | Guidance on Methodology for Multi-Modal Studies |
| GOR | Government Offices for the Regions (later further abbreviated to GO, as in GOSE etc.) |
| HA | Highways Agency |
| HGV | heavy goods vehicle |
| HLOS | High Level Output Specification (national rail) |
| HOV | high occupancy vehicle (as in HOV lanes) |
| HQ | headquarters |
| HST | high speed train; see also IC125 |
| IC125 | Inter-city 125 (high-speed diesel train introduced in 1970s); also referred to as HST |
| ICI | Imperial Chemical Industries |
| ICT | information and communications technology |
| IHT | Institution of Highways and Transportation |
| IPC | Infrastructure Planning Commission |
| IPPR | Institute for Public Policy Research |
| IRS | Integrated Regional Strategy (proposed replacement in England for RSS/RTS and RES) |
| ITA | Integrated Transport Authority (proposed replacement of PTAs) |
| KSI | killed and seriously injured |
| LAA | Local Area Agreement |
| LDF | Local Development Framework (England) |
| LEA | Local Education Authority |
| LIP | Local Implementation Plan (variant of LTP used in London) |
| LSP | Local Strategic Partnership |

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| LT | London Transport (to 1999) |
| LTP | Local Transport Plan |
| LTT | Local Transport Today (fortnightly publication) |
| MAA | Multi-Area Agreement |
| MCC | Metropolitan County Council (1974–86) |
| MHLG | Ministry of Housing and Local Government (pre-1970) |
| MMS | multi-modal study |
| MOT | Ministry of Transport (pre-1970) |
| MOV | multi-occupied vehicles (as in MOV lanes) |
| MP | Member of Parliament |
| MSA | motorway service area |
| MtC | megatonnes of carbon |
| NAO | National Audit Office |
| NATA | New Approach to Transport Appraisal |
| NBC | National Bus Company |
| NDPB | non-departmental public body |
| NHS | National Health Service |
| NPPG | National Planning Policy Guideline (Scotland) |
| NPV | net present value |
| NRTF | National Road Traffic Forecasts |
| NTM | National Transport Model |
| NTS | National Travel Survey |
| ODPM | Office of the Deputy Prime Minister (forerunner of DCLG during Prescott's period as Secretary of State 2002–06) |
| OFT | Office of Fair Trading |
| ONS | Office of National Statistics |
| OPRAF | Office of Passenger Rail Franchising (1993–2000) |
| ORR | Office of the Rail Regulator |
| PCV | passenger carrying vehicle |
| PGS | Planning Gain Supplement (proposal replaced by CIL) |
| PHV | private hire vehicles |
| PNR | private non-residential (parking space) |
| PPG | Planning Policy Guidance |
| PPP | Public Private Partnership |
| PPS | Planning Policy Statement |
| PRT | Personal Rapid Transit |
| PSA | Public Service Agreement |
| PSBR | Public Sector Borrowing Requirement |
| PSI | Policy Studies Institute |
| PSO | Public Service Obligation Grant (for provision of rail passenger services 1974–97) |
| PTA | Passenger Transport Authority |
| PTE | Passenger Transport Executive |
| PTEG | Passenger Transport Executive Group |
| PTP | Personalised Travel Plan |
| QC | (Bus) Quality Contract |
| QP | (Bus) Quality Partnership |
| QRA | Quantified Risk Assessment |
| RAC | Royal Automobile Club |

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| RBC | Rural Bus Challenge |
| RBSG | Rural Bus Services Grant |
| RCEP | Royal Commission on Environmental Pollution |
| RDA | Regional Development Agency |
| RES | Regional Economic Strategy (England) |
| ROSCO | (Rail) Rolling Stock Company |
| RPB | Regional Planning Body (England) |
| RPG | Regional Planning Guidance (to 2004) |
| RSS | Regional Spatial Strategy (England; superceded RPG from 2004) |
| RTP | Regional Transport Partnership (Scotland) |
| RTP | Regional Transport Plan (Wales) |
| RTP | Residential Travel Plan |
| RTPI | Royal Town Planning Institute |
| RTS | Regional Transport Strategy (Scotland and England) |
| SACTRA | Standing Advisory Committee on Trunk Road Assessment |
| SCI | Statement of Community Involvement |
| SDS | Spatial Development Strategy (London) |
| SEA | Strategic Environmental Assessment |
| SNR | Sub-National Review (in England) |
| SoFA | Statement of Funds Available (national rail) |
| SoS | Secretary of State |
| SPZ | special parking zone |
| SRA | Strategic Rail Authority (1997–2005) |
| SSSI | Site of Special Scientific Interest |
| STAG | Scottish Transport Appraisal Guidance |
| STP | School Travel Plan |
| SUV | sports utility vehicle |
| TA | Transport Assessment |
| TAG | Transport Appraisal Guidance (England) |
| TCPA | Town and Country Planning Association |
| TfL | Transport for London (since 1999) |
| TIA | Traffic Impact Assessment |
| TIF | Transport Innovation Fund |
| TOC | train operating company |
| TPI | Targeted Programme of Improvements (Highways Agency) |
| TPP | Transport Policies and Programme (1974–99) |
| TPS | Transport Planning Society |
| TRL | Transport Research Laboratory |
| TRO | Traffic Regulation Order |
| TSG | Transport Supplementary Grant |
| TSGB | Transport Statistics in Great Britain (annual publication) |
| TSO | The Stationery Office (publisher of Government documents) |
| UDC | Urban Development Corporation |
| UK | United Kingdom |
| UTSG | Universities Transport Studies Group |
| VAT | value added tax |
| VED | Vehicle Excise Duty (annual road vehicle licence) |
| VfM | Value for Money |
| VOSA | Vehicle and Operators Services Agency |

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| WAG | Welsh Assembly Government |
| WCML | West Coast Main Line |
| WelTAG | Welsh Transport and Planning Appraisal Guidance |
| WPL | Workplace Parking Levy |
| WSP | Wales Spatial Plan (but NB there is also a transport consultancy with the same initials) |
| WTP | Workplace Travel Plan |

# Introduction

Transport is a vital part of everyday life. It enables people to make their regular journeys from home to work, school and shop and provides the essential means of access to health care and other welfare services. It makes possible increasingly diverse and discriminating patterns of social and leisure activity. Businesses rely on transport to bring employees and customers to their premises and to convey the goods and services essential to their functioning. For all these purposes transport does not simply cater for existing requirements – it opens up (or constrains) opportunities individually and collectively.

Ideally transport would be a trouble-free, even pleasurable, activity. In a very large number of situations it is – probably more so than transport planners recognise (since inevitably their work tends to concentrate on problem areas). Even if not entirely trouble-free the benefits from transport in general, and the convenience of the private car in particular, means that there is a seemingly insatiable demand as incomes rise.

But of course transport and travel are *not* trouble-free – increasingly so as we seek to cram more of them into finite amounts of space and time. For many individuals the problems do not rise above the level of minor inconvenience or irritation – the delay of the occasional traffic queue, the bus or train which is late, or the difficulty in finding a parking space. But for others the consequences of transport inefficiency are more profound – commuters whose daily journey is a source of stress and fatigue, parents who are afraid to let children out on their own, people who feel marooned by inadequate public transport, householders whose lives are plagued by the noise and pollution of heavy traffic, businesses whose operations are undermined by congestion and unreliability. In aggregate the economic, social and environmental costs are colossal.

Faced with such poor and deteriorating conditions the ordinary person is likely to claim that 'they' (meaning some unspecified God-like agency who is watching over such things) should be doing something about it. However because of the scale and extent of problems – and the apparent inability of governments to tackle them successfully in the past – there is no great expectation that improvements will materialise. Rather a sense of inevitability prevails. Arguably traffic and transport have taken over the role previously occupied by the weather in the national psyche – a seeming force of Nature about which we can share common complaint but actually do nothing.

But of course, as a society, we *can* and are doing things about transport. However, exactly who does what, and how these actions contribute to the conditions we experience at any particular place and time is enormously complex. How and why are conditions the way they are? Who is responsible for doing something about them?

What determines whether they take action or not? What are the options available and what are their implications?

These are the kinds of question this book sets out to answer. They are applied to inland surface transport in general and personal travel and accessibility in particular. The focus of attention is on the behaviour of *public bodies* both in relation to matters over which they have direct control and those in which they seek to influence the behaviour of others – be they transport operators, other businesses or private individuals. The nature of the technical evidence used to inform or 'justify' public decisions on transport proposals is a particularly important feature. However the book is *not* a manual detailing the techniques of forecasting, design or assessment (activities which, somewhat confusingly, are often presented as 'transport planning' in themselves).

Anyone looking to the transport planning process as a means of bringing about improvements is likely to be confronted by a series of obstacles of the 'I wouldn't start from here' variety. The context in which planning is undertaken for the future is inextricably tied to the legacy inherited from the past. Understanding the complexity of the present 'operating environment' is the pre-requisite for effective planning and is the raison d'etre for writing this book.

To help develop this understanding the book is organised in five main parts:

- Part 1 'The nature of transport' – describes the characteristics of travel and transport provision, and the perceptions people have of them, in the context of trends over the last 50 years.
- Part 2 'The evolution of transport policy and planning' – reviews the main features of public decision-making in the fields of transport and land use planning to date. This is in broadly chronological order, organised around a series of themes which characterise the nature or intention of policies being pursued during particular periods. Their collective outcome is the legacy within which travel and transport planning are undertaken today.
- Part 3 'Ends and means' – considers the main dimensions of public choice surrounding transport, viz:
    - whether to 'intervene' at all (given that transport and travel can and do exist independently of any action by the State)
    - which objectives to aim for (i.e. the 'ends' to be pursued)
    - which instruments to employ (i.e. the 'means' for achieving these ends).

  In each case the contemporary situation is examined in relation to arguments of principle and to practical possibilities which have either been adopted in the past or might be adopted in future.
- Part 4 'Strategies, plans and planning procedures' – examines the formal mechanisms which exist for translating national policies into plans and programmes at regional and local levels. The opportunities available for people to raise and challenge options and the criteria by which these are judged are critical in determining eventual outcomes. Hence the rules governing planning procedures and the approval of plans and projects are themselves a key area of policy choice.
- Part 5 'The contemporary policy agenda' – reviews recent Government initiatives which define the current official policy agenda. It also explores longer-term scenarios and reports on work under way in planning for the period after 2014. Finally a personal reflection is offered on the innovations which need

to be pursued if transport is to play its part in an overall strategy of sustainable development.

A brief introduction is included at the beginning of each part to give a fuller explanation of its contents.

# Part I

# The nature of transport

Transport is such a pervasive feature of contemporary life that it may seem unnecessary to spend much time studying the nature of it. Many people seem to think they understand it well enough already. Given half a chance in casual conversation they will not only give you their opinion on the causes of present transport problems but identify the solutions as well!

However a few minutes thought or discussion – particularly with people outside your own immediate circle – should demonstrate that what each of us thinks of as 'transport' is likely to depend on which modes of transport we use ourselves and the context in which we use them (e.g. in town or country, or for business, commuting, shopping or leisure). There are plainly different requirements for example between people and freight and between motorised and non-motorised modes.

There is also a distinction to be made between the vehicles and the infrastructure which together comprise a transport system. All transport involves the movement of some person or object (usually in a specially designed vehicle) and a purpose-built track or other adapted space over which it can be moved. The two are obviously functionally inter-dependent, but not always in balance. Can there in fact be such a thing as an 'unsafe' road which needs to be improved, or are what we call 'accidents' the result of inappropriate driver behaviour?

Another way of viewing transport is in terms of the interactions between users of a particular mode. The speed I am able to drive along a road, or the comfort I have when travelling on a train, will depend on the number of other people who decide to travel the same way at the same time. So it is not just the nature of the transport system itself which determines the conditions I experience; the way other people use it affects me too (and me them).

This applies even more to the interaction *between* modes, particularly where (as with roads) they make use of the same space. The needs of buses, vans and lorries could be met much better if there weren't also cars to cater for (both moving and parked). Pedestrians and cyclists would have a much easier time if all motorists could be banned. (Motorists might well return the compliment!)

Then we need to consider the way transport systems and their users taken together interact with everything else. Traffic flows down a street may be welcomed by frontage shopkeepers who benefit from passing trade, but cursed by other residents because of the threat they pose to safety and the local environment. Increasing traffic levels on scenic rural roads may represent improved access to countryside recreation for some but reduced enjoyment for others.

Understanding what transport represents at a particular place and time for all the different users and non-users is thus much more complex than might first appear. But for planning purposes making sense of a situation in 'snapshot' mode alone is not enough. Planning is essentially concerned with change – anticipating it and seeking to influence it. So recognising where current conditions 'sit' in a trajectory of change – and identifying the factors which determine this trajectory – are critical.

Transport improvements – particularly individuals' acquisition of a private car – can themselves be an important impetus to people changing their travel behaviour. So the link between travel and transport provision is not merely in that one direction. The two interact.

The social and economic forces promoting change or acting as a brake on it are deep-seated and relatively slow-moving. To understand the source of present conditions and to identify the main drivers and constraints on change we have to review trends over a long period. In this first part of the book we set out to portray the current nature of transport and travel in Great Britain in the context of changes which have taken place over the last half century.

Although fifty years seems like a convenient round number the mid-1950s is not an arbitrary starting date. It marks the time when the country began to resume normality after the Second World War. 1953 was the year when the use of public transport reached its peak. Travel by car exceeded travel by public transport for the first time in 1959. Freight haulage by road overtook the volume carried by rail in 1955.

The 1950s thus mark the beginning of the modern transport era characterised by the dominance of the motor vehicle. It was in the 1950s that the ownership of private cars began to change quite rapidly from a luxury affordable only by the well-off to the commonplace household item it is today. The transformation to a fully motorised society represents the seismic shift whose consequences we are still grappling with. It is a transformation which is still far from complete – we are little more than halfway to a notional scenario in which every adult has their own private car.

In reviewing trends we look first at the relationship between transport and economic development (Chapter 1) and then at changes in population, land use and travel behaviour which are to a large extent linked to the underlying economic changes (Chapter 2). Their combined effect will then be presented in terms of the trends in traffic growth and its various impacts (Chapter 3). Increasingly it is public attitudes towards these impacts as much as the demands for transport itself which are conditioning transport policy and hence a commentary on attitudinal trends is included as well.

Unless stated otherwise all the figures quoted come from the annual compendium of Transport Statistics for Great Britain (TSGB) – with most information presented for England, Scotland and Wales together or the associated commentary on Transport Trends prepared by the Government Statistical Service. Fuller information on personal travel is derived from the National Travel Survey (NTS), itself now reported on annually. These can be accessed via the DfT website (www.dft.gov.uk/statistics) whilst the full extent of official statistics can be accessed at www.statistics.gov.uk. For non-transport data, use is made of the compendium published as Social Trends.

Many of the indicators which we now regard as important for transport planning were not surveyed in the past. In particular, information on travel (i.e. people) as distinct from transport (vehicles) only began to be collected in 1965 and at intervals thereafter. The recording of certain types of impact and public attitudes to them is

more recent still. In many cases it is therefore only possible to present trends for recent periods and between specific survey dates.

Because we are concerned mainly with 'national' policy the characteristics of transport and travel are generally presented as aggregate or average figures in order to give the overall picture. (Sometimes, depending on the statistical source, figures for Wales and/or Scotland have to be excluded.) Where characteristics vary within the national population we try and show their range as well.

In particular the *spatial* dimension of variation is highlighted. This is because our personal understanding of transport is likely to be strongly conditioned by the nature of the areas we happen to know well. In fact there are wide variations both within and between regions and these are becoming more pronounced over time. Whatever you think transport is like in Great Britain the reality is almost certainly different!

# 1 Transport and economic development

## 1.1 Introduction

It is currently fashionable, in certain social circles at least, to discuss people's travel behaviour as a matter of lifestyle choice, in much the same way as whether they buy organic food. Of course individuals can make quite radical changes to enhance their own well-being and/or to support some altruistic principle. (We will be exploring later – in Chapter 16 – the scope which exists for such changes in behaviour.) But there is a danger of extrapolating from this and imagining that transport policy in the round can be presented as *primarily* a matter of personal choice.

For a start, not all transport is personal in nature. Just under a fifth of all road vehicle miles is represented by freight movements which deliver the goods and support the services which are central to our lives. Of the remaining (mostly car) mileage about 40% is made up of personal travel for commuting or business purposes, and a further 30% is for education (including escort), shopping or personal business reasons. Although there may be some scope for people to alter the *means* of travel involved in these journeys, their overall volume and pattern is essentially determined by the spatial organisation of economic activity in their home area. Leisure journeys which utilise sports or entertainment facilities are constrained similarly. Many social journeys involve the maintenance of links with friends and family who have become physically separated as a result of moving to take up opportunities offered by different job, housing or education markets.

To begin with we therefore review the fundamental relationship between transport and economic development and how this has evolved to create the patterns of travel on which we now depend to sustain our present living standards and social networks (1.2). We then look at trends in transport supply and transport costs (1.3 and 1.4) and at changes surrounding car ownership and licence holding which are central to the private car becoming the dominant travel mode (1.5).

## 1.2 Transport and the economy

Before the era of mechanised transport, trade and travel was limited to what could be accomplished on foot or horseback or by wagon, barge or sail. The settlement pattern of villages, market and coastal towns across most of the country reflects this. Even when mechanised transport was developed, its use for regular personal travel was inhibited by cost. The density and form of present-day towns derives from the fact that walking was and still is used for a large proportion of everyday journeys.

Transport investment, including exploitation of the opportunities created by mechanical invention, depended on the surplus generated from economic development. Economic development itself is facilitated by transport improvements – both the capability of vehicles and the standards of the infrastructure on which they operate. Together these reduce the time and cost involved in overcoming distance and thus enhance the opportunities for trade, specialisation of production and economies of scale. A classic example of this is provided by the brewing industry which has evolved from small, independent local firms serving their tied houses by horse and drey to national and even international conglomerates with transport forming a massive logistical component in their operation.

The accompanying growth in personal incomes has facilitated the purchase of passenger transport, initially in its cheaper public or 'mass' form – trams, trains and buses – but increasingly via the acquisition of private, individualised modes – bicycles, motor-cycles and cars. Mechanised transport not merely reduces the time and effort involved in accessing facilities used previously, it also opens up a wider range of opportunities which can be utilised given the ability to make longer journeys.

Because the volume of transport today is on such an enormous scale it is tempting to imagine that travel itself is the product of the mechanised era. Yet centuries before the invention of either the steam, internal combustion or jet engines, merchants, diplomats, scholars and artists moved across the known world exchanging ideas and goods, imposing religious and secular orders in shifting networks that represent the very core of our civilisation. Meanwhile the mass of ordinary people lived, worked and died near where they were born. Even today, in a society seemingly preoccupied with mobility, many people still live within a few miles of their birthplace. But it is the transformation in the daily lives of these ordinary people which has produced the enormous growth in travel and traffic that is the object of attention of today's transport planners and the focus of this book.

Successive periods of economic development, often coupled with technological advances in transport and communication, have altered the organisation and location of industry. In itself this has generated enormous increases in freight movement and business travel which can be regarded as the 'baseload' of contemporary transport demand. But it has also altered the economic poles around which ordinary people sustain their lives. Nationally there have been migrations over successive generations to the more prosperous areas – first from villages to the towns and cities of the industrial revolution, then to London and other cities with more modern industries, more recently to southern England as a whole which is dominated by the growth of 'London' as a metropolis of world-wide significance. Locally the focus of urban activity has also shifted – firstly from religious centres and agricultural markets to concentrations of heavy industry and mass manufacture; more recently to today's regional office complexes, shopping centres, universities and mega-hospitals.

But there have also been fundamental changes in the living habits of people themselves associated with economic advancement in general and transport improvement in particular. In the 18th and 19th centuries only a tiny minority of aristocrats or successful entrepreneurs was able to enjoy the benefits of both town and country by having residences in both and moving seasonally between them. Subsequently the mechanisation of transport – train, tram, bus, then car – facilitated suburbanisation, giving the mass of the population the benefits of more spacious housing and better living environments whilst retaining a degree of everyday access to both town and country, albeit at the price of ever greater dependence on transport.

Today, in relation to London particularly, 'suburbanisation' amongst wealthier groups takes the form of weekly commuting to second homes in the country or by the sea, sometimes outside Britain altogether.

Transport improvements also provided operators with the opportunity to market leisure experiences to appeal to the growing time and money available to city dwellers. These included the seaside resorts promoted by the Victorian railway companies, the outings into the countryside by charabanc (motor coach) during the inter-war period, and the overseas package holidays by charter air firms later in the 20th century. As the private car came to dominate domestic travel so the marketing initiative shifted to today's sports, entertainment and heritage sites, even humble garden centres, to woo the mobile family into literally 'spending' their leisure time.

The significance of economic growth for personal travel is greater than the performance of the national economy alone would suggest because transport has the characteristics of a 'superior good', i.e. people consume proportionally more of it as they become more affluent. In the thirty years to 1998 the share of average UK household expenditure on transport increased from 13% to 17%, mostly because of the spread of two-car ownership. In absolute terms, expressed in 1998/99 prices, this represented an increase from £32 to £55 a week (Aldous 2000).

Service industries have responded to this greater personal mobility by restructuring their operations into fewer outlets offering a greater range of goods or services at lower cost. This is most evident in the restructuring of retailing (from small 'high street' shops into supermarkets, DIY warehouses and the like) but also in a range of public services such as doctors' surgeries, general hospitals, schools, libraries and post offices. A consequence of this is an increase in the average length of journeys, with the additional monetary costs accounting for part of the increased household expenditure on transport.

In effect some of the higher costs of production or distribution previously associated with services organised in smaller, more dispersed units have been transferred to the transport costs of the consumer. Whilst this is normally seen as economically beneficial in aggregate it does prompt questions about ancillary impacts (e.g. on safety, the environment and fuel consumption) which the additional transport has created. It also masks large shifts in the relative accessibility, and hence welfare, of different groups within the population depending on where they happen to live and whether or not they have use of a car.

Viewed in terms of both economic organisation and personal lifestyles the scope for growth in travel through further exploitation of the opportunities presented by greater mobility seems almost infinite. Certainly throughout most of the second half of the 20th century there was an almost direct relationship between growth in the national economy and the increase in freight movement and personal travel (Figure 1.1).

It is important to emphasise that the growth in transport derives not so much from an increase in the volume of goods being carried or the number of journeys being made but in the average *length* of haul or journey. This reflects the spatial restructuring of both business operations and personal lives which greater mobility makes possible. Over the last thirty years the average length of personal journeys has increased by a third, and the average freight haul by more than two-fifths (Table 1.1).

However this growth in length does not derive from uniform increases in the average distance of all journeys. For person journeys there has been a marked decrease in short journeys (under 1 mile) linked with a decline in walking as a mode. Meanwhile there has been a 'surge' in the proportion of journeys in the 5–10 and 10–25 mile

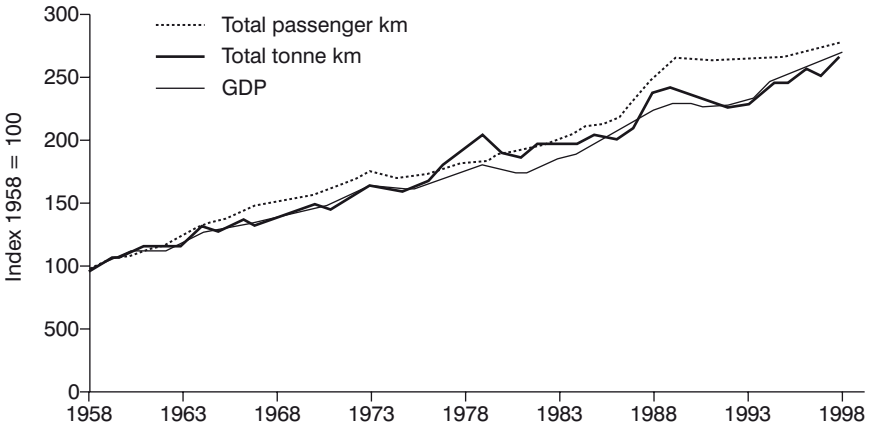


**Figure 1.1** Growth in passenger and freight transport compared with GDP 1958–98 (source: Chart 3a Transport 2010 DETR 2000f)

**Table 1.1** Average length of passenger journeys and freight haul 1976 and 2006

| | 1976 | 2006 | % change |
|---|---|---|---|
| Journeys: Number per person per year | 935 | 1,037 | +11% |
| Average journey length (miles) | 5.2 | 6.9 | +33% |
| Freight: Goods lifted (m. tonnes) | 1,857 | 2,203 | +19% |
| Average length of haul (kms) | 82.4 | 118.5 | +44% |

distance categories (Potter 1996). Significantly these are distances which are typical of journeys to, around or between towns rather than within them. The 10–25 mile band is also the one which has the highest proportion by car (85%).

This link between transport and economic development can be viewed as operating negatively as well as positively. Capacity limits on transport networks and worsening congestion are commonly held to inhibit economic growth and are thus used as an argument for greater investment to rectify an 'infrastructure deficit'. This raises the question of whether the observed relationship between growth in the economy and in transport is a necessary one or whether it is possible to 'decouple' them. (The issue is critical to the possibility of sustainable development over the longer term which we discuss in Part 5.)

At this point we may simply note that there is some evidence of this decoupling in recent years. Since the early 1990s the overall amounts of passenger and goods traffic have risen more slowly than the national economy even though, by historical standards, this period has been characterised by an exceptionally long period of continuous growth. In the decade to 1996 GDP increased by 21% whilst goods movement and passenger travel, following their traditional close association, increased by 21% and 19% respectively. In the decade to 2006 however GDP increased by 32% but the equivalent increases in transport were only 9% and 11%. (For further consideration of this important change see Headicar 2008.)

## 1.3 Transport supply

The quality of transport supply acts to facilitate or constrain the growth in travel. By quality we mean not merely the speed and safety offered by individual sections of route or the services operating over them but their configuration as a network relative to the patterns of demand generated by land use activity in an area. By reducing travel time the same connections can be made at less cost or better connections made for the same cost.

The patterning of accessibility created by transport networks influences travel choices and hence the resulting patterns of demand. It also has an effect on decisions by firms and households over where to locate and hence, over time, contributes to the evolution of settlements and, more locally, to patterns of land use and built form.

The development of the nation's highway network to accommodate the motor vehicle differs from the earlier development of the railway network in that ownership of the infrastructure has been separate from ownership of the vehicles running on it. In addition the infrastructure remains predominantly publicly owned whilst the vehicles are mostly private. The extent to which firms and households can gain advantage from the vehicles they have acquired has thus depended on public decisions about the standard of the road network.

The policy issues surrounding this are considered in Part 2. Suffice it to say that the 1950s represent a landmark in the evolution of transport policy in that official approval was given to the radical restructuring of the national road network in order to realise the capabilities of the motor vehicle. In a period of just twenty years (from 1960 to 1980) a motorway network of almost 1,600 miles was built which had symbolic as well as functional significance in marking a transition to a new era. In the 25 years since only 600 miles has been added to it. Instead, during this time, the length of dual carriageway 'A' roads has increased by nearly 2,000 miles (to 4,900 miles).

The current form of Britain's national road network is shown in Figure 1.2. From this it can be seen that motorways and dual carriageways are concentrated in the more central and southern parts of England. This reflects the pattern of urbanisation and hence the density of traffic movements. However it is important to note that these types of road as well as providing greater physical capacity also make possible higher traffic speeds. The *relative* accessibility of parts of the country not served by these types of road therefore tends to worsen, with potentially deleterious economic consequences. This explains the long-standing campaigns for dual carriageway improvements to serve remoter, lightly populated areas – for example the A11 to Norwich, the A30 through Cornwall or the A1 north of Newcastle.

Even within particular cities and sub-regions the configuration of the main road network and the standard of its component sections often leaves much to be desired even after a century of purposeful investment. This is partly because of the inevitable 'lumpiness' of highway schemes and the fact that the network remains in a state of continuing improvement. (For example if bypasses or dual carriageway sections have been introduced along some parts of a route then the shortcomings of the unimproved sections tend to become even more conspicuous.) In some cases highway authorities' practice of 'leaving the most difficult bit until last' may result in a desired standard of improvement never being achieved along the length of a route. This could – and arguably should – have happened with the M3 at Twyford Down near Winchester and currently threatens to occur at the unimproved section of the A303 trunk road at Stonehenge.

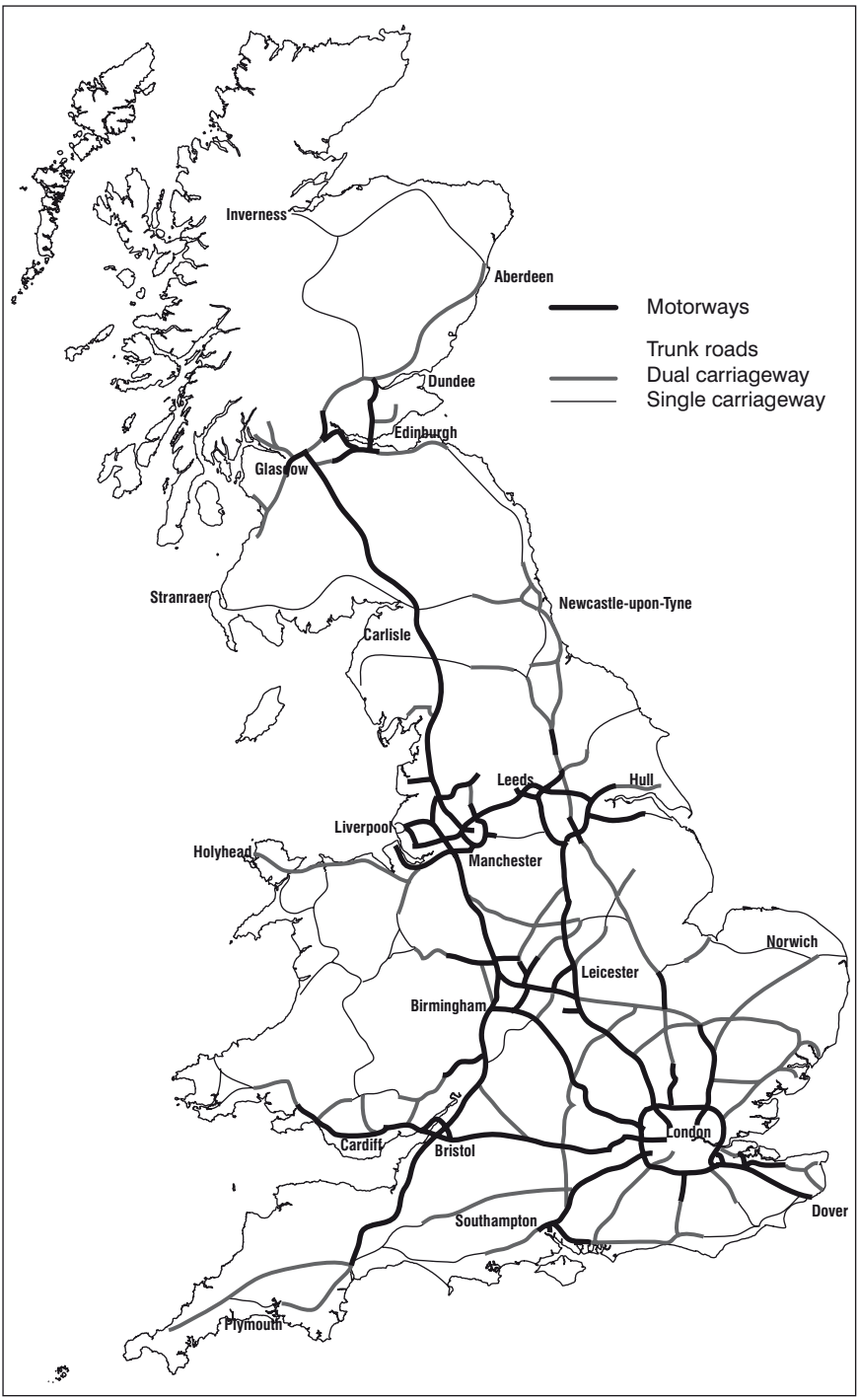


**Figure 1.2** The national road network (For comparability with England only the main trunk roads are shown in Scotland and Wales. For a full map of these countries see the Transport Scotland and Transport Wales web-sites.)

The railway network also has its gaps and discontinuities though these have arisen for different reasons. The present national network comprises a series of lines originally built by separate railway companies, sometimes in competition with one another. A process of company amalgamation and then nationalisation allowed for more consistent development of trunk routes but the rationalisation which was initiated in the 1960s was never completed as intended. As a result the present 'network' contains lines and stations which have survived against all the odds, rather like prehistoric life-forms from another age. Meanwhile others which would have had a much better claim to be operating today have disappeared.

Even in the heyday of railways topographical features meant that stations were often located at some distance from the settlements they served. In rural areas the combination of line and station closures reduced accessibility to stations still further whilst in urban areas (except in London and a few other cities where suburban services were developed) the outward spread of development reduced accessibility to stations originally built to serve their Victorian core.

In the last quarter of the 20th century there were some reversals of these trends. British Rail developed a number of inter-city 'Parkway' Stations on the edge of cities designed to attract motorists living in outer areas – Bristol Parkway being probably the most successful. In the provincial conurbations Passenger Transport Authorities opened or re-opened more than a hundred stations serving housing areas and small towns, boosting patronage on the local services for which they were responsible. In addition there are now 34 stations on the Docklands Light Railway in this redeveloped area of East London and over 220 stations or stops on new metro or tram systems in provincial cities. Nevertheless in built-up metropolitan areas and other large urban areas today 80% of the population live more than 1 km – a convenient walking distance – from a railway station (Table 1.2).

The proportion of the rail network which has been electrified has increased steadily during the last 80 years and now represents about a third of the total. However much

**Table 1.2** Proportion of households within specified walking times of nearest railway station and bus stop by area type (source: National Travel Survey)

| *Area type* | *Time to railway station (1996/98)* | | | *Time to bus stop* (2006)* | | |
|---|---|---|---|---|---|---|
| | *< 7 mins* | *7–13 mins* | *14+ mins* | *< 7 mins* | *7–13 mins* | *14+ mins* |
| London | 26% | 34% | 40% | 88% | 10% | 1% |
| Metropolitan built-up areas | 7% | 10% | 82% | 91% | 7% | 1% |
| Large urban areas (over 250k pop'n) | 7% | 12% | 81% | 90% | 8% | 1% |
| Medium urban areas (25–250k) | 6% | 12% | 82% | 90% | 9% | 2% |
| Small/medium urban (10–25k) | 4% | 8% | 87% | 85% | 12% | 3% |
| Small urban (3–10k) | | | | 82% | 13% | 3% |
| Rural (less than 3k) | 3% | 4% | 93% | 72% | 12% | 15% |
| All | 8% | 13% | 80% | 86% | 10% | 4% |

* with daytime service at least once an hour

of this is concentrated in South-East England on London commuter routes (Figure 1.3). Key national investments have been the electrification of the West Coast Main Line (from London Euston to Birmingham, Manchester and Glasgow) in the 1960s and 70s and the East Coast Main Line (London Kings Cross to Leeds, Newcastle and Edinburgh) in the 1980s.

As important as the spread of electrification has been the improvements in track and signalling on principal routes. These permit the running of trains at over 100 mph, and particularly enable utilisation of the high speed (125 mph) diesel train introduced in the 1970s. Recent major enhancements to the national rail network have been the upgrade of the West Coast Main Line (to permit use of tilting 'Pendolino' trains at up to 140 mph) and the completion of the first High Speed Line from the Channel Tunnel to London St Pancras as part of the Eurostar network operating at 186 mph.

As with the national road network so the national rail passenger network results in accessibility disadvantages for the more peripheral parts of Britain. In fact the route network alone disguises these differences since on many of the remoter lines only a relatively slow and limited service is operated. Even in more urbanised regions, because of the way investment and through services have been concentrated on lines connecting major cities, the relative position of cities and large towns located off these routes, such as Hull, Bradford and Blackpool, has deteriorated.

Except for the link to the Channel Tunnel the physical extent of the network has remained virtually the same for the last 30 years but the intensity of services operated over it (or more accurately on its main urban and inter-urban elements) has altered quite dramatically. From a low point of around 185m loaded train miles a year in 1982 operations increased under British Rail to 225m in 1990/91. This resulted from a more commercial policy in the use of resources and exploitation of the opportunities presented by a new generation of diesel-multiple units. After rail privatisation and in the context of another period of economic growth operations have increased again to a current level of 288m in 2006/7.

Figures for the extent of bus and coach networks are not available, partly because the networks themselves are subject to frequent change. Some indication of trends in service levels can be gauged nevertheless from the vehicle mileage operated (Figure 1.4). From the post-war peak this fell by a fifth to 1977. The use of public subsidy halted this trend until the deregulation of services outside London in the mid-1980s, whereupon a major increase in supply ensued in the larger urban areas. This was partly due to the greater use of minibuses and other smaller single-deck vehicles which made it practicable to operate higher density services (in terms of both network and frequency) more suited to a competitive environment.

The initial increases in bus mileage nevertheless give a misleading impression of the extent of improvement in service levels. This is because, in pursuit of commercial objectives, a greater proportion of total mileage was operated on the most heavily used routes, often in direct competition. In the metropolitan areas particularly the lack of co-ordination in services and ticketing, coupled with uncertainty over changes in bus routes, meant that for many passengers no overall improvement was perceived. Since the mid-1990s however the converse applies – because of company amalgamations and less 'on the road' competition there has been greater opportunity for operators to deliver a more effective service for a given mileage, so the decline in service level is probably not as great as the absolute reduction in mileage would imply. Overall mileage in the metropolitan areas has now returned to much the same level as operated prior

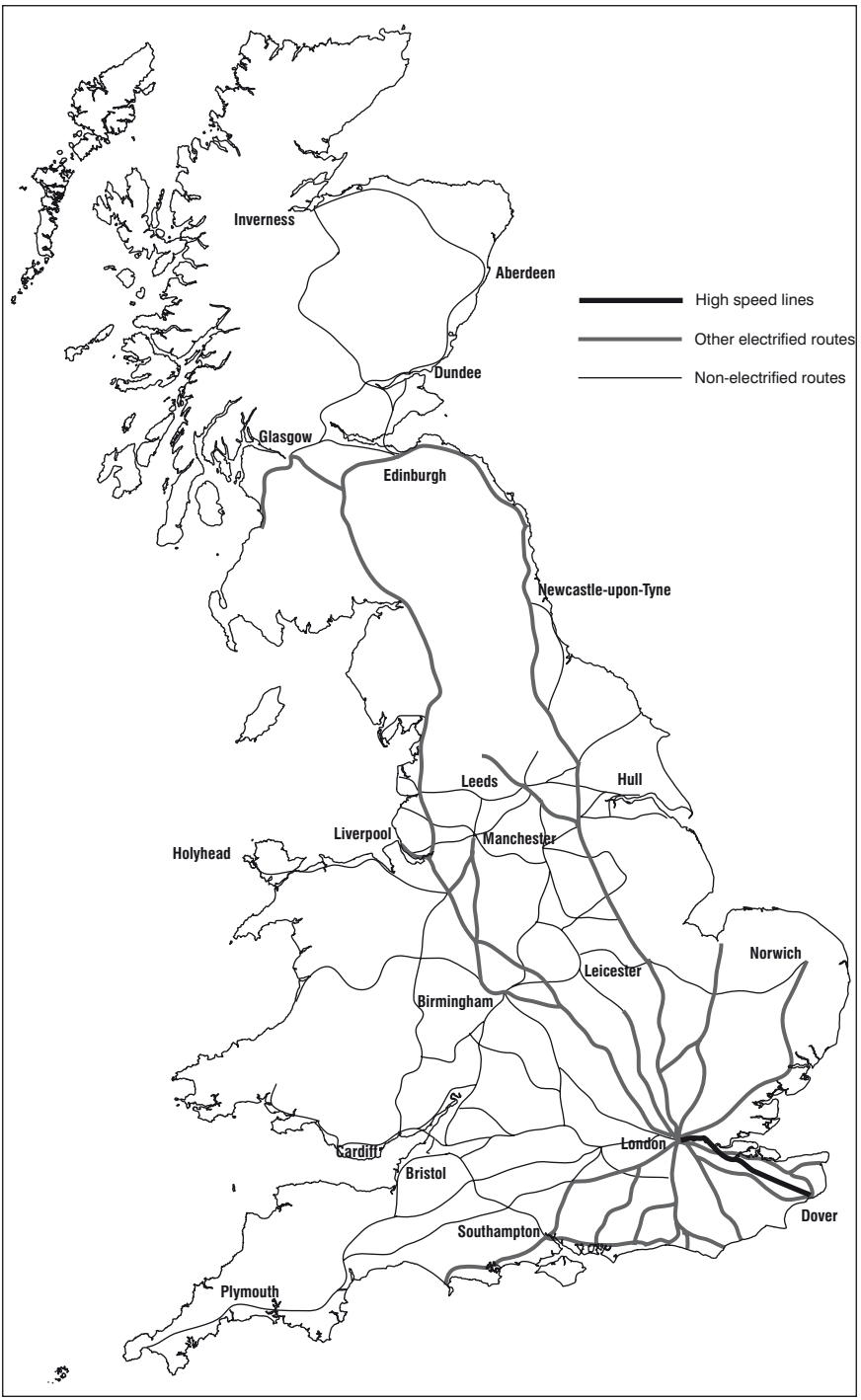


**Figure 1.3** The national rail passenger network (suburban and minor rural lines not shown)

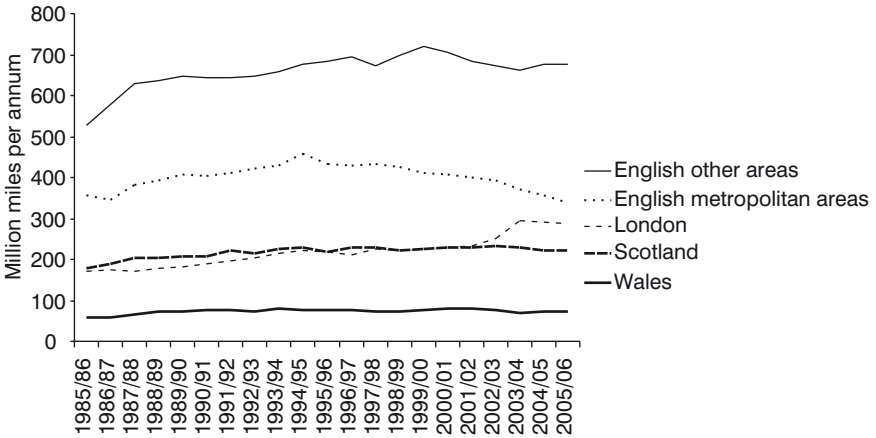


**Figure 1.4** Bus mileage operated by area 1985/86–2006/07

to deregulation whilst in the English shire counties, Scotland and Wales it remains some 25% higher. As will be explained later (13.5), events in London have followed a completely different path and, remarkably, bus mileage here is some 70% greater than it was 20 years ago.

Figures from the National Travel Survey provide insight into changes in bus service levels in different types of area (see Table 1.2 previously). Between 1975/76 and 1996/98 the proportion of households living within 7 minutes (500 metres) of a bus stop with a daytime service at least once an hour increased by four percentage points (to 87%). Since then the situation in most urban areas is unchanged but a grant regime established by the Government has contributed to a stabilisation (and some improvement) of conditions in smaller towns and rural areas. Only in villages (settlements less than 3,000 population) do a significant minority of households not have access to an hourly bus service – 2 in 7 households live more than 500 metres from such a service and 1 in 7 more than 1 kilometre.

## 1.4 Transport costs

The cost of transport is a product of three main factors – the time and distance involved in making a journey and the unit cost of transport itself (per passenger or tonne kilometre). The time and distance elements are influenced by the innate standards of the transport systems available (link speeds and network connectivity) but also by their relationship to the pattern of demand generated by the distribution of land use.

For commercial transport purposes travel time converts into a component of monetary cost because of the need to pay a driver (and possibly a marginal additional requirement in fleet size) whilst for business travel it typically represents a cost in terms of lost working time.

For private travel the amount of non-working time taken up in travel will have a deterrent effect similar to monetary cost although in our everyday lives we do not calculate what this is. However we recognise that there are situations where, even if we can afford to make a journey the time involved makes it not

worthwhile (in effect that the overall cost of the journey is greater than the value of the activity forgone).

Strangely, given the enormous amount of public expenditure on transport over the last 50 years, there is no official process which has monitored what overall improvement has been derived in savings in travel time and/or distance. (Individual schemes may demonstrate improvement to gain initial approval, but their value over the longer term is influenced by action or inaction on other parts of the network and how the pattern of travel demand evolves.)

On the nation's road network there have clearly been very large time savings along the main inter-urban corridors where motorways and other dual carriageways have been built. Many 'A' roads forming part of the primary route network connecting principal towns (those marked by green-backed road signs) have also had their alignments improved permitting higher speeds and greater opportunities for overtaking. Journeys not directly served by these routes have not experienced any *absolute* disadvantage (because the traditional routes remain and may even have benefited from some displacement of traffic). But equally it is not clear, taking into account the additional expense involved in making 'detours' to use the improved routes, what proportion of these other journeys have benefited and by how much. Even without the effect of consequential changes in land use, areas of the country away from the main corridors will have experienced *relative* disadvantage in seeing little improvement in travel times from highway investment for journeys, say, of less than 25 miles.

For rail passenger journeys a similar pattern of change has taken place through improvements in track, signalling and motive power but with the added dimension of higher frequencies (as well as higher speeds) on the trunk routes. Hence journeys which are no longer catered for by through services incur the penalty of one or more interchanges as well as possibly a more indirect route. These disbenefits may or may not be offset by the gains of greater speed on the trunk route – the length of trip is likely to be a determining factor. However the change in conditions across the country is more polarised than with road travel because whilst trunk services have been improved greatly many smaller towns have lost their rail services altogether. For people without a car living in such places (or in rural areas more generally) merely gaining access to the network can be problematic as there is no coherent system of connecting bus or coach services. At the other extreme however the development of high speed trains has given special advantage to cities which can command limited stop services. In travelling by car from London to Newcastle for example there is no gain in average speed to be had from driving all the way along the A1 than to any of the towns in between. That is not the case with rail travel.

As well as noting the changes in travel times on the national road and rail networks separately we can also observe changes in their *relative* position. Historically railways were built to serve the centres of towns. Motorways and trunk roads by contrast have mostly only been built to provide connections at or near the edge of towns as they evolved some 120 or more years later. The standard of main roads connecting the centres of towns to their periphery are very variable and are often affected by congestion. Hence in considering the relative speed of inter-urban travel measured 'door to door' it is critical whether the origin and destination of trips is close to the centres of towns or to their outer edge. (The same consideration applies in comparing rail and air services between the principal cities over about 150 miles.) Over the last half century the significance of this has grown enormously with the decentralisation of much business and retail activity (attracted by the vastly improved opportunities for

road and air travel) as well as by the continued preference of higher income groups for homes in outer suburban and dormitory rural areas.

For local travel to or within urban areas there have been improvements in rail networks and services serving the main centres in the provincial conurbations. The Tyne and Wear Metro was the most significant example of its kind when it opened in the early 1980s but has nevertheless struggled since to retain patronage in the face of radical physical and economic restructuring within the conurbation (Gillespie et al. 1998). This includes the effects of new motorways threaded between the former separate towns which have transformed the opportunities for car travel between suburban locations. Similar transformations on an even larger scale have occurred in the other conurbations. In a league of its own is the enormous 118 mile long 'beltway' created by the M25 which encircles the continuously built-up area of London and now functions as a sort of 'inner ring road' to the expanding megalopolis across much of southern England.

In urban areas as a whole the traditional mainstay of public transport – the bus – has been unable to offer anything in the way of improvements to rival the private car. Except where the availability or cost of non-residential parking has acted as an impediment the attributes of car travel are superior on almost every count. (The typical urban bus journey involves time and monetary costs three times greater than those borne by motorists.)

Across urban regions the increasingly dispersed pattern of trip origins and destinations has meant that the logical response of road-based public transport to lengthening journeys – the development of coach services – has generally not transpired. Services to airports – because of their scale and concentration of trips – are an important exception.

Bus services have not usually been able to take advantage of major road developments. In fact the design of these and of new residential areas have often had an adverse effect on bus services by forcing them to adopt slow and/or tortuous routes in order to continue to access developed areas. The introduction of one-person operation on buses in the 1970s and 80s (i.e. doing away with conductors) lengthened journey times because of the delay involved in cash transactions with the driver. The effects of this have since been lessened by the development of pre-payment systems, most impressively in London.

Most serious of all, urban bus services have suffered from worsening traffic congestion. This has not only lengthened journey times still further but caused service irregularity and bunching, sometimes to a catastrophic degree. Significantly there is no national monitoring of bus punctuality (only 'reliability' which refers to the percentage of scheduled mileage actually operated). Congestion presents bus operators with the unwelcome choice of accepting service deterioration or of assigning additional buses into operating cycles in order to maintain reliability – adding to their costs simply to forestall patronage losses.

The introduction of congestion charging (as in Central London) or comprehensive bus priority measures elsewhere is helping to reverse this spiral. The latter have the unusual benefit of giving the bus a visible advantage over the car (i.e. a higher speed along the route concerned), but can only be introduced where the highway layout permits. However the very notion of giving buses 'priority' over cars is politically controversial and this has acted to limit the introduction of such schemes and even provoke their abandonment in some places.

In recent years attention has come to be focused more on congestion and other sources of unreliability in transport operations since the *predictability* of travel times has been found to influence people's perception of journey opportunities as well as the nominal times and costs involved. The monitoring of conditions has begun, though typically for only a few years.

Since 1999 the Department of Transport has been collecting traffic speed data on major roads in the 18 largest urban areas in England. These show that average traffic speeds have fallen by an average of 4% at peak times and 8% at off-peak times over the last seven years. On motorways and trunk roads traffic conditions are being monitored on sections of the network with the slowest journeys (11.6); over an initial two years average journey times have increased by 2.9%.

The reliability of rail passenger services has been monitored for ten years. The running of all scheduled services is recorded and measured against the timetable. They are classed as being 'on time' if they arrive at their final destination within 10 minutes of the scheduled time in the case of long distance services and 5 minutes for other services. Initially the 'on time' performance of all operators averaged just under 90% but plummeted by more than 10 points following the Hatfield rail crash in October 2000 (8.6). Overall performance has since improved and is now better than pre-Hatfield levels (Figure 1.5). These figures deserve to be seen in the context of the increasingly intensive operations described in the previous section – a situation which rapidly compounds the effect of any disruption in service.

As far as the unit costs of transport are concerned these are strongly influenced by the loadings which can be achieved. For example over the last 50 years road freight transport has benefited not only from the time savings arising from investment in the national road network but also from the increased loads it has been practicable (and legal) to carry. Bus operators by contrast have had to face the conundrum of a long-term decline in passenger loadings. Before deregulation their response was to reduce mileage operated, although at a slower rate than the decline in passengers, resulting in a drop in average loadings. Since deregulation bus mileage has been increased considerably and an overall stabilisation of patronage achieved (due also to changes in concessionary fares policies) but at the price of a further drop in average loading. In 1955 buses carried an average of 22 people per mile. By 1980 this was barely 15 and is currently less than 10.

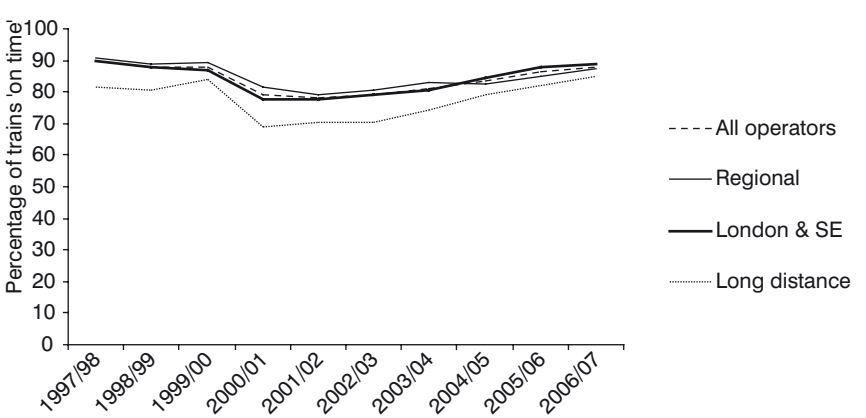


**Figure 1.5** Punctuality and reliability of national rail services 1997/98–2006/07

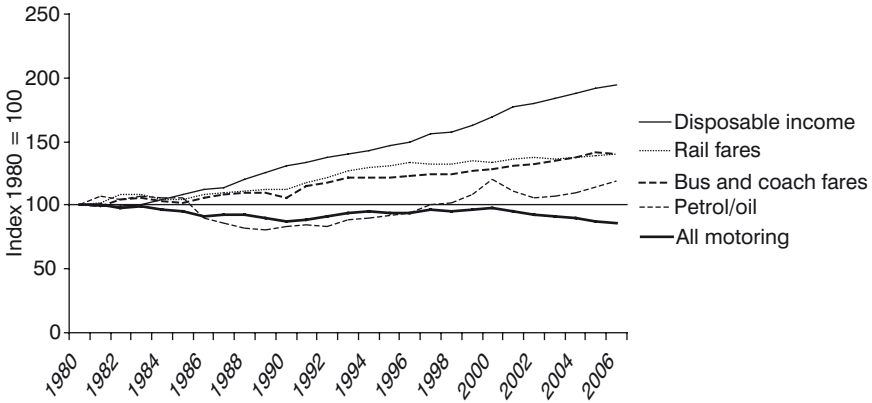


**Figure 1.6** Changes in real income and transport costs by mode 1980–2006

As we have seen, train mileage has also increased over the last 25 years but in the context of rising demand. Although average loadings per train have risen this is less significant than the fact that the infrastructure on which the trains operate now carries two-thirds more travel. Unlike buses the efficient utilisation of track as well as vehicles forms a critical part of the economics of the rail industry.

The policies followed by train and bus operators (the former subject to Government policy) have involved a steady increase in real fare levels (Figure 1.6). Although these increases generate almost ritual outrage in the media they are in fact well below the rate at which disposable incomes have increased, meaning that, in aggregate, travel by either mode is becoming more affordable. However in terms of overall transport repercussions it is much more significant that the overall cost of car ownership and use has not increased at all over the last 25 years. The progressive decline in cost relative to disposable incomes underlies the protracted growth in private car travel that we have already noted.

In terms of 'modal choice', costs are normally on the basis 'out-of pocket' expenses only, which for the private car only involves fuel (plus parking charges on some journeys). Fuel costs have been subject to more fluctuation because of changes in the market price of petrol or diesel and because of the effects of changes in Government policy towards fuel duty (15.2). However the overall rate of increase has remained below that of rail and bus fares so that in relative terms a shift *away* from public transport has been encouraged.

Finally we should note that not all motorists experience costs in the manner depicted above. Those with company cars will have the fixed costs paid for cars used for private purposes and in some cases fuel costs too. About 5% of all household cars are company owned. This minority is significant because, as we will see, they account for a disproportionate share of overall car mileage.

## 1.5 Car ownership, licence-holding and car availability

As far as household car ownership is concerned the second half of the 20th century marks a period of profound change. In the early 1950s only 1 in 7 households had regular use of one or more cars. Today only 1 in 4 do *not.* (Note that strictly the term

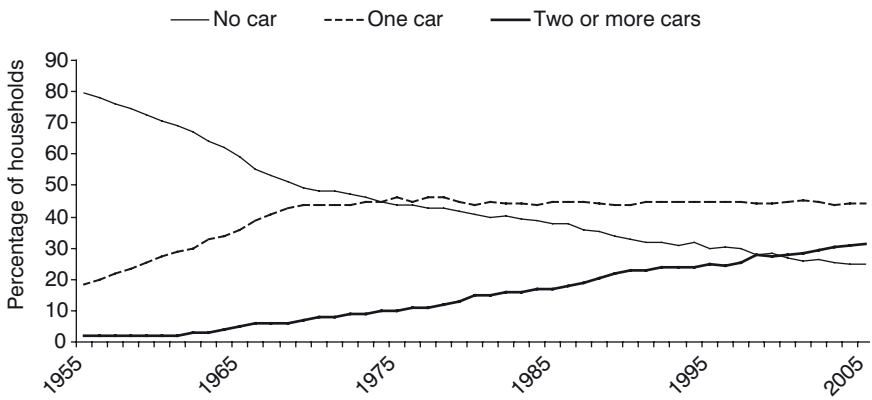


**Figure 1.7** Households with regular use of cars

'regular use' rather than 'ownership' is used in order to overcome the complications arising from company owned vehicles being used as private cars.)

Until 1970 the growth in car ownership was almost entirely reflected in the increase in households with a single car (see Figure 1.7). This was linked, both in cause and effect, with the small proportion of women who were able to drive. Since then the most prominent feature has been the growth in households with two or more cars. However their numbers have been almost exactly matched by a continued shift from the 0 to 1 car owning category. As a result the proportion of households owning one car has remained almost constant nationally for the last thirty-five years at around 45%.

Over the last decade the proportion of 1-car households has increased most in the former industrial areas of North West and North-East England and Scotland – places where non-car-ownership was previously highest. Elsewhere 1-car households are more likely to comprise lone adults (in a similar way that 2- and 3-car households represent multi-adult households). In other words, amongst households with working adults especially, car ownership is becoming more an *individual* phenomenon with the numbers of cars owned by a household a product of the number of adults within it.

Whilst income has been a major factor in the growth of car ownership amongst the population as a whole it is also a factor which continues to differentiate groups within it. At present amongst households in the lowest quintile (fifth) of incomes 34% have use of one car and 7% two or more (2002/03). Amongst the highest quintile the equivalent figures are 40% and 52%. There are of course many more single-adult households (especially elderly people and lone parents) in the lowest quintile and vice versa.

Household car ownership varies between different types of area, but not solely as a product of composition and/or income. The proportion of households with 2 or more cars is twice as large in rural areas as it is in London and the metropolitan areas. For households without a car the position is reversed and the difference even more extreme (Figure 1.8). The effect of socio-economic differences between these areas is compounded by the fact that, for a given household type, the level of car ownership in rural areas is higher – in other words the inaccessibility otherwise experienced without use of a car makes owning and running them a greater priority within the household budget (Cullinane and Stokes 1998). By contrast the changing transport conditions

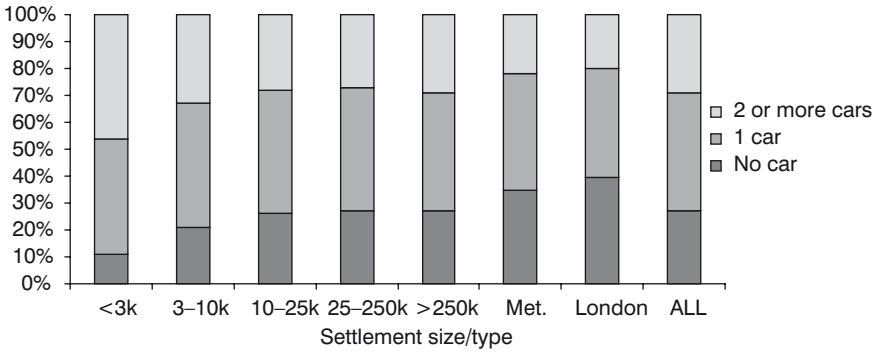


**Figure 1.8** Household car ownership by area type (source: National Travel Survey 2006)

in London are having the reverse effect. Uniquely the proportion of households in the capital with two or more cars actually *fell* in the decade to 2001.

Car ownership within households normally depends on at least one of its members being able to drive. Amongst older people especially this is not necessarily the case. In the 60–69 age group for example 14% of men and 42% of women do not have a licence, mostly because they never learnt to drive. Over time the significance of this factor is lessening as more people have learnt to drive when they were young and these cohorts are working their way through the population. Inability to drive remains higher amongst women in all age cohorts although amongst adults in their twenties today there is now only a 12-point difference between men and women.

Over the last ten years however there has been a surprising reversal in the trend towards greater licence-holding amongst young people. The proportion of 17–20 year olds with a licence has *fallen* from 43% to 34%. Possible reasons for this include the increasing costs of insurance and driving lessons, fewer people applying for a driving test (there has been a sustained drop since a theory element was added in 1996) and a larger proportion of young people entering higher education and taking on debts. Even if these are unwelcome constraints amongst a group that would otherwise prefer to drive, the fact that a greater proportion are learning to live as adults *without* driving could have longer term effects on their travel behaviour and attitudes when they (mostly) do eventually obtain a licence.

Household car ownership is an item included in the Census of Population. This enables information to be generated at different spatial levels for all parts of the country and it is common therefore for planners to use car ownership as a proxy for car availability. However because of variations in household composition and in licence holding by age and gender this can be misleading. For example because non-car-ownership is more common amongst lone adult households the proportion of *people* living in such households is lower than the household figures imply (19% as compared with 25%). However the presence of one or more cars in a household does not automatically convey 'availability' on its members. Children of course can only enjoy availability as passengers at best. But even amongst adults availability will depend on licence holding and on the relationship between the number of cars and the number of drivers in their household.

Since 1975 the National Travel Survey has categorised adults in car-owning households according to whether they are a 'main driver' (i.e. people who use one

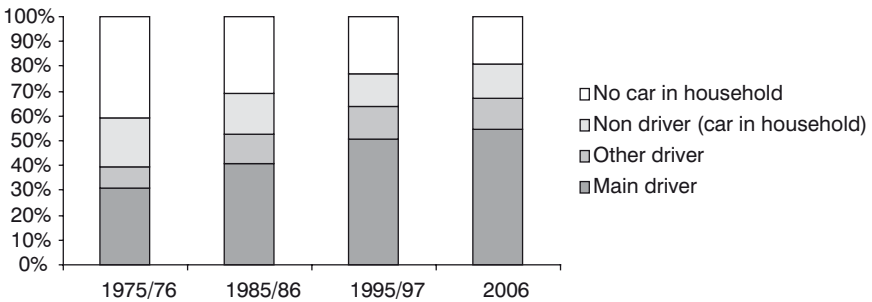


**Figure 1.9** Car availability amongst adults 1975/76–2006

of the household cars most), another driver or non-driver. During this period the proportion of main drivers has increased from 31% to 55% (Figure 1.9). However because of changes in licence-holding noted previously, the increase has been much more marked amongst women than men (13 to 47% compared with 51 to 63%). It is also worth noting that the rate of increase in 'main drivers' (or – possibly more significant – the decrease in people without this level of availability) has slowed significantly in the last decade.

The growth in the number of households where all adults are main drivers (i.e. each has their 'own' car) not only transforms the mobility and independence of the individuals concerned, it also feeds through into decisions on location and travel by the household as a whole which are predicated on this attribute. We explore the nature and significance of 'car dependence' when considering the potential for behavioural change (Chapter 16).