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Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

Contents

1. 'Transport for Everyone': Introduction and Summary	4
1.1 Transport for Everyone: Towards an Overarching Understanding	4
1.2 Accessibility	7
1.3 Executive Summary I: The 'Story' of Mobility among Different Social Groups.....	7
1.4 Executive Summary II: Key Findings	10
1.5 Plan of the Report.....	16
2. Becoming Mobile: Children, Young People and Transport.....	18
2.1 Summary: The 'Life-Course' of Mobility Needs	18
2.2 Selected Key Findings.....	18
2.3 Why do Children and Young People Travel?.....	19
2.4 Children's and Young People's Attitudes Towards Transport	23
2.5 Parents' Attitudes and Choices about Children's and Young People's Travel	27
2.6 Barriers to Travel.....	28
2.7 Children and Young People, Mobility and Social Exclusion	31
2.8 Initiatives	33
2.9 What Would Make a Difference?.....	36
3. Diverse Experiences of Mobility in Adulthood: General Findings, Low Income, Ethnicity and Rural Communities.....	38
3.1 Summary: Similarities and Differences in Adults' Mobility	38
3.2 Selected Key Findings.....	38
3.3 Why do Working-Age Adults Travel?	40
3.4 What Modes of Travel do Working-Age Adults Use?	40
3.5 Travel Attitudes: General Findings	41
3.6 Barriers to Travel: General Findings	44
3.7 Mobility and Social Exclusion: General Findings.....	44
3.8 Mobility and Low Income	45
3.9 Mobility and Ethnicity.....	48
3.10 Mobility and Adults in Rural Areas	49
3.11 Initiatives.....	51
4. 'Gendered' Mobility: Women, Men and Transport.....	53

4.1	Summary: Gender Disparity in Accessibility	53
4.2	Selected Key Findings	53
4.3	Why do Men and Women Travel?	54
4.4	How do Men and Women Travel?	55
4.5	Women's Attitudes to Transport Modes	56
4.6	Barriers to Travel for Women	58
4.7	Women, Mobility and Social Exclusion.....	59
4.8	Initiatives	60
5.	Access: Disabled People and Transport	63
5.1	Summary: Accessing and Trusting Transport	63
5.2	Selected Key Findings	63
5.3	Why do Disabled People Travel?	64
5.4	How do Disabled People Travel?	64
5.5	Attitudes Towards Transport	66
5.6	Barriers to Using Public and Community Transport	66
5.7	Transport and Social Exclusion.....	70
5.8	Initiatives	71
6.	Staying Mobile: Older People and Transport	75
6.1	Summary: Mobility in the Later Life-course.....	75
6.2	Selected Key Findings	75
6.3	Why do Older People Travel?	76
6.4	How do Older People Travel?	77
6.5	Attitudes Towards Transport	79
6.6	Barriers to Travel.....	81
6.7	Older people, Transport and Social Exclusion	83
6.8	Initiatives to Improve Travel for Older People.....	86
7.	Conclusions	89
7.1	Services and Barriers	89
7.2	Services and Activities	89
7.3	Key Barriers.....	97
7.4	Needs, Barriers and Gaps in the Evidence Base.....	102
8.	Main References with Details	103
9.	Supplementary References	163

Evidence Base Review on Mobility - Choices and Barriers for Different Social Groups

Final Report
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1. 'Transport for Everyone': Introduction and Summary

1.1 Transport for Everyone: Towards an Overarching Understanding

The Department for Transport (DfT) aims to provide *transport which works for everyone*. In order to achieve this aim, it is crucial to have a comprehensive picture of the mobility of different social groups and of how transport provision and policy impacts upon their choices. Individual pieces of social research have previously analysed and reported these differences, but there is a need to review and draw together this evidence.

Work has already begun on understanding the needs of the most vulnerable groups. Notably, transport disadvantage and social exclusion was explored in the Social Exclusion Unit report 'Making the Connections: Transport and Social Exclusion' (SEU, 2003), which highlighted the importance of an effective transport system as a gateway to accessing jobs, education, health services, food shopping and social activities. 'Making the connections' highlighted how poor transport or access to services impacts on individuals' opportunities and quality of life, community cohesion, and affluence and commerce. Problems with transport and accessibility mean that

Important government objectives relating to welfare to work, educational attainment and participation, health inequalities and uptake of key social and cultural services by target groups may be undermined. Poor transport as a barrier to work may contribute to higher benefit payments, and reduced tax contributions. Resources are wasted through missed health appointments, delays in patient discharge from hospital, and course drop-outs in education.

(SEU, 2003, p.20)

In light of this, the Department for Transport - and local authorities and other agencies - have responsibilities for accessibility planning, responsibilities for ensuring that people can access key services, jobs and other activities. Accessibility planning depends on the systematic assessment of people's mobility, and the access problems they encounter. This report informs this assessment. That is, in order to achieve an overarching understanding of the mobility choices and barriers for different social groups, the Department for Transport commissioned an extensive literature survey of recent research (2000-2005). This evidence base review used specified search techniques to ensure the systematic collection of references, and a number of screening criteria were used to check the quality of the research included in the review. More details about the review methodology are offered in the appendices.

The review explores how transport affects the lives of different social, geographical and community groups. Reflecting the foci in the literature, this report reviews findings for the following groups:

- children and young people,

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

- adults, with specific attention to:
 - people on low income,
 - people living in rural areas,
 - people from black and minority ethnic groups,
 - women, and
 - disabled people, and
- older people

For each of these groups the review focused on five themes:

- travel behaviour,
- travel choices,
- attitudes to travel,
- barriers to mobility, and
- the measures to overcome barriers.

Questions associated with these themes are listed in Box 1 below.

This report, then, seeks to build on the 'Making the Connections' report by exploring 'mobility' as a whole, including people's desire, need and ability to travel, and how these differ between different social groups.

Box 1 Focusing on Mobility: Five Themes

1 Travel Behaviour:

- How do people get around?
- For what reasons are they travelling?

2 Travel Choices:

- What influences transport choice for different people? What factors do they have to take into account (for example, travelling with young children/cost)?
- How, and why have different groups' travel patterns changed in the last five years?
- How will the ways in which people get around change in the future?

3 Attitudes to travel:

- To using different transport modes
- To public transport
- To personal safety (including both crime and road safety issues)
- To wider transport policies such as road building, road user charging and car use

4 Barriers to mobility:

- What are the main barriers to using public transport for different groups? Including:
 - physical accessibility,
 - availability,
 - affordability,
 - personal safety concerns (including road safety and crime/fear of crime),
 - travel aspirations and horizons, and
 - travel information.
- How do these barriers affect different groups' access to key facilities? Including:
 - employment,
 - education and training,
 - health services,
 - leisure facilities,
 - quality food shopping and
 - 'personal business' facilities for example, post office, bank or chemist.

5 What helps, or would help, different groups to overcome barriers to accessing key facilities?

1.2 Accessibility

Accessibility planning aims to 'promote social inclusion by helping people from disadvantaged groups or areas access jobs and essential services' (DfT, 2003). The 'Making the Connections' report identifies four priority areas for accessibility planning: access to work, access to learning, access to healthcare and access to food shops (for fresh fruit and vegetables). The relationship between social inclusion and employment, education and healthcare are self-evident. The significance of access to food shops is that lack of choice of food can result in poor dietary habits, which in turn is associated with increased risk of developing coronary heart disease, type two diabetes, obesity or cancer (SEU, 2003, p.16). 'Making the Connections' also refers to the importance of access to other social activities: 'participation in social, cultural and leisure activities is very important to people's quality of life and can play a major part in meeting policy goals like improving health, reducing crime and building cohesive communities' (SEU, 2003, p.16).

Accessibility planning calls for a multi-agency response, co-ordinated through Local Transport Plans. Accessibility is not just about transport but can be influenced by decisions on the location, design and delivery of other services and by people's perceptions of personal safety (DfT, 2003).

This review should help to inform accessibility planning in a number of ways. It demonstrates how mobility needs and experiences change over the life-course. It highlights how different social groups have distinct needs and encounter particular obstacles. Through a comparison of the findings about the different social groups, and in relation to the needs of current accessibility policy, the review identifies 'knowledge gaps' in the literature.

1.3 Executive Summary I: The 'Story' of Mobility among Different Social Groups

The review calls for a two-part summary. This first part offers a 'narrative account' of people's changing transport needs and experiences across the life-course and in relation to key social characteristics. The review highlights that people's relationship with transport is dynamic, and as people make transitions through childhood, youth and old age their changing lifestyles trigger new travel needs and experiences of transport. Cross-cutting this, the review also demonstrates a rich diversity in travel needs and experiences among people at similar life stages, but differentiated on the basis of income, locality, ethnicity, gender and disability.

From childhood, people have distinct mobility needs and experiences. For primary school children, travel to school is an important focus and characteristically involves being escorted by parents or other adults. Young children's independent mobility is limited by parents' concerns for their safety. They are most likely to get to school by walking (escorted) or by car. Parents' use of cars reflects, among other things, the time pressures they experience in completing the 'school run' before getting to work on time.

Increasingly with age, older primary school children and secondary school children become independently mobile, using a wider range of travel modes. Independent use of public transport use - most commonly buses - is seen as positive, exciting and adventurous among younger children. However, by their teens - as their travel experiences and transport needs develop - they are likely to become more dissatisfied with the quality and provision of services, and begin to think of public transport use as an unavoidable necessity of life. This marks a significant shift in perceptions towards public transport: some of the keenest users become some of the sharpest critics.

When young people reach the late teens (16 years and over) their mobility needs expand to encompass travel to work, training, further education, leisure and other services. Their needs become more complex, they are likely to travel further distances, and to travel at night as well as during the day. By their late teens, the range of travel modes increases to include driving, which is seen predominantly as the optimum form of travel.

The transition into adulthood brings about a transition in mobility needs. In addition to trips for leisure, these needs can be understood to derive largely from the responsibilities acquired in

adulthood: the need to travel to employment, the need to escort children to childcare services and school, the need to shop for the household and undertake household business.

However, adults are hardly a homogenous group. Age, again, is a variable. For example, younger adults (aged in their 20s to 50s) are, with age, increasingly less likely to visit friends and more likely to use a car, while older adults (aged 50+) are more likely to visit friends and less likely to use a car. But more acute, perhaps, are the contrasting experiences associated with different key social characteristics cross-cutting adulthood.

Adults on low income are less likely to have access to private vehicles and more likely to be dependent on - and vulnerable to problems with - local public transport. The costs of public transport can be a particular difficulty for people on low income, though lack of available, adequate services are a greater obstacle.

- Adults from black and minority ethnic groups are more likely to depend on public transport than white adults. Public transport planning in the UK has not necessarily kept pace with changing local communities, leaving some of the needs of black and minority ethnic groups unmet. Moreover, for some of these adults, fear from racial attacks on public transport can represent a key obstacle to mobility.
- Adults in rural areas are more likely to own and use private transport than those in urban areas. For many in rural areas, the limited provision of public transport means that car-ownership is crucial and unavoidable in order to access everyday opportunities and services.

Gender constitutes another critical dimension of the diversity of travel needs and experiences among adults. Men are more likely to travel for work purposes than women, while women are more likely to take social and personal business journeys (including escorting children to school). Women are less likely to have access to a car, and more likely to travel by bus, foot or taxi than are men, arguably reflecting

men's use of the car to travel to work. Women are more likely than men to be responsible for childcare. As such they face specific difficulties associated co-ordinating these responsibilities with work (for example, escorting children to school and travelling to work), and with travelling with children on public transport, including problems boarding and alighting, and experiencing unreliable services. Bus routes often do not meet women's needs to travel off-peak, and on non-radial routes. Additionally, women are more likely than men to have fears about personal security.

Issues of access and mobility are particularly distinct for disabled people. *People with disabilities are less likely to drive and more likely to be dependant on public or community transport, or lifts from family and friends. Disabled people often find public transport inaccessible. They can also experience a lack of flexibility in their travel choices: often travelling involves planning ahead (for example, booking assistance for rail travel, or booking community transport 48 hours in advance), making it difficult to be spontaneous. Even then there may be uncertainty about whether services will be provided as expected. Where disabled people lack confidence that they can complete a journey safely - that all stages of the journey will be safe and accessible, including the street environment - they may be unwilling to 'risk' travelling. Disabled people who drive experience fewer problems, although the distance of parking spaces from services, and the misuse of disabled parking spaces can cause difficulties.*

People's needs for and experience of transport change again in later life. Travel needs are likely to become focused on shopping, personal business (notably healthcare) or to visit friends. Older people become less likely to drive and more likely to use public transport. Maintaining independence and accessing essential services and social opportunities underpin older people's quality of life. A lack of transport can mean difficulty accessing essential services and facilities, such as pension services and medical services, and can lead to social isolation and loneliness.

Needs and experiences continue to change throughout later life. For example, declining physical mobility with age can mean giving up driving, can cause problems using public transport, and lead to

more dependence on others for transport. Vulnerability to social exclusion among older people increases with age and impairment, and the proportion of people who have severe difficulties in accessing essential services (shops, post office and doctor) increases with age.

1.4 Executive Summary II: Key Findings

The second part of this two-part summary presents selected key findings from the substantive chapters. Please note that throughout this report that the symbol [†], attached to a reference refers to a caveat or reservation about the study in question; details are provided in the main reference table, Chapter 8.

Children and young people: selected findings

- A third of trips made by people under the age of 17 were for education, a fifth were trips to visit friends, a fifth were escort trips (for example, accompanying parents shopping), a tenth were trips for sport or entertainment (DfT, 2005b).
- 58 per cent of parents of children aged 7-10 cited traffic danger as a reason for escorting their children to school, 45 per cent cited 'stranger danger'. 42 per cent of 7-10 year olds were not allowed by their parents to cross the road alone (DfT, 2005a). Children were more worried about the dangers posed by traffic than by 'stranger danger' (Granville et al., 2002).
- 79 per cent of children aged 7-10 were accompanied by parents or adults to school, compared to 29 per cent of those aged 11-13 years (DfT, 2005b).
- Trips to school were predominantly by foot or by car for primary and secondary school children, but bus use increases among secondary school children: among 12-16 year olds, 56 per cent of girls and 42 per cent of boys used the bus at least three days a week (DfT, 2004b[†]).
- The proportion of journeys to school made by car is increasing. Between 1992-1994 and 2002-2004, trips to primary school by car increased by 11 per cent and trips by foot reduced by 11 per cent (DfT, 2005b).
- Children in the Derek Halden Consultancy (2003a[†]) study described buses as fun and 'cool'. Younger teenagers saw public transport as a social experience, where they could socialise with friends and experience independence (McWhannel and Braunholtz, 2002), but they were also seen as slow, uncomfortable, smelly, littered, overcrowded, and as having cramped seating (Martin et al., 2004[†]). Young adults perceived buses as slow and unreliable (McWhannel and Braunholtz, 2002).
- Young people between the ages of 17 and 20 made more use of public transport than any other age group, including adults, and were more likely to walk (DfT, 2005a). Young men aged 17 to 20 years old are also the peak group for bicycle use, but even in this group, only four per cent of trips were by bicycle (DfT, 2005b).
- Young people were less likely than adults to feel secure on public transport: 30 per cent had concerns for their personal security when using public transport (DfT, 2004b[†]).
- Children and young people tended to become increasingly 'car focussed' with age: 21 per cent of 13 year olds wanted to travel to school by car compared with 38 per cent of 15 year olds (Martin et al., 2004[†]).
- The proportion of young people holding driving licences has declined in recent years, from 48 per cent in 1992-1994 to 26 per cent in 2004 (DfT, 2004a).
- Young people, particularly those in rural areas, tended to see cars as essential in accessing higher education, employment and leisure opportunities (Cartmel and Furlong, 2000). Young people in rural areas without access to a private vehicle, particularly those with low educational attainment, had extremely disadvantaged job opportunities (Pavis et al., 2000; Titheridge, 2004; Cartmel and Furlong, 2000). Lack of public transport, coupled with low income, when combined for young people in rural areas, restricted access to shops and opportunities for social and cultural participation.
- 40 per cent of young people in rural areas said that transport issues influenced their decisions about post-16 education (Storey and Brannen, 2000). Having a second car gives families a greater choice of schools for their children, while 54 per cent of households in the lowest income quintile had no car compared with eight per cent in the highest (DfT, 2005b).
- The key barriers to mobility among children and young people included safety, school policies which undermined opportunities for walking and cycling to school (for example, lack of secure cycle parking), and the availability, reliability and cost of public transport.

Working-age adults: selected general findings

- Adults' travel needs fall into four broad categories by purpose of travel: employment, 'escort' (for example, taking children to school), shopping and personal business and leisure trips. A broadly similar number of trips were made in each category (DfT, 2005b).
- Eight per cent of adults used public transport at least four days a week, and 12 per cent used it daily, while two-thirds reported daily or almost daily use of a private car (BMRB Social Research, 2004). Younger adults are more likely to own cars than older adults, and car-ownership tends to increase the distances people travel.
- Most adults use a variety of transport modes in order to meet different transport needs; only 11 per cent of car drivers claimed they could not have used any other transport mode for any of their journeys (Stradling, 2005). However, Barker and Connolly (2005) found that 41 per cent of the car journeys reported by adults could not have been made by public transport.
- The literature suggests strong public support for developing public transport. Seventeen per cent of people felt that improvements in public transport would make it easier for them to get the job they wanted and 29 per cent said it would have an impact on their social life (CfIT, 2002[†]). There was also some resistance to increasing public transport use and reducing car use.
- The factors mediating public transport use include range of services and journey-times, the quality and perceived safety of facilities, and cost. In 2002/2003, about one-fifth of households in England without access to a car reported some difficulty in accessing doctors and supermarkets, while 95 per cent of car-owning households said it was easy to access these services (DfT, 2005a).

Adults on low income: selected findings

- Adults in lower socio-economic groups use public transport more frequently than those in higher socioeconomic groups (BMRB, 2004).
- Affordability is a particular, though not dominant, barrier to public transport for people on low income. Less than five per cent of households in the 1999 Poverty and Social Exclusion Survey said they could not afford to use public transport, compared to 25 per cent reporting non-use due to lack of availability. Lower income families were less likely to have a car if there was a frequent local bus service (Barker and Connolly, 2005).
- Dargay and Hanly (2002) found that, over time, higher income bus users were more likely than lower income users to switch from bus-use to car-use in response to increases in bus fares.
- Difficulties with transport can limit employment opportunities: the Department for Transport (2002b) found that 13 per cent of respondents of working-age said they had decided not to apply for a particular job in the last 12 months because of transport problems.

Adults from black and minority ethnic groups: selected findings

- Bus stops and bus times sometimes relate to out of date patterns of shopping and work, or to particular religious holidays, and do not reflect the transport needs of black and minority ethnic groups (DfT, 2003a[†]).
- Adults from black and minority ethnic groups depend more on public transport to travel to work than white adults (DfT, 2005a; Owen and Green, 2000). A third of Hindu, Muslim and Sikh organisations reported discrimination of their members on public transport (Weller et al., 2001[†]). A quarter of young people from black and minority ethnic groups experienced harassment due to their colour, race or religion, on public transport (DfT, 2004b[†]).

Adults from rural areas: selected findings

- Adults in rural areas are more likely to own and rely on private transport than those in other areas (Dargay, 2002; Echenique and Homewood, 2003; Gray et al., 2001; Stratford and Christie, 2000).
- Only 51 per cent of rural households are within a 13 minute walk of a bus stop with at least an hourly service, compared with 96 per cent of urban households (DfT, 2005a).
- Transport difficulties in rural areas are associated in the literature with problems accessing work, learning, healthcare, shopping and other services.

Gender: selected findings

- 23 per cent of all men's journeys were work related, compared to 14 per cent of women's. Over a quarter of trips made by women in their 30's were 'escort' trips, typically escorting children to school (DfT, 2005a).
- 81 per cent of men hold a full driving licence, compared to 61 per cent of women (DfT, 2005a). Women are more likely to be reliant on public transport, walking, and taxis than men (DfT, 2004d; see also Scottish Executive, 2001; Finch et al., 2000; Reid Howie, 2000[†]). A lack of private transport and the costs of public transport make low income mothers particularly reliant on walking as a means of transport (Bostock, 2001; see also Hine and Mitchell, 2003).
- Private transport is widely perceived among women as essential for co-ordinating home and work responsibilities (for example, DfT, 2005a; Dobbs, 2005; Jarvis, 2005). Public transport is often seen as a 'last resort'. Barriers for women to public transport include physically accessing services when escorting children, unhelpful attitudes of public transport staff, inadequate services (reliability and routing), lack of information, and concerns over safety.
- Women with dependent children are least likely among jobseekers to be willing to travel longer periods to access employment (McQuaid et al., 2001). Women's relative lack of access to private transport can limit their access to employment opportunities (Dobbs, 2005; Hamilton et al., 2000).
- Transport difficulties for women can impact on the accessibility of healthcare. Hamilton and Gourlay (2002[†]) report that 69 per cent of missed maternity care appointments were due to transport or transport-related factors. Low income mothers without personal transport have reported forgoing their own use of health services to ensure that lifts from relatives would be available for their children's health needs (Bostock, 2001). Transport difficulties have also been identified as obstacles for women in accessing social and leisure opportunities for themselves and their children.

Disabled adults: selected findings

- Car access is lower for disabled people, and many are dependent on public transport. Transport is a key issue of concern for disabled people: 48 per cent of respondents in the Disabled Persons Transport Advisory Committee (DPTAC) (2002a[†]) survey mentioned transport as an important local concern.
- Escorted travel by car was the most common mode of transport for disabled people (67 per cent used this mode in the survey month), 43 per cent travelled by local bus, 40 per cent by taxis/minicabs, 20 per cent drove. Around half of them had used transport initiatives: volunteer drivers (20 per cent), Motability (17 per cent), buggies at airports or stations (15 per cent), Shopmobility (11 per cent), dial-a-ride (ten per cent), Disabled Person's Reporting System (to book assistance at railway stations, ten per cent) and the Taxicard scheme in London (seven per cent). Disabled people reported far lower levels of access to a car than the general public: 60 per cent of disabled people had no car in the household compared to only 27 per cent of the general public (DPTAC, 2002a[†]).
- Disabled people were positive about community transport. The main factors determining use of community transport were its availability (46 per cent), cost (39 per cent), physical accessibility (33 per cent) and the flexibility of the route (32 per cent) (DPTAC, 2002b[†]).
- The cost of public transport is a barrier to travel for many disabled people, with the high cost of taxis being a particular problem (Reid Howie Associates Ltd, 2004[†]; Beart et al., 2001; Lucas et al., 2001[†]; DPTAC, 2002a[†]). In the UK there is a mixture of special taxi services available at reduced costs for disabled people but, apart from services for disabled children for education, these are at the discretion of the local authorities. Only 42 of 150 local authorities were found to use voucher schemes, with vouchers varying widely in value.
- The Social Exclusion Unit (SEU, 2003) found that only ten per cent of trains and 29 per cent of buses met the required standards and regulations introduced under the Disability Discrimination Act of 1995. Lack of equality of access to public transport is seen as an important structural barrier to disabled people's equality of position in society (Grewal et al., 2002).
- Champion et al. (2003) found that about half of disabled people in their survey had turned down a job offer or job interview due to lack of accessible transport, and about half said that lack of transport had restricted their choice of job. Boylan and Burchardt (2002) found that disabled entrepreneurs cited lack of transport as one of the barriers to entering and sustaining self-employment.
- Disabled people are more likely to have difficulty accessing health care than members of the general population. Twenty per cent of the disabled people in Champion's (2003) study said that it was difficult or impossible to get the healthcare they needed due to inaccessible transport.
- Twenty-one per cent of respondents felt that inaccessible transport had limited the range of adult education and training courses available to them (Champion, 2003).

Older people: selected findings

- Older people travel predominantly for shopping, personal business (including healthcare), and to visit friends (for example, DfT, 2005b).
- Both mobility and travel decline with age: in 1996-98, men aged 80 and over made less than half the number of journeys made by those aged 50-54, and women aged 80 and over made just over a third of the journeys made by those aged 50-54. However, older people are travelling more than they were a decade ago. From 1996-98, men aged 75-79 travelled about 3,500 miles a year, which was over 1,000 miles more than those in the same age group did in 1985-86 (Noble, 2000).
- As people age, they become less likely to travel by private transport, and there is a particular decline in levels of car driving. Travel as a car passenger, by bus and by taxi increases with age. There are differences in the travel patterns of men and women, and of older people in different ethnic groups (DfT, 2005b; CSR Partnership, 2002a; Noble, 2000).
- Older women and older people who live alone are less likely to have access to a car (Windle, 2004). Older people from black and minority ethnic groups are less likely to be licence holders than the general population CSR Partnership (2002a).
- Older people in poorer health are least likely to have access to a private vehicle or use of public transport. Use of public transport was influenced by the individual's perceptions of their own health (for example, fear of falling) and availability of transport options (Windle, 2004).
- The number of older people who hold a driving licence is expected to increase in the future. In 1996-1998, over two million over 70s held a driving licence: this is expected to more than double in the next 15 years (Noble, 2000).
- Older people who used public transport tended to use it more than other age groups: 23 per cent of women aged 70-74 used public transport 'a lot' compared to 14 per cent of women in the 50-54 age group (Marmot et al., 2003). The percentage of people who reported that they 'mainly' used public transport was relatively low in middle-age (around 25 per cent), but increased to around 40 per cent in the 65-84 age group (Gilhooly et al., 2005[†]).
- Barriers to older people's use of public transport included concerns over personal safety, problems with physical mobility and difficulties carrying shopping or heavy loads, access to private transport and unreliable services (for example, Gilhooly et al., 2005[†]; Windle, 2004; Sykes et al., 2005). Information and language could be a particular barrier to older people from black and minority ethnic groups (CSR Partnership, 2002b).
- 39 per cent of older people without access to a car and who never used public transport experienced multiple social exclusion (Barnes et al., 2005). Difficulties with transport are associated with problems for older people in accessing healthcare (for example, Clark et al., 2002[†]) and services such as the Pension Service (Kelly et al., 2004).

1.5 Plan of the Report

Chapter 2 reviews research on children, young people and mobility. It considers both literature specifically about children's and young people's mobility, as well as general transport research which refers to children and young people: subsequent chapters share the same treatment of group-specific and general literature. The review of research on working-age adults begins in Chapter 3 with a discussion of adults' mobility generally, followed by consideration of the distinct mobility issues encountered by people on low income, people from black and minority ethnic groups and people from rural areas. The review of research on working-age adults continues in Chapter 4, focusing on the gender dynamics of mobility, and Chapter 5 focuses on the transport needs and experiences of

disabled people. Chapter 6 addresses older people's mobility. Each of these substantive chapters covers the following areas:

- mobility needs: why people travel,
- mobility modes: how people travel,
- attitudes towards different modes of transport,
- the barriers to mobility, particularly the barriers to accessing transport,
- the relationship between mobility and social exclusion, and
- the initiatives to improve transport for children and young people.

The concluding chapter discusses the findings and identifies 'knowledge gaps' in the literature in terms of both the particular service areas prioritised in accessibility planning (work, learning, healthcare, shopping, and social participation), and the five 'key barriers' to mobility as identified by the Social Exclusion Unit (SEU, 2003).

2. Becoming Mobile: Children, Young People and Transport

2.1 Summary: The 'Life-Course' of Mobility Needs

The review vividly highlights how mobility needs and experiences change over the life-course, and this is most defined in the literature on children and young people. The literature suggests three phases of developing mobility needs and behaviour for primary school age children (relating to children aged from around five to ten years old), secondary school age children (around 11 to 16 years old), and young people over 16 years old and into their early twenties. Most of the research regarding school age children focuses on travel to and from school. Primary school age children are most likely to be escorted on journeys by parents or other adults. The main transport barrier children encounter is their parents' concern for their safety, which limits their opportunities to travel independently. Increasingly with age, older primary and secondary school children become independently mobile, using a wider range of travel modes and are more likely to travel further distances to get to secondary school.

Independent use of public transport - most commonly buses - is seen as positive, exciting and adventurous among younger children but, by their teens, they are more likely to think of public transport as an unavoidable necessity of life. This marks a significant shift in perceptions towards public transport: some of the keenest users become some of the sharpest critics.

It is not until young people reach their late teens (16 years and over) that the focus of the literature widens to encompass travel to work, training, further education, leisure and other services. Young people's mobility needs become more complex, they are likely to travel further distances, and to travel at night as well as during the day. By their late teens, the range of travel modes used by young people expands to include driving, which is seen predominantly as the optimum form of travel.

2.2 Selected Key Findings

- A third of trips made by people under the age of 17 were for education, a fifth were trips to visit friends, a fifth were escort trips (for example, accompanying parents shopping), a tenth were trips for sport or entertainment (DfT, 2005b).
- 58 per cent of parents of children aged 7-10 cited traffic danger as a reason for escorting their children to school, 45 per cent cited 'stranger danger'. 42 per cent of 7-10 year olds were not allowed by their parents to cross the road alone (DfT, 2005a). Children were more worried about the dangers posed by traffic than by 'stranger danger' (Granville et al., 2002).
- 79 per cent of children aged 7-10 were accompanied by parents or adults to school, compared to 29 per cent of those aged 11-13 years (DfT, 2005b).
- Trips to school were predominantly by foot or by car for primary and secondary school children, but bus use increases among secondary school children: among 12-16 year olds, 56 per cent of girls and 42 per cent of boys used the bus at least three days a week (DfT, 2004b[†]).
- The proportion of journeys to school made by car is increasing. Between 1992-1994 and 2002-2004, trips to primary school by car increased by 11 per cent and trips by foot reduced by 11 per cent (DfT, 2005b).
- Children in the Derek Halden Consultancy (2003a[†]) study described buses as fun and 'cool'. Younger teenagers saw public transport as a social experience, where they could socialise with friends and experience independence (McWhannel and Brauholtz, 2002), but they were also seen as slow, uncomfortable, smelly, littered, overcrowded, and as having cramped seating (Martin et al., 2004[†]). Young adults perceived buses as slow and unreliable (McWhannel and Brauholtz, 2002).

- Young people between the ages of 17 and 20 made more use of public transport than any other age group, including adults, and were more likely to walk (DfT, 2005a). Young men aged 17 to 20 years old are also the peak group for bicycle use, but even in this group, only four per cent of trips were by bicycle (DfT, 2005b).
- Young people were less likely than adults to feel secure on public transport: 30 per cent had concerns for their personal security when using public transport (DfT, 2004b[†]).
- Children and young people tended to become increasingly 'car focussed' with age: 21 per cent of 13 year olds wanted to travel to school by car compared with 38 per cent of 15 year olds (Martin et al., 2004[†]).
- The proportion of young people holding driving licences has declined in recent years, from 48 per cent in 1992-1994 to 26 per cent in 2004 (DfT, 2004a).
- Young people, particularly those in rural areas, tended to see cars as essential in accessing higher education, employment and leisure opportunities (Cartmel and Furlong, 2000). Young people in rural areas without access to a private vehicle, particularly those with low educational attainment, had extremely disadvantaged job opportunities (Pavis et al., 2000; Titheridge, 2004; Cartmel and Furlong, 2000). Lack of public transport, coupled with low income, when combined for young people in rural areas, restricted access to shops and opportunities for social and cultural participation.
- 40 per cent of young people in rural areas said that transport issues influenced their decisions about post-16 education (Storey and Brannen, 2000). Having a second car gives families a greater choice of schools for their children, while 54 per cent of households in the lowest income quintile had no car compared with eight per cent in the highest (DfT, 2005b).
- The barriers to mobility among children and young people included safety, school policies, and the availability, reliability and cost of public transport.

2.3 Why do Children and Young People Travel?

There seems to be relatively little empirical information on the travel needs of children and young people in the literature captured by this review. Department for Transport (2005b) reported that between the ages of five and 15, education was the single most frequent trip purpose, accounting for 35 to 40 per cent of trips in 2004. Results from the 2004 National Travel Survey showed that around a third of trips made by people under the age of 17 were for education, around 20 per cent were escort trips (i.e. accompanying someone else), around 20 per cent were trips to visit friends and around ten per cent were trips for sport or entertainment (DfT, 2005b). Martin et al., (2004[†]) found that most frequently reported non-school trips were for leisure (for example, music lessons, dance lessons, sports, cinema, parties) or, to a lesser extent, to visit families and friends or to go shopping.

The purposes of travel become more varied as children get older, and a survey by the Department for Transport (2004b[†]) found that although the most common trip purpose was school or college, young people also made trips for shopping and leisure activities.

How do children and young people travel?

Most of the research focuses on the mode choice for travel to school. Walking is the most common mode, followed by car use, although bus-travel increases at secondary school age, reflecting increased distances travelled to secondary as compared to primary schools. Car use is increasing, particularly for travel to primary school. This may be due both to an increase in the extent to which parents escort children on journeys, and increasing distances travelled to primary school.

While children of secondary school age were infrequent users of taxis and trains, use of taxis increased among 14 to 16 year olds, with 31 per cent of young women and 18 per cent of young men using a taxi at least once a month (DfT, 2004b[†]). Cycling also increases in this age group, particularly in the case of boys, although the number of trips made by bike remains relatively low (DfT, 2005a).

There is an increase in independent travel as children get older. Under the age of 16, mode choice is largely determined by parents' choices about transport, parents' resources (for example, access to a car) and their concerns about children's safety. Post-16, choices reflect extended travel needs. Over the age of 16, rail and taxi use increases, and car use also increases as some young people learn to drive (DfT, 2005a). Young people between the ages of 17 and 20 made more use of public transport than any other age group, including adults, and were more likely to walk for longer (20 minutes or more without stopping). Young men aged 17 to 20 years old are also the peak group for bicycle use, but even in this group, only four per cent of trips were by bicycle (DfT, 2005b). Although people in this age group have the option to learn to drive, the proportion of young people holding driving licences has declined in recent years, from 48 per cent in 1992-1994 to 26 per cent in 2004 (DfT, 2004a). Young people were most likely to point to the cost of learning to drive as a deterrent (DfT, 2005d[†]).

Travel to school

The majority of primary school children walk to school, although an increasing number are driven. Data from the National Travel Survey in 2004 showed that 50 per cent of primary school children walked to school, 41 per cent travelled by car, three per cent by bus and one per cent cycled (DfT, 2005b) (see also Rowland, 2003; Black et al., 2001; Gilhooly and Low, 2005). The Commission for Integrated Transport (CfIT, 2002[†]) found that, of adults who escorted children to primary school, around 49 per cent did so on foot, 41 per cent did so by car and only three per cent by public transport.

As for primary school children, the most frequent travel mode for travel to secondary school is walking (44 per cent). However, bus use increases in secondary school children, where travel by bus is the second most frequent method (29 per cent). While car-travel is still prominent (only five per cent of young people rarely or never travelled by car), 56 per cent of girls aged 12 to 16 years and 42 per cent of boys reported using the bus at least three days a week (DfT, 2004b[†]). Secondary school children are less likely to travel to school by car than are primary school children, with 22 per cent of secondary school children travelling by car (see also AA Foundation for Road Safety Research, 2000[†]). Three per cent of secondary children cycle to school (DfT, 2005b), despite the fact that ownership of bicycles is high (Jones et al., 2000; Davies, 2001).

The change from primary to secondary school is often related to a change in travel mode for individual children: over half of children who were driven to primary school walked to secondary school. Of those who walked to primary school, 35 per cent went to secondary school by bus and 29 per cent were driven (DfT, 2005c).

Demographic factors have been found to be associated with the likelihood of being driven to school. Age is an important factor, with primary school children becoming more likely to walk to school as they get older. Gilhooly and Low (2005) found that journeys to school by car were more common in younger children (aged five to ten years), than 10 to 12 year olds, who were more likely to walk (see also Willits et al., 2005). Distance to school has an impact on travel mode: the children living closest to their primary school were found to be more likely to walk, with car use increasing with distance (Gilhooly and Low, 2005; Black et al., 2001). In rural areas travel by car is more likely, probably due to higher distances to schools (Martin et al., 2004[†]).

Car-ownership is associated with being driven to school, with children of primary school age being more likely to be driven to school in households with more than one car (58 per cent driven to school) than in households with one car (36 per cent driven to school), and with only five per cent of children in households without a car being driven to school (DfT, 2005b; see also AA Foundation for Road Safety Research, 2000[†]). Willits et al., (2005) found that children were more likely to be driven to school if they came from households where at least one parent was working 16 or more hours a week, and this may reflect higher levels of car-ownership in working families.

The proportion of journeys to school made by car is increasing. Between 1992-1994 and 2002-2004, trips to primary school by car increased by 11 per cent and by foot reduced by 11 per cent (DfT,

2005b). In the four Midlothian primary schools studied by Gilhooly and Low (2005), driving to school almost doubled between 1985 and 2001. There was less change for secondary school children, with the percentage of children walking remaining at around 44 per cent. The percentage travelling by car rose by six per cent, and bus use declined by three per cent over the past decade (DfT, 2004a).

Why is travel to school by car increasing?

The average length of the primary school trip increased from 1.2 to 1.7 miles between 1992-1994 and 2002-2004 (DfT, 2005b), and the authors suggest that this increase in distance reflected the switch from walking to being taken by car, and the large increase in average trip length for trips to school by car between 2003 and 2004.

Distances travelled may have increased for a number of reasons, for example, household disposable income has increased, contributing to rising rates of car-ownership. The Department for Transport (2005b) found that children in households with two or more cars tended to travel further to school than children in one car households who, in turn, travelled further than children in no car households. To an extent this reflects locality: households in rural areas were more likely to have two or more cars, while inner city households were more likely to have no cars, however, as noted above, families may buy a second car in order to have more choice of schools. In addition, more families have moved out of towns, and commute in on a daily basis; and parents have a greater choice of schools, so children are less likely to attend their local school (Department for Environment, Transport and the Regions 2000).

Increase in escort trips may also partly explain increase in travel by car to primary school. Primary school children were less likely to travel to school alone in 2004 than in 1992/1994 (nine per cent compared with 14 per cent). Sixteen per cent of car trips between 8 and 9am in 2004 were for 'escort education' (mainly taking children to school) compared with nine per cent in 1992/1994. At the peak time (8.45 am) 23 per cent of car trips, by residents of urban areas in term time, were school runs in 2004 compared with 17 per cent in 1992/1994 (DfT, 2005b). Escort trips are discussed further in the chapter on gender.

Possibly associated with this, it has been found that children are more likely to be driven *to* school in the morning than driven home *from* school. Children driven *to* but not *from* are most likely to walk or use the bus to get home (Gilhooly and Low, 2005; AA Foundation for Road Safety Research, 2000[†]).

Travel to further education/employment

After secondary school, it is likely that young people have to travel further for education, and the difficulties in accessing further education caused by lack of transport have been described above. There was little evidence found on the modes of transport used by students to access further education, with the exception of research carried out in the South East. Students in London were found to mainly use public transport to travel to FE (University of Brighton with Sirius Seven Software, 2004[†]; MVA Ltd, 2003[†]).

MVA Ltd (2003[†]) found that transport was not a dissuasive factor in London students' decisions to continue into Further Education (FE), nor was it the main determinant in young people's choice of FE institution (MVA Ltd, 2003[†]), even though less than a quarter of young people in full-time education in London lived within one mile of their place of study (Willits et al., 2005). In fact, the University of Brighton with Sirius Seven Software (2004[†]) found that some younger students (between 16 and 18 years old) did not consider journey time when choosing study places. As a result, some had to travel long distances to the FE institute of their choice without having considered the implications, particularly in terms of costs (see also Steer Davies Gleave 2002). Young people in rural areas, in contrast, are more likely to take transport into account when deciding about post-16 education (Storey and Brannen, 2000).

There is also very little information about travel modes used specifically for work for this age group. McWhannell and Brauhnoltz (2002) found that public transport was the primary mode for travelling to college or work in urban areas, while in rural areas young people tended to use cars.

Leisure travel

There was little research on children's leisure travel, particularly in the younger age groups. The AA Foundation for Road Safety Research (2000[†]) found that most non-educational journeys were made by car, particularly in rural areas (Martin et al., 2004[†]). Although most young people relied on parents to ferry them about on evenings and weekends, they often did not like this reliance on parents (Martin et al., 2004[†]).

Young people over the age of 16 had broader aspirations for leisure travel, being more likely to want to travel further, for example, into cities, for their evening entertainment. McWhannel and Braunholtz (2002) found that many even with cars would elect to use public transport or taxis so that they could drink: alcohol consumption was instrumental in their travel mode decision.

Transport and independence

Children's mode of travel, particularly school travel, is strongly influenced by their parents' resources, lifestyles and choices. Less than half of the primary school age children in the Barker study (2003[†]) were involved in deciding their school travel mode, and Davis (2001) found that parents had an influence on the travel modes of primary school children, as well as children aged 13-14. The Derek Halden Consultancy (2003a[†]) found, based on parents' reports, that the average age at which children made their own decisions about travel to school was 15½ years.

Parents are less willing to allow younger children to travel independently and are more likely to accompany them to school, often by driving them. Over time children become increasingly more likely to travel independently of their parents, with more independent walking and bus-travel. Seventy-nine per cent of children ages 7-10 were accompanied to school, compared to 29 per cent of those aged 11-13 years (DfT, 2005b). Martin et al., (2004[†]) found that two-thirds of secondary school pupils travelled to school with other children or young people, and nearly one-fifth travelled alone. Boys and young men were more likely to travel to school alone than girls and young women (see also Jones et al., 2000), and older children more likely than younger children. Type of area also influenced whether a child travelled alone: children in urban areas were more likely to travel to school alone than those in rural areas (probably reflecting increased dependency on car use for rural families).

Parents are more likely to have fears about traffic danger and personal safety in the case of younger children, and this fear underpins decisions to escort younger children to school. Parents of younger children (aged 7-10) were more likely than those of older children (aged 11-13) to cite traffic danger (58 per cent as opposed to 30 per cent) and fear of assault/molestation (45 per cent as opposed to 26 per cent) as reasons for escorting children to school. The main reason given for escorting older children was that the school was too far away (32 per cent). Forty-two per cent of 7-10 year olds were not allowed by their parents to cross the road alone, compared to only four per cent of those aged 11-13 (DfT, 2005a).

Generally, parents are more willing to allow their children to use public transport independently as they get older. The Department for Transport (2004b[†]) found that seventy-four per cent of young people aged 12-14 travelled independently (i.e. without an adult), this increased to 93 per cent for 14-16 year olds (see also Martin et al., 2004[†]). There was a gender difference, in that young men were more likely to travel independently than young women (DfT, 2004b[†]); Davis (2001) found that teenage girls were more likely to be restricted in their travel choices by parent's concerns about their safety and vulnerability to 'stranger danger' (see also Martin et al., 2004[†]). Jones et al.'s study (2000) shows how teenage children managed the risks associated with travel in their local areas (for example, by travelling in groups), and tried to protect their independence by making sure their parents did not know everything about their travel or about risky situations.

2.4 Children's and Young People's Attitudes Towards Transport

Car-travel tends to be viewed positively across age groups, although younger children are more concerned about the negative environmental aspects of car-travel. Young people aspire to be drivers when they are older as they feel cars give independence and flexibility. Primary school children are positive about walking, travel by bus, and cycling, although many are not able to cycle as much as they would like due to parental concerns about their safety. Secondary school children begin to travel more independently, and value this independence; buses are viewed positively as they allow independent travel. Cycling is seen as 'uncool'. Young people over the age of 16 have broader travel needs, wanting to travel further to work, education, or leisure (for example, McWhannell and Braunholtz, 2002). Public transport is often seen as not meeting these needs, taxis are more often used, and private transport (owning their own car or moped) is the ideal for many young people.

Attitudes towards cars

Children are concerned about traffic dangers, which make it unsafe for them to walk or cycle (Barnardo's, 2004[†]). Despite this, primary and secondary school children tend to prefer to travel by car if given the choice (Martin et al., 2004[†]), and aspire to be drivers when they get older (Kingham and Donohoe, 2002). The desire to drive was very widespread, particularly for young adults, and cars were seen as a necessity in rural areas (Derek Halden Consultancy, 2003a[†]; Martin et al., 2004[†]). Primary school children appreciated the convenience, speed, and comfort of cars (Derek Halden Consultancy, 2003a[†]), and children in the EPPI (2001[†]) study perceived the benefits of travelling to school by car as spending time with parents, listening to music, and learning about how to drive.

However, primary school children also recognised the negative aspects of car-travel: pollution, congestion, parking problems and costs (Derek Halden Consultancy, 2003a[†]); car-travel was associated with laziness and the danger of traffic accidents (EPPI 2001[†]). Kingham and Donohoe (2002) found that older primary school children - 11 year olds - were better at identifying environmentally friendlier modes of travel, with boys and girls equally environmentally aware. Lucas et al., (2001[†]) observed that, despite younger children's desire for cars, they were enthusiastic about ideas to reduce traffic congestion and to encourage use of public transport and other environmentally friendly travel modes. In particular they wanted more trams, cycle and bus lanes, car sharing, and cheaper buses. Air quality was an issue for these children as many had asthma.

Secondary school children preferred cars because they were perceived as far more comfortable, faster, and offering more freedom than other transport modes (Derek Halden Consultancy, 2003a[†]; Martin et al., 2004[†]). Davis (2001) found a more measured enthusiasm among older secondary school children (aged 13 and 14): while looking forward to being drivers, they were concerned about pollution, joy-riding and abandoned cars, and resigned to increasing levels of motor traffic. However, children aged 13-14 were less critical of car pollution than younger pupils and more positive about the benefits of car-ownership (Davis, 2001). Children tended to become more 'car focussed' with increasing age: 38 per cent of 15 year olds wanted to travel to school by car compared to 21 per cent of 13 year olds (Martin et al., 2004[†]). Martin et al., (2004[†]) noted an observation by some children that their generation were used to everything being instant: cars were the only mode of travel which could provide an instant gratification of travel needs, while everything else took too long.

Young adults, particularly those in rural areas, tended to see cars as the only mode of transport that matched their changing travel needs, and as essential in accessing higher education, employment and leisure opportunities (Cartmel and Furlong, 2000). Driving was regarded as expensive, however some thought they had no choice but to drive, especially if they lived in rural areas (McWhannell and Braunholtz, 2002). Alsop et al., (2002) reported that older teenagers often felt guilty about demands they had to make on economically hard-pressed parents for lifts. Mackett (2001) found that parents supported their children in becoming car users as this relieved concerns about children's safety and meant they were not inconvenienced by having to escort and collect their teenage children.

Attitudes towards walking

Primary school children were positive about walking; Davis (2001) found walking to be the preferred choice for travelling around their local area for 9-14 year olds. Cycling came a close second for boys, while girls preferred cars and buses to cycling. Girls aged between 13 and 14 were the group who were most likely to prefer walking. Kingham and Donohoe (2002) found lower levels of preference for walking compared to cycling and car-travel (though this may represent urban-rural distinctions).

Walking was the second most preferred means of travel to school for secondary school children, after travel by school bus (Derek Halden Consultancy, 2003a[†]; cf Martin et al., 2004[†]). Martin et al., (2004[†]) observed that 12 to 13 year olds were more likely to want to walk (27 per cent) and use the bus (19 per cent) to travel to school than older children; only 18 per cent of 14 to 15 year olds preferred to walk and ten per cent to use the bus.

Young people recognised walking as a healthy activity, and as a good form of exercise (Martin et al., 2004[†]; Lucas et al., 2001[†]). The Derek Halden Consultancy (2003a[†]) reported a generally favourable attitude to walking, with a good understanding of the health and environmental benefits. Girls in particular appreciated the opportunities to mix with friends provided by walking. Walking was also thought to raise children's awareness of their environment (EPPI, 2001[†]; Tolley et al., 2003[†]).

Negative perceptions about walking related to walking being seen as too slow, fear of traffic, stranger danger, fear of bullying, the weather, and embarrassment of walking with parents (Martin et al., 2004[†]; EPPI, 2001[†]). With regard to walking to school, Granville et al., (2002) found that children were not as worried about 'stranger danger' as were their parents. Children were more concerned about the dangers posed by traffic and could refer to incidents when as pedestrians they were nearly involved in accidents.

Farmer (2005) reported that nearly all children (aged eight to 15 years) felt safe walking alone in their neighbourhoods and about three-quarters went to the local shops or the park on their own. Children felt safer as they got older. Boys were more likely to say they felt safe than girls, and were more likely to walk to the shops or the park on their own. Asian children were least likely to visit local amenities on their own (67 per cent), compared with white children (77 per cent) and black children (88 per cent). Although children were less likely to feel safe walking alone in the neighbourhoods with higher levels of deprivation, children in those neighbourhoods were nevertheless more likely to visit local amenities alone (78 per cent compared to 71 per cent in the least deprived areas). Young people in rural areas were more likely to feel safe walking around their areas compared to urban areas. Of those who felt unsafe, fears included abduction by strangers, bullying from other children or teenagers, and danger from traffic and dogs. Girls, in particular, were concerned about the risk of abduction (Farmer, 2005).

Attitudes to cycling

Although few children cycled to school, primary school children had positive attitudes to cycling (Kingham and Donohoe, 2002, Davis 2001). Boys had particularly positive attitudes to cycling around their local area, with 41 per cent of 9 to 11 year old boys and 30 per cent of girls aged 9 to 11 saying they would like to cycle (Davis, 2001). Barnardo's (2004[†]) observed that children were angry that the dangers associated with heavy traffic prevented them from cycling more and that the provision of safe cycle routes was not prioritised (cf Lucas et al., 2001[†]).

Secondary school children tended to have less positive attitudes, although Derek Halden Consultancy (2003a[†]) found that a small percentage of secondary school children, particularly boys, wanted to cycle to school. In the case of secondary school children, cycling is increasingly seen as 'uncool' (Derek Halden Consultancy, 2003a[†]). McWhannel and Brauholtz (2002) observed that 12 to 14 years old tended to cycle only for recreation, not for transport. Girls in this age group had more negative perceptions of cycling than boys, primarily due to peer pressure and embarrassment (Davis 2001; see also McWhannel and Brauholtz, 2002). Girls were unwilling to cycle because they did not see many people cycling locally, and in particular perceived that few girls of their age cycled - cycling was 'usually men on bikes' (Davis 2001; see also McWhannel and Brauholtz, 2002). Some young people in their older teens and early twenties who lived in urban areas said they would use bicycles

more to get to work or college if they saw other people using them. A few said they would consider it if there were shower facilities at work (McWhannel and Brauholtz, 2002). Derek Halden Consultancy (2003a[†]) observed that cycling was seen as slower and less convenient than other travel modes.

Attitudes to buses

Primary school children had positive attitudes to buses. Secondary school children valued the opportunity for independent travel offered by buses, but were critical of actual bus provision. Young adults had broader travel needs and aspirations, and were less likely to feel that public transport met their needs.

Primary school children are generally enthusiastic about buses and public transport. Children in the Derek Halden Consultancy (2003a[†]) study described buses as fun and 'cool', albeit sometimes dirty and scruffy. Lucas et al., (2001[†]) found that younger children approved of buses because they were environmentally friendly, but also complained that they were often delayed, slow, unreliable, dirty and vandalised. There were also common concerns about safety and security on buses - specifically, regarding the potential threat of other passengers - and some felt that cars were safer, at least for passengers if not pedestrians.

Attitudes to buses were mixed in secondary school children (Martin et al., 2004[†]). Secondary school pupils were positive about the independence bus-travel provided.

Younger teenagers saw public transport as a social experience, where they could chat to their friends, have fun travelling and experience a degree of independence. McWhannel and Brauholtz (2002). Buses were perceived by secondary school children as easy to use (Martin et al., 2004[†]), and as reliable and cheap (Derek Halden Consultancy, 2003a[†]). However, secondary school children tended to be critical of actual bus provision. Buses were seen as slow, uncomfortable, smelly, littered, overcrowded, and as having cramped seating (Martin et al., 2004[†]). Running times did not always suit the young people's needs (Derek Halden Consultancy, 2003a[†]), buses did not always stop at convenient locations and bus drivers were sometimes perceived as unfriendly and unhelpful (Martin et al., 2004[†]).

School buses tended to be viewed more positively by children than public buses, as children had guaranteed seats, and were less likely to have problems getting to school on time (McWhannel and Brauholtz, 2002). Derek Halden Consultancy (2003a[†]) found that positive views of school buses included the fact that they were free, they were perceived as being more fun, children could travel with their friends, and children felt bored with cars. However, some children felt negative about the noise, vehicle quality and driver attitude on school buses, and school buses tended to be more uncomfortable than public buses.

McWhannel and Brauholtz (2002) observed that managers of bus services and local authorities were aware that older buses tended to be used for school transport because this was a non-profit making venture. School children were not a target group for bus services because they pay half-fare, yet, when travelling at peak times, take up valuable full-fare space. Services operators in this study perceived that secondary school children could be disruptive and vandalise property, and assumed that - rather than becoming long-term users of bus services - they would stop using buses as soon as they were able to drive. This could be seen as leading to a poor experience of public transport for secondary school children, which may have an impact on their attitudes towards public transport and their future transport choices.

Older teenagers and those in their early twenties tended to see public transport as simply a way of getting from A to B, with the journey being a practical necessity. Post-16, young people's travel horizons broadened, meaning they tended to travel further (for example, going further afield for employment or for nights out at the weekend). The options provided by bus-travel were seen as limited and young people often preferred faster, more convenient routes (such as taxis), irrespective of costs. Once young people were able to drive, public transport was valued less and its only attraction was seen to be cost (McWhannel and Brauholtz, 2002; Storey and Brannen, 2000).

Young adults perceived buses as slow and unreliable (McWhannel and Braunholtz, 2002). The University of Brighton with Sirius Seven Software (2004[†]) found that half of the students in the study were dissatisfied with crowding on public transport, and the regularity and reliability of public transport was also seen as inadequate.

Attitudes to trains

Trains were not widely used by children, although train use increased with age particularly post-16. Trains were generally favoured over buses by teenagers and young adults because they were seen as quicker, as saving overall journey time and as more reliable, although young people were unhappy about overcrowding on trains at peak times and felt that stations were unsafe at night (McWhannel and Braunholtz, 2002).

2.5 Parents' Attitudes and Choices about Children's and Young People's Travel

As discussed above, children's travel mode is strongly influenced by their parents' views and choices, and this is particularly the case with travel to school. Young children are unlikely to travel independently and have little influence over their mode of transport (for example, Barker 2003[†]). With increasing age children are more likely to travel independently of their parents. In recognition of the importance of parents' attitudes in determining mode choice for travel to school, and in particular for understanding why children are driven to school, there has been a significant amount of research into parents' attitudes and choices about how their children travel to school.

Derek Halden Consultancy (2003a[†]) found that parents of secondary school children thought punctuality was the most important concern when deciding how to send their child to school. The second most important concern was safety - specifically risks of 'stranger danger' - although parents seemed unsure how much of a problem this represented. There was a gender difference in parents' concerns: parents of girls rated 'stranger danger' and safety more highly than boys' parents. The Department for Transport (2002) presented similar findings and further noted that parents' decisions about travel mode also included their concerns about the distance children had to travel to school.

Parents' attitudes to driving their children to school

Key factors in parents' decisions to drive their children to school were the need for 'trip chaining' (i.e. dropping children off at school before going on to work or elsewhere), speed and convenience, and beliefs that travel by car provided greater safety and security for children.

The National Travel Survey (DfT, 2005b) does not include specific questions about why parents choose to drive their children to school, but does show that 17 per cent of trips (by all modes) escorting children to school in the morning were followed by a trip to work or business. Mackett (2001) found in his study involving ten Hertfordshire schools, that only 28 per cent of trips by car were made exclusively to take children to school, 47 per cent of parents travelling by car dropped children to school on the way to work, 15 per cent reported dropping children to school on the way to taking other children on to another school or nursery, and seven per cent reported dropping children to school on the way to 'other' destinations (see also Black et al., 2001; *AA Foundation for Road Safety Research*, 2000[†]). Granville et al., (2002) found that parents cited cost as a benefit, in that they were dropping children at school on the way to other destinations rather than paying for a separate journey, and that some parents appreciated the drive to school as an opportunity to spend quality time with their children. This suggests that trip chaining is likely to be an important factor in parents' decisions to drive their children to school. As described above, parents of primary school children tend to want to escort their children to school, and driving children to school may be the most convenient option if the parent has other commitments such as going on to work or dropping a second child off at nursery. Black et al., (2001) found that parents who were full-time home-carers, or for whom parking near schools was difficult, were less likely to drive their children.

Security and safety was a key reason for driving children to school; driving children to school allayed parents' fears about traffic dangers and road safety, 'stranger danger', bullying, truancy and children mixing in 'undesirable' company, and allowed parents to protect children from bad weather (Gilhooly and Low 2005; Granville et al., 2002).

Speed was the most commonly cited reason given by parents of primary and secondary school children in the survey by the *AA Foundation for Road Safety Research* (2000[†]) for driving their children to school. Parents in Gilhooly and Low's study (2005) felt driving was quicker or more convenient and that children preferred being driven to school. Twenty per cent of respondents to the survey carried out by the *AA Foundation for Road Safety Research* (2000[†]) said that there was no other transport available to them (20 per cent). Distance to school was also cited as a reason for driving children to school (Gilhooly and Low, 2005).

Parents' attitudes to children walking to school

Parents had mixed attitudes to children walking to school. Gilhooly and Low (2005) found that children who walked to school did so in many cases because parents did not have cars or because traffic congestion made driving impractical. Parents felt that there were benefits associated with walking: it was convenient for parents who did not need to escort their child, it encouraged children to be independent, it encouraged children to mix with friends, and it was healthy (although parents of boys rated the health benefits of walking as more important than parents of girls; DfT, 2002). Parents who escorted their children mentioned that walking provided them with a period of quality time together. Drawbacks to walking to school included the distance involved or the amount of school 'kit' that had to be carried. Parents also mentioned concerns about the danger of damage to school equipment, especially if carried by primary children. Granville et al., (2002) found that parents' safety concerns about allowing children to walk to school in some areas included a lack of street lighting on dark winter mornings, and narrow or congested pavements. The weather was also a problem because schools often did not have anywhere to store wet clothing. Some felt that the relative health benefits of walking were negligible because the children exercised in other, more beneficial, ways through programmed activity during and after school.

Parents' attitudes to cycling

Gilhooly and Low (2005) found that parents felt that cycling was an inappropriate travel mode for primary school children because of traffic and 'stranger danger'. Similarly, Granville et al., (2002) found that many parents of primary and secondary school pupils did not consider it viable for their children to cycle to school despite recognising the benefits in terms of time, costs and developing children's independence and road sense. Cycling was often seen as untenable because of busy, congested roads, poorly maintained road surfaces, the lack of cycle lanes and, in the winter, bad weather and inadequate street lighting. These concerns were heightened by the belief that other road users do not show adequate consideration toward cyclists. Parents of the younger children had some concerns about personal safety, while parents felt that it would be difficult for older children to carry all of their school 'kit' on bicycles.

Parents' attitudes to children's use of buses

The Department for Transport (2002) reported that parents of primary school children were unlikely to allow their children to use a local bus because of cost implications if they accompanied them and security concerns if they did not (cf Granville et al., 2002). School buses were viewed more positively, especially if there was a regular driver or escort on board. Parents suggested they would be willing to allow their child to use a school bus if they were at least nine years old (compared to 12 years for a local bus).

Parents of primary and secondary school children identified several benefits of travelling to school by bus: it gave children more social contact with their friends, fostered independence, had cost benefits (and was often free), was better for the environment, and children were delivered directly to school. Parents felt buses were convenient (for parents) and relatively safe. Drivers were trusted, and thought to be less likely to 'leave a child behind' (Granville et al., 2002; Gilhooly and Low, 2005).

However, parents also felt that there was a limited availability of school buses (not all schools had a school bus service) or that collection points were too far away from children's homes. Parents were also concerned about school buses' reliability. Parents of primary school children did not want their children waiting unsupervised at bus stops. Other concerns included the length of journey times, the unruly conduct of other children on the bus and safety on buses which did not have seatbelts (Granville et al., 2002).

2.6 Barriers to Travel

There is very little information about barriers to travel for primary school age children, with barriers mainly relating to parental concerns about safety. Evidence mainly concerns barriers to walking and cycling to school, as opposed to travelling by car. Older children have more freedom in their travel and are more likely to travel independently, but are restricted by parental, and own, concerns about

safety, and by the cost and availability of public transport. Lack of access to private transport is a barrier to travel for children and young people in all age groups.

Concerns about safety

There is evidence that more children (particularly at primary school age) wanted to walk and cycle to school than were allowed to. Parents restricted primary school children's use of bicycles and unaccompanied walking on safety grounds, particularly concerns about traffic and 'stranger danger' (McWhannel and Brauhnoltz, 2002; Davis 2001; Derek Halden Consultancy, 2003a[†]). Children are offered cycle training at primary school with the aim of improving cycling proficiency and promoting safe cycling. However, Colwell and Culverwell (2002) examine the relationship between cycle training, attitudes to cycling and accident rates. The authors suggest cycle training may not be effective in promoting safe cycling, and that new training approaches are needed that focus on encouraging safe behaviour.

Congestion around the school was a barrier for parents allowing their children to walk or cycle to school (Granville et al., 2002). This led to a cyclical problem in which parents refused to allow their children to walk to and from school because of the dangers associated with local traffic congestion, but by driving to collect their children from school thereby caused traffic congestion (Gilhooly and Low, 2005).

Although children increasingly travelled independently once they reached secondary school age, parents, and the children themselves, expressed some concerns about the safety of independent walking, cycling and bus use. Parents tended to restrict and control the extent to which children were allowed to travel independently. This was particularly the case for girls (Martin et al., 2004[†], Davis 2001). In inner city areas children perceived there was danger in travelling alone because of traffic and 'stranger danger'. As a result of 'stranger danger', they tended to walk in groups (Jones et al., 2000).

In its study of young people's experiences of public transport, the Department for Transport (2004b[†]) found that young people (aged 12-16) were less likely than adults to feel secure on public transport, and felt particularly vulnerable after dark. Thirty per cent had concerns for their personal security when using public transport. The majority of young people felt unsafe on buses and underground trains, and at bus stops and stations. Young people are more likely than older people to be victims of anti-social behaviour or crime on public transport. Twenty-three per cent of young people from black and minority ethnic groups experienced harassment due to their colour, race or religion, on public transport.

Young women in particular were nervous about waiting at a bus stop late at night, although young men also mentioned this. Young women also felt concerned about their safety travelling on buses alone, especially at night (McWhannel and Brauhnoltz, 2002). **School policies**

School policies and codes could limit the extent to which children were able to walk or cycle to school. School 'no cycling' policies, or the absence of secure bicycle storage facilities could prevent the use of bicycles. (Derek Halden Consultancy, 2003a[†]; McWhannel and Brauhnoltz, 2002; Davis, 2001; AA Foundation for Road Safety Research, 2000[†]). The AA Foundation for Road Safety Research (2000[†]) found that some school uniform codes (for example, requiring girls to wear skirts) could affect the secondary school pupils' willingness to cycle to school.

Granville et al., (2002) noted that sometimes parents would have considered allowing their children to walk home unescorted, but this was negated where school policy meant that pupils could only be released if collected by an appropriate adult.

Availability and reliability of services

Dibben (2003) found that teenagers and young adults were frustrated by the lack of public transport in the evenings in rural areas. Similarly, McWhannel and Brauhnoltz (2002) discovered that few young

people used late night services, often because the last bus or train was too early in the evening. The infrequency of late night services meant that young people could be stranded if they missed a bus.

MVA Ltd (2003[†]) found that key transport problems for students in London included traffic congestion and unreliability and infrequency of - and over-crowding on - public transport services. Pavis et al., (2000) and Cartmel and Furlong (2000) documented that in rural Scotland poor transport infrastructure could cause problems accessing higher education and was a major barrier to getting work. In particular, public transport to employment was often not available when employees needed it. *Steer Davies Gleave (2002) found that transport provision for students in further education with special needs was inflexible and did not reflect their school or college attendance pattern.*

McWhannel and Brauholtz (2002) identified that speed and reliability were the main reasons for choosing one form of transport over another to get to work or college. Some young people, especially those in rural areas, complained that local public transport either did not run from their area or would not get them to work or college at the right time. The length of journey by public transport was also a problem, but most young people said they would use public transport if it was guaranteed to get them to work or college on time.

Cost

At secondary school age, pupils' parents generally paid bus fares for school travel. However, reflecting their increasing independence, young people usually paid bus fares for leisure travel themselves. Parents generally paid for trains or taxis (Martin et al., 2004[†]; McWhannel and Brauholtz, 2002). Young people over the age of 16 generally paid for all public transport fares themselves, including travel for educational purposes (McWhannel and Brauholtz, 2002).

Young teenagers, particularly those in urban areas, were very cost conscious about public transport and concerned about the cost when their journeys involved several stages (McWhannel and Brauholtz, 2002). Cartmel and Furlong (2000) identified that the cost of fares for public transport restricted young people's opportunities.

Young adults found travelling by public transport expensive, particularly once they were over the age of 16, and Young Persons Railcards were often judged unaffordable, especially as they did not cover buses in addition to trains (Lucas et al., 2001). Cost was also the most common barrier to learning to drive, particularly for young women (DfT, 2005d[†]).

2.7 Children and Young People, Mobility and Social Exclusion

Children's travel is influenced by parental resources and concerns, as well as locality issues (for example, distance to schools). Children in low income rural areas are at a particular disadvantage.

Children in low income families are less likely to have access to a car as a mode of travel. The Department for Transport's (2005b) National Travel Survey reported that 54 per cent of households in the lowest income quintile had no car compared with eight per cent in the highest. Over half of the households in the highest quintile had two or more cars. Similar findings were reiterated by Dibben (2003) and Barker (2003[†]). Lone parent families are less likely than couple families to be able to afford a car (Dibben, 2003; Barnes et al., 2005).

Lack of access to a car is a particular problem in rural areas where public transport services are sparse. Lack of access to a car can mean limited choice of schools (and for people over 16, limited access to further education), limited leisure opportunities, and restricted employment opportunities.

Transport and work

There is evidence that a lack of transport can act as a barrier to accessing employment for young people, although much of this work focuses on young people living in rural areas. Pavis et al., (2000) found that most young people living in rural areas, without tertiary qualifications reported that inadequate transport was a major barrier to employment, and Titheridge (2004) found that young women in rural areas, with low levels of educational attainment and who relied solely on buses for transport, had extremely disadvantaged job opportunities. Cartmel and Furlong (2000) also identified that transport problems were a significant barrier to employment for young people, with some employers stipulating that owning private transport was a requirement for a job. As a result, some young people described having to abandon career aspirations, even after starting formal training. Others, who were skilled, were forced into unskilled work, and some young people were unable to take up training opportunities.

Public transport in rural areas often did not meet young people's needs to travel to employment; young people often faced a lack of appropriate services, lengthy journeys or high costs if they were to travel to work. Young people who were unable to drive found that they were restricted by inflexible bus services, coupled with inflexible working hours which did not allow them to fit their work around bus times. Some young people had to rely on family and friends for lifts (Cartmel and Furlong, 2000). However, the cost of learning to drive and of owning a car was prohibitive when unemployed. Young people were often unable to afford a car without getting a job - making for a vicious circle of disadvantage (Storey and Brannen, 2000).

Other problems relating to employment in rural areas were that young people often needed to travel long distances to sign-on for benefits, which could be expensive (Pavis et al., 2000), and access to job-search facilities could be problematic (Titheridge, 2004).

Transport and learning

Lack of transport can mean that some children are disadvantaged in their choice of schools. Current home-to-school travel entitlement rules mean that children are only entitled to free transport if they attend their nearest suitable school and live three miles or more away from it, or two miles away if aged under nine. The Social Exclusion Unit (2003) report suggests that children from low income families who are unable to afford travel costs may have a limited choice of schools, and may not be able to access schools offering alternative curricula or particular faith schools. Families on higher income may have more choice of schools as they are able to travel further; the Department for Transport (2005b) suggests that having a second car gives families a greater choice of schools for their children, and that some families may buy a second car so their children can attend a particular school that is not easily accessible in other ways.

Titheridge (2004) found that young people who lived in rural areas, and did not have access to a car, had very poor access to educational facilities. In more rural areas there was a greater distance to

travel to educational facilities, coupled with lower levels of access to public transport; many young people in the study did not have access to a bus service to connect them with educational opportunities, even within an hour's walk of their home. Forty per cent of 15 to 16 year olds in rural areas said that transport arrangements had influenced their decisions about post-16 education (Storey and Brannen, 2000).

A survey by MVA Ltd (2003[†]) of students in further education in London found that transport impacted on attendance. Half of the students (51 per cent) reported being often late for, or absent from classes, and nearly one-quarter (22 per cent) were 'almost always' late or absent, due to transport problems. Those who used buses and trains (but not the tube) were particularly likely to report being late or absent. Service unreliability, congestion, service frequency, and service crowding were the most frequently-cited problems. Those attending institutions with the lowest average travelling distance, and where students reported the lowest levels of interchange on their journeys, were least likely to report problems, suggesting that lower journey distance and complexity may reduce the impact of transport on attendance.

Access to goods and services

Pavis et al., (2000) reported that in rural Scotland much of the accommodation available to young people (aged 18 to 25 years) was in rural areas where the nearest supermarkets could be a 20 to 30 mile round trip away. Similarly, Cartmel and Furlong (2000) observed that certain goods were not available in rural areas, or were very expensive unless people had transport to the nearest town. This meant that young people (aged 18-24 years) who were setting up independent households were generally dependent on their families for shopping trips.

Transport and leisure

Children and young people in low income rural households were less able to access leisure activities in nearby towns, or join after-school clubs, because they were less likely to have access to cars, and bus services were limited and infrequent (Dibben, 2003; Alsop et al., 2002; DfT, 2002; Cambridgeshire Rural Transport Partnership, 2005). Martin et al., (2004[†]), found that particular problems in rural areas included not being allowed by parents to walk unattended because of traffic risks on busy roads, parents being too busy to ferry children, and inadequate bus services (cf Farmer, 2005).

Low income, coupled with the lack of public transport in rural areas is the key problem - when family income is taken into account, young people from rural areas were slightly more likely to have participated in clubs or groups at school and out of school than those in urban areas (Farmer, 2005). Children who usually travelled by car were more likely to participate in clubs than those who did not. This difference was greatest for clubs outside of school: 71 per cent of children who usually travelled by car said they used such clubs compared to 39 per cent who did not usually travel by car. Dibben (2003) found that young people (17 to 25 years) from higher income families were particularly more likely to take part in leisure activities such as sports clubs than those from low income households. Storey and Brannen (2000) noted that around half of the young people in the study living in rural areas felt that owning a car was essential for access to leisure.

McWhannell and Brauhnoltz (2002) observed that children and young people found that the availability and cost of public transport services influenced when and how they participated in leisure activities, for example, restricted services on Sundays limited young people's opportunities to go into town or visit friends. Young people aged 16-24 were found to be more likely to cite lack of transport as a reason for not attending music and dance events than were people aged 25-74, with 25 per cent of young people citing transport as a barrier compared to less than ten per cent of people in other age groups under 75 (Fenn et al., 2004).

2.8 Initiatives

Most initiatives relating to children and young people focus on reducing car use for the journey to school. However there is also evidence of initiatives to reduce the social exclusion of young people through improving the availability of transport.

Initiatives focusing on reducing car use for the journey to school

School travel plans

School travel plans have been advocated as a way for schools to assess travel to school, to identify safety concerns and to promote walking to school¹. However, there is little evidence that this approach is successful in changing travel to school. A Department for Transport study (2000) found that the success of travel plans depended as much, if not more, on parental attitudes towards children travelling by means other than by car as they did on practical barriers. A later evaluation by the Department for Transport (2005e[†]) of the impact of school travel plans found that evidence was too inconclusive to determine whether they reduced travel by car in favour of increased walking, cycling and use of public transport.

Rowland et al., (2003) compared 11 schools which had received advice from school travel co-ordinators about developing and implementing school travel plans, with ten schools without travel co-ordinators. The study found that provision of school travel co-ordinators increased the production of school travel plans, but did not appear to change children's school travel patterns nor allay parents safety concerns. More broadly, it was reported that half of the schools approached to take part in the initiative refused to do so on the grounds that they were too busy or did not want to take on the extra responsibility of school travel. Rowland et al., also recognised that the solution to problems identified in many of the schools would involve urban planning measures beyond the control of the individual school.

Initiatives to encourage children to use buses

Several initiatives have attempted to increase bus use for journeys to school. WS Atkins (2000[†]) describe best practice in increasing bus journeys to school, presenting case studies such as the provision of dedicated coach and bus services. There is some evidence that these initiatives have reduced car use, although the initiatives have not been systematically evaluated. Other case studies included reduced fares, and staggering of school start and finish times (which is common policy in Northern Ireland). Staggered school times were found to be efficient in transport terms, because one bus could serve more than one school. However, teachers, pupils and parents experienced difficulties with the scheme, including difficulties for working parents in co-ordinating work and childcare, and the inconvenience of very early start times and late finish times. The authors also point to the importance of the quality of the service, with the need for well-maintained vehicles, drivers with positive attitudes of drivers and discipline among the children.

Steer Davies Gleave (2003) evaluated the success of American 'Yellow Bus' schemes that have been piloted in seven schools, which aimed to improve the quality and image of travel by school bus. They found that although the initial reactions of students, schools and parents were broadly positive, particularly in relation to safety aspects, there were varied views about the affordability of the scheme and the need to pay in advance, and some negative perceptions of the vehicle size and lack of space inside the bus. Administrative costs for schools and local authorities were a concern. At two of the three schools that piloted the scheme, there was an initial shift from car to Yellow Bus use. However this was not sustained, and much of the new take-up of the Yellow Bus service represented a shift from walking or local bus use rather than from car. It was noted that careful routing may be needed to

¹ DETR (1999) School travel strategies and plans: a best practice guide for local authorities. London, HMSO

promote more effective modal shift from car to bus. Overall, the success of the schemes varied depending on local context.

'Walking bus'

Positive outcomes have been found to be associated with 'walking bus' initiatives, which involve children walking to school together on an organised route, supervised by a number of responsible adults. Mackett (2001) found children to be positive about walking buses, in particular, the social aspects, the pleasure of walking, and the increase in exercise. Drawbacks for children were having to walk with people they did not like, and for some, having to walk at all. Parents saw similar benefits and felt 'walking buses' provided an opportunity for children to have independence, although some parents saw lack of flexibility as a disadvantage (also reported in Mackett, 2003). Similarly, Barker (2003[†]) observed that primary school children enjoyed travelling to school using the 'walking bus' because it was fun and enabled them to spend more time with their friends, and Tolley et al.'s (2003[†]) evaluation found that parents and children reported similar benefits.

Davies (2005[†]) reports on the development of a 'walking bus' scheme in Bromley, London. He notes that the 'walking bus' has been effective in encouraging parents to switch from using cars - 63 per cent of the children in the scheme were previously taken to school by car. It has been calculated that the Bromley scheme reduces car journeys by 34,000km per year, an equivalent of a 7.5 tonnes per year reduction in carbon dioxide emissions. Mackett (2001) also found that 'walking buses' had an impact on car-travel, with 50 per cent of trips by 'walking buses' replacing car trips. However, he notes that many parents would still make trips (for example, journeys to work), so the reduction in traffic and congestion is likely to be small and localised. It is possible that some trips may be made at a different time than 8.30 am, potentially reducing congestion. However, this possibility was not explored.

Barker (2003[†]) also described park-and-walk schemes (where parents drove to pre-designated parking sites, up to 0.5 miles from the school, and walked the remainder of the way with their children) were enjoyed by children because they could spend more time with their friends. One child described an incentive where children had cards that were stamped when they used the park-and-walk, with completed cards permitting free entrance to the swimming pool.

Other Initiatives to influence travel to school

Granville et al., (2002) reports parents' and children's assessments of various travel initiatives in schools. Pedestrian training (road safety training) was valued by parents and children. Escort schemes (for example, 'walking bus') had mixed reactions. They were not popular among secondary school pupils or their parents, but parents of primary school children were more in favour. There was a mixed reaction to traffic calming: while it may slow the traffic down, it did nothing to reduce traffic volumes.

Gilhooly and Low (2005) comment on the effect of an intensive week of green transport education at one school in their study. For 5-10 year olds there was no effect, and for 10-12 year olds only a short term effect on travel to school.

Initiatives to improve transport for young people

A range of initiatives have been described in the literature, focusing on either improving the availability of transport to young people to enable them to access opportunities, or on bringing services in to areas with poor transport links.

There are several examples of schemes which aim to provide vehicles and/or training to young people, to help overcome barriers to accessing education and employment, including the 'Wheels to

Work' programme (The Countryside Agency, 2005)² which provides scooters and training at low cost to young people in rural areas.

Other initiatives have addressed cost, such as the 'Kids for a Penny' scheme in Trent (SEU, 2003) which allows very low cost travel at off-peak times during the week and throughout the weekend. Transport subsidies have been piloted as part of the Education Maintenance Allowance. The evaluation of this initiative suggested that the EMA(T) did not have a strong impact: it was associated with higher levels of bus use and with a small but non-significant increase in participation in further education, but did not lead to students travelling further afield for further education (Perren et al., 2003a).

The DEFRA report 'Transport, young people and rural areas' (2004) describes a series of case studies illustrating how young people have been involved in creating local transport solutions, mainly to address problems in accessing social and leisure activities. These include the provision of mobile youth centres, buses to transport young people to youth centres, and taxi tokens to give young people more flexibility and independent travel (see also Countryside Agency, 2005).

Titheridge (2004) uses statistical modelling to explore potential initiatives to improve access to employment, further education and IT services in the Forest of Dean. She finds that a vehicle club scheme (a form of car sharing) improves the models the best, followed by demand-responsive transport (for example, dial-a-ride).

² Countryside Agency (2000). Two wheels work: A good practice guide for developing and implementing Wheels to Work schemes. http://www.countryside.gov.uk/Images/CA%20108%20-%20Two%20wheels%20work_tcm2-11925.pdf

2.9 What Would Make a Difference?

Travel for education

The Department for Transport (2002) found that around 65 per cent of parents would prefer not to drive their children to school, and the CfIT report (2002[†]) found that, although parents in higher occupational class groups were more likely to drive their children to school, they were also far more likely to believe that school children should not be taken to school by car, but should walk, cycle or use public transport.

The *AA Foundation for Road Safety Research* (2000[†]) found that around 60 per cent of parents who drove their children to school felt that measures could be introduced that would enable them to stop using their car for the school run, although parents of primary school children were more likely to say that nothing would influence their car use. Parents of secondary school children were most likely to suggest improvements in public transport. The CfIT report (2002[†]) found that 32 per cent of parents who took their children to school by car said that dedicated school buses would make them consider using their car less. Sixteen per cent said that they would consider not driving children to school if safer walking routes were available, as would 13 per cent if the journey time on public transport was similar to that by car. However, 32 per cent of the parents who took their children to school by car said that nothing would induce them to change. The *AA Foundation for Road Safety Research* (2000[†]) noted that barriers to alternatives other than driving children to school may be complex and that overcoming one barrier (for example, addressing road safety concerns by providing safe walking routes to school) may lead to another barrier becoming salient (for example, fear of abduction).

Walking and cycling

Parents who wanted improvements in walking to school suggested safe walking routes and safe crossing facilities as top priorities, and safe cycling routes, secure bike storage, and cycle training were prioritised to improve cycling to school in the *AA Foundation for Road Safety Research* (2000[†]) study.

Martin et al. (2004[†]) recommend 'safer routes for children' - not just 'safer routes to school' - to incorporate routes to leisure facilities and other services used frequently by children and young people. Barnardo's (2004[†]) also emphasise the importance of safe walking and cycling routes, and propose that local transport plans should include strategies for improving children's safety, for example, through traffic calming and reducing car use. Gilhooly and Low (2005) also suggest that traffic calming measures on roads near schools could reduce road safety concerns.

Public transport

A specially provided school bus was the top priority for parents in improving public transport to schools (*AA Foundation for Road Safety Research*, 2000[†]), followed by a good public bus service. With increasing distances being travelled to primary schools, school buses may offer a valuable alternative to car-travel (Gilhooly and Low, 2005).

Overall, attitudes to school buses tended to be positive, but it was seen important by parents and children that travel by school bus was convenient, reliable and safe. School buses have the advantage that children are not travelling on public transport during the commuter rush, which would help to reduce overcrowding. A seat for every child, seatbelts, and a no smoking policy were rated as the most important features of a school bus service (DfT, 2002). Gilhooly and Low (2005) also comment that providing school buses with supervision would address children's and parents' concerns about rowdiness and bullying. Additionally, the *AA Foundation for Road Safety Research* (2000[†]) also point to the need to address the issues of cost associated with using public transport.

McWhannel and Braunholtz (2002) recommend the adoption of an American-type 'yellow bus' scheme. The potential advantages of such a scheme would be the provision of supervised transport and safety (for example, in the US, cars are not allowed to pass a yellow bus if it is parked, thus

reducing risks to disembarking children). This scheme has been piloted with mixed success, as described above (*Steer Davies Gleave*, 2003).

The Social Exclusion Unit (2003) recommend that new home-to-school transport entitlements should be piloted so that children could benefit from equal access to specialist or faith schools, or schools offering alternative curricula.

Steer Davies Gleave (2002) call for Local Education Authorities' responsibilities for travel provision for FE students to be clearer and more consistent. FE students should be provided with a statement explaining their rights in terms of travel provision. MVA Ltd (2003[†]) suggest that, in London, information about FE travel and student support is provided in leaflet format, to be made available at bus, tube and train stations, although it could be argued that information could be better targeted at students, for example, through information packs given to new students at colleges. Alsop et al., (2002), argue for an increase in subsidised travel for FE and higher education students in rural areas.

Other measures

Granville et al. (2002) consider the fact that schools tend to start in the morning at about the same time as each other. This makes it difficult for parents of children attending different schools to get their children to their respective schools on time. This can underpin car use as the only method of getting children to school on time without arriving at school unnecessarily early. The authors suggest that, by co-ordinating and staggering the start times at different schools within an area, alternative travel arrangements could be encouraged. Also, by avoiding times of rush-hour traffic this could alleviate some of the concerns about traffic danger which serve as a disincentive to alternatives to car-travel to school. Parents in the AA Foundation for Road Safety Research (2000[†]) study also supported this suggestion. However, this approach has been piloted (*Atkins* 2000[†]) with mixed success.

The provision of before- and after-school facilities was supported by parents, as were the organisation of car-pooling, and a ban on parents dropping off or picking up children at the school gates (AA Foundation for Road Safety Research, 2000[†]).

Improving transport for children and young people in rural areas

Dibben (2003) recommends that local authorities extend subsidised bus services in rural areas. She also discusses the promotion of 'taxi-bus' services and volunteer-provided community services. Cartmel and Furlong (2000) note that youth travel subsidies (particularly for unemployed young people) may help to reduce the barriers to using buses experienced by many young people in rural areas, and Storey and Brannen (2000) call for free transport to further education. Alsop et al. (2002) call for more affordable and regular bus services in rural areas, including the provision of night buses.

The need for outreach services (such as health and educational services) was noted as important for young people in rural areas (Storey and Brannen, 2000).

Cartmel and Furlong (2000) also suggest that driving lessons should be provided at school or through the New Deal for young people in rural areas in order to improve their employment opportunities. The lack of public transport options for young people in rural areas might mean that they are excluded from jobs which require them starting work at a fixed time. For this reason, the authors also advocate the adoption of 'flexi-time' policies in the workplace in order to improve the opportunities of young people in rural areas who are dependent on public transport.

3. Diverse Experiences of Mobility in Adulthood: General Findings, Low Income, Ethnicity and Rural Communities

3.1 Summary: Similarities and Differences in Adults' Mobility

This is the first of three chapters to examine mobility among working-age adults. Continuing the 'life-course perspective' introduced in Chapter 2, the literature shows that when people move into adulthood they are likely to share some broadly similar mobility needs. As well as trips for leisure, these needs can be understood to derive largely from the responsibilities acquired in adulthood: the need to travel to employment, the need to escort children to childcare services and school, the need to shop for the household and undertake household business.

However, adults are hardly a homogenous group. This chapter notes, for example, how younger adults (aged in their 20s to 50s) are, with age, increasingly less likely to visit friends and more likely to use a car, while older adults (aged 50+) are more likely to visit friends and less likely to use a car. Moreover, after outlining the general findings for working-age adults, the chapter goes on to consider specific findings for some social groups with distinct mobility issues. Although working-age adults might share similar transport needs, in the broadest possible terms, it is clear from the literature that they do not necessarily share similar transport experiences. Adults on low income are less likely to have access to private vehicles and more likely to be dependent on - and vulnerable to problems with - local public transport. The cost of public transport can be a particular difficulty for people on low income, though lack of available, adequate services is a greater obstacle. Adults from black and minority ethnic groups are more likely to depend on public transport than white adults. For some of these adults, fear from racial attacks on public transport can represent a key obstacles to mobility. In contrast, adults in rural areas are more likely to own and use private transport. For many in rural areas, the limited provision of public transport meant that car-ownership was essential in order to access everyday opportunities and services and thereby avoid social exclusion.

3.2 Selected Key Findings

- Adults' travel needs fall into four broad categories by purpose of travel: employment, 'escort' (for example, taking children to school), shopping and personal business, and leisure trips. A broadly similar number of trips were made in each category (DfT, 2005b).
- Eight per cent of adults used public transport at least four days a week, and 12 per cent used it daily, while two-thirds reported daily or almost daily use of a private car (BMRB Social Research, 2004). Younger adults are more likely to own cars than older adults, and car-ownership tends to increase the distances people travel.
- Most adults use a variety of transport modes in order to meet different transport needs; only 11 per cent of car drivers claimed they could not have used any other transport mode for any of their journeys (Stradling, 2005). However, Barker and Connolly (2005) found that 41 per cent of the car journeys reported by adults could not have been made by public transport.
- The literature suggests strong public support for developing public transport. Seventeen per cent of people felt that improvements in public transport would make it easier for them to get the job they wanted and 29 per cent said it would have an impact on their social life (CfIT, 2002[†]). There was also some resistance to increasing public transport use and reducing car use.
- The factors mediating public transport use, include a range of services and journey-times, the quality and perceived safety of facilities, and cost. In 2002/2003, about one-fifth of households in England without access to a car reported some difficulty in accessing doctors and supermarkets, while 95 per cent of car-owning households said it was easy to access these services (DfT, 2005a).

- Adults in lower socio-economic groups use public transport more frequently than those in higher socio-economic groups (BMRB, 2004). Affordability is a particular, though not dominant barrier to public transport for people on low income. Less than five per cent of households in the 1999 Poverty and Social Exclusion Survey said they could not afford to use public transport, compared to 25 per cent reporting non-use due to lack of availability. Lower income families were less likely to have a car if there was a frequent local bus service (Barker and Connolly, 2005). Dargay and Hanly (2002) found that, over time, higher income bus users were more likely than lower income users to switch from bus-use to car-use in response to increases in bus fares. Difficulties with transport can limit employment opportunities: the Department for Transport (2002b) found that 13 per cent of respondents of working-age said they had decided not to apply for a particular job in the last 12 months because of transport problems.
- Lower income families were less likely to have a car if there was a frequent local bus service (Barker and Connolly, 2005).
- Bus stops and bus times sometimes relate to out of date patterns of shopping and work, or to particular religious holidays, and do not reflect the transport needs of black and minority ethnic groups (DfT, 2003a[†]).
- Adults from black and minority ethnic groups depend more on public transport to travel to work than white adults (DfT, 2005a; Owen and Green, 2000). A third of Hindu, Muslim and Sikh organisations reported discrimination of their members on public transport (Weller et al., 2001[†]). A quarter of young people from black and minority ethnic groups experienced harassment due to their colour, race or religion, on public transport (DfT, 2004b[†]).
- Adults in rural areas are more likely to own and rely on private transport than those in other areas (Dargay, 2002; Echenique and Homewood, 2003; Gray et al., 2001; Stratford and Christie, 2000). Only 51 per cent of rural households are within a 13 minute walk of a bus stop with at least an hourly service, compared with 96 per cent of urban households (Department for Transport, 2005a). Transport difficulties in rural areas are associated in the literature with problems accessing work, learning, healthcare, shopping and other services.

3.3 Why do Working-Age Adults Travel?

Trips taken by adults fall into four broad categories by purpose of travel: employment (or other 'compulsory' trip), 'escort' (i.e. accompanying someone else, such as taking children to school), shopping and personal business, and leisure trips (DfT, 2005b). Although a similar *number* of trips were made in each category, *distances* travelled vary for a number of factors. In terms of travelling for employment, for example, McQuaid et al., (2001) found that manual workers and people with high educational levels and highly specialised skills were most likely to be prepared to travel longer periods to work, while women and those with dependent children were least likely to do so. Overall, however, journeys for leisure were longest and accounted for 41 per cent of the total distance travelled. Long distance journeys (i.e. over 50 miles) were most commonly travelled to visit friends and family, go on holiday or day trips or for commuting or business travel (Office for National Statistics, 2005). The Department for Transport (2005a) notes that the number of trips to visit friends declined for people between the ages of 21 and 49 for men and women but increased again once they reach their 50's.

3.4 What Modes of Travel do Working-Age Adults Use?

Eight per cent of adults used public transport at least four days a week, and 12 per cent used it daily (BMRB Social Research, 2004). The literature tends to investigate differentiated use of public transport in adulthood in terms of income groups, and this is considered further below. Barker and Connolly (2005) analysed adults' travel diaries to look at whether the journeys recorded by private vehicle realistically could have been made by public transport. They concluded that 41 per cent of the recorded journeys could not have been made by public transport. Accent Marketing and Research (2002) found that 34 per cent of car drivers would have used the bus if their car had not been available when they made their journey.

BMRB Social research (2004) reports that two-thirds of respondents aged 25-54 years old reported daily or almost daily use of a private car. This dropped to 56 per cent amongst 55-64 year olds. Dargay (2001) observes two trends in car-ownership. First, car-ownership increases until the head of the household is aged in his or her early 50s, and then it declines. Second, for all ages, car-ownership is higher for more recent than for earlier cohorts (for example, people aged in their 50s now, are more likely to own cars than previous generations of people in their 50s). Hanly and Dargay (2000) found that previous car-ownership level is a strong predictor of current ownership.

Stradling et al. (2005) found that the average distance travelled by car exceeded significantly that travelled by bus. Car-travel was affected more by availability of private vehicles than by inaccessibility of public transport. That is, an increase in the number of cars in a household, increased the distance travelled by car to a larger extent than increases in walk-time to bus stop and reduction in frequency of bus service.

Anable and Gatersleben (2004) note that, when travelling to work, flexibility, convenience, cost and predictability were perceived to be the most important aspects of the journey. CfIT (2002[†]) found that those who travelled to work by car mainly did so for convenience, and nearly one-fifth of respondents thought there was no other option except to use their car. People who travelled to work by train did so because it was quicker, but those who travelled to work by bus tended to do so because of a lack of alternative options. In contrast to the finding above, people who drove to work said that they would continue to do so even if charged £5 a day, or an extra £5 a day, for parking.

More generally, Mackett (2003) found that drivers use cars for short trips for carrying heavy goods, for giving lifts (for example, taking children to school), for speed (in the context where respondents feel that they are short of time), and for convenience - where multiple tasks are undertaken or multiple destinations reached in the course of a single journey. Walking is seen as an alternative for very short trips and buses for longer ones, while taxis are convenient for social trips. Furthermore, Mackett (2000) reports that cycling is considered the least agreeable alternative.

Middle-aged British Household Panel Survey respondents were more likely to have access to bicycles than other age-groups, but were less likely to use them than older and younger groups (Wu and Hine, 2002). While most cyclists are men, a sharp growth in cycling has been largely attributed to the increase in women cyclists (Smith, 2005). Costley (2002) found that 72 per cent of adults in Scotland had never used a bicycle, 11 per cent cycled less than once a month, and nine per cent cycled at least once a week. The main reasons for using a bicycle were recreational rather than functional: 63 per cent said their main reason for using a bicycle was for leisure, and 20 per cent said the main reason was to keep fit and exercise. Cope (2003) reports similar findings with respect to the reasons why adults used the National Cycle Networks.

Costley (2002) also reports that in 2001, 43 per cent of bicycle journeys in Scotland were undertaken on main roads: of these, 36 per cent were on roads with no special provision for cyclists, two per cent were on main roads with bus lanes and five per cent on main roads with cycle lanes. The use of the National Cycle Network is growing: 201 million trips were made on the Network in 2004, an increase of 11.6 per cent from 2003 (Sustrans, 2004). Cyclists travel 2.3 miles on average on the on-road sections of the Network, compared to five miles on urban traffic-free sections. Similarly, Lumsdon (2003) reports a wider user profile of the Celtic Trail section of the Network (in South Wales), with higher proportions of lower income households now using the route.

3.5 Travel Attitudes: General Findings

Attitudes to cars and public transport

The main thrust of the literature addresses the relative importance of car use for adults over public transport and the fact that, as Crockett and Hounsell (2005) highlight, adults tend to associate convenience of travel with the ability to carry out door-to-door journeys and with private transport.

On the one hand, DEFRA (2002) report that two out of five respondents with access to a car said they regularly and deliberately used alternative modes to car on short journeys. Stradling (2005) reports that most people use a variety of transport modes in order to meet different transport needs, and only 11 per cent of car drivers claimed they could not have used any other transport mode for any of their journeys.

On the other hand, Green and Stone (2004) found that although many drivers understand that not all their journeys have to be made by car, they still rely on it as a matter of habit. Thorpe et al., (2000) report that even those car users who understand the environmental impact of driving perceive the car to be essential to their lifestyle. Ellaway et al., (2003[†]) argue that those with access to a car appear to gain more psychosocial benefits (mastery, self-esteem, feelings of autonomy, protection and prestige) than public transport users. Hiscock et al., (2002) similarly found that (unlike public transport) cars provide a sense of protection, autonomy and prestige.

URS Thorburn Colquhoun (2000) found that the car met respondents' needs for comfort, convenience, flexibility and immediate use better than any other alternative, while car-running costs did not outweigh the benefits of car usage. Similarly, Transport and Travel Research (2002) reports that car dependent respondents prefer cars because of concerns with public transport reliability, convenience, comfort and safety, long walking distances to bus stops and train stations, and lack of information about timetables and fares. Anable (2005) found that even motorists disillusioned with car use and aware of its environmental impacts believe there are too many obstacles to change their transport habits.

However, the literature suggests strong public support for developing public transport. Seventeen per cent of people felt that improvements in public transport would make it easier for them to get the job they wanted and 29 per cent said it would have an impact on their social life (CfIT, 2002[†]). Anable and Gatersleben (2004) found that public transport was seen as the alternative to car use by 76 per cent of car users, compared with 19 per cent who saw cycling as an alternative and six per cent who identified walking as an alternative. The Department for Transport (2004a) found that public transport was widely recognised as a priority for investment in order to reduce congestion, and that

respondents would be prepared to use public transport more and to pay slightly more if it were improved. BMRB Social research (2004) found that, when considering improvements required for transport as a whole, respondents most frequently referred to improvements in public transport. Respondents in the 2001 Survey of Public Attitudes to Quality of Life and to the Environment supported the provision of more reliable public transport by government, making public transport cheaper, increasing pedestrians-only zones and cycle paths, rewarding cars with lower CO2 emissions and tightening MOT testing for emissions standards (DEFRA, 2002). Jones et al., (2005) found that the British Social Attitude Survey respondents were more supportive of improvements in public transport than roads and would like to see car-use reduced, although not as a result of increasing motoring costs.

Thirty-four per cent of the public said they would travel less by car if local bus services were better, but over half of those who would use cars less said that the bus frequency would have to be improved *before* they would use them. Another stipulation for reducing car use was that public transport fares should cost no more than travelling by car (CfIT, 2002[†]). Mackett (2001) estimates that improving bus services (for example, route pattern and frequency) would attract 21 per cent of car drivers to bus for short trips. Wardman et al., (2001[†]) report that to enhance satisfaction of users, services had to be more frequent and reliable, with good connections to improve the quality of service interchange. Lyons (2003) found that passengers are not 'put off' by the need to make an interchange in itself but because of uncertainty about connections and lack of information about what the transfer would involve.

The literature also considers adults' attitudes to measures aimed at reducing car use. Green and Stone (2004) report that road tax does not prevent motorists from driving, though it might deter those on low income from buying a car in the first place. Nevertheless, fuel tax can make some motorists drive less in order to save money. (Some also felt that road tax should be completely substituted by fuel tax, which was seen as fairer as it reflects the intensity of car usage). Exley and Christie (2002) observe that car users are more sensitive to petrol prices than to road pricing: nearly one-half of respondents would use their cars less if a congestion charge was introduced, compared to nearly two-thirds who would do so if petrol prices doubled over the next ten years (although these figures varied depending on extent of car use, income, and availability of alternative means of transport). The authors argued both that there is more opposition to general measures affecting all drivers than to targeted ones, and that more people were in favour of 'carrot' approaches that would make public transport more popular rather than 'stick' approaches that would make motoring more costly and inconvenient.

Nevertheless, the literature on adults' attitudes towards transport suggests that there would be a limit to the impact of improving public transport, and to the efficacy of efforts to reduce car use. For example, statistical modelling by Wardman and Tyler (2000) suggests that improving the accessibility of inter-city rail services will only have restricted impact on increasing demand, though any improvements would benefit existing users. Geeson et al., (2002) reports that urban shoppers relied primarily on cars and, although some cited initiatives to make public transport more attractive, they tended to be resistant to modal change. The CfIT (2002[†]) found that people who drove to work said that they would continue to do so even if charged £5 a day, or an extra £5 a day, for parking. Exley and Christie (2002) report that although 65 per cent of British Social Attitudes 2001 respondents said that greatly improving the reliability of local public transport would make them reduce their car use, over eight in ten said it would be very or fairly inconvenient for them to use their cars less. The authors suggest that reducing car dependency in Britain will be difficult no matter how much public transport is improved.

Attitudes towards other travel modes: alternative vehicles, cycling and walking

There is little research into alternative private motorised vehicles. Guthrie (2002) studied the attitudes of car drivers to covered motorbikes, mopeds, electric bikes, and half-sized cars (for example, Smart car) and found the latter to be most popular: around one-fifth of drivers said they would buy one. Objections to alternative private vehicles included safety concerns, luggage and passenger carrying limitations and lack of weather protection. Guthrie also surveyed electric bicycle users and found that

around two-fifths of users had switched from using cars to using electric bikes. In contrast to conventional bicycles, electric bicycles were used principally for utility rather than recreation. Guthrie argues that it would be beneficial and possible to attract motorists to these alternative forms of private transport.

The Department for Transport (2003b) found that over one-half of respondents used a car to make journeys within walking or cycling distance. Despite this, over 90 per cent of those surveyed felt that people should be encouraged to walk to help their health, help the environment and ease congestion. Slightly fewer respondents felt the same way about encouraging cycling, although at least 87 per cent agreed it would help their health, 79 per cent agreed it would help the environment and 73 per cent agreed it would ease congestion. Improved walking routes were more likely to prompt car users to consider not using cars compared with improvements to cycle routes. This is possibly a result of fear of cycling: almost three-quarters of adults agreed with the statement 'the idea of cycling on busy roads frightens me'. Nevertheless, about a quarter of car users said they would cycle more if congestion charging was introduced, and a similar proportion would cycle more if car parking was more expensive or difficult (DfT, 2003b). Costley (2002) asked respondents who had cycled in the last 12 months what, if anything, would encourage them to cycle more frequently: a third answered that nothing could encourage them to cycle more but a fifth said that an increase in cycle paths or routes would promote bicycle-use. Similar findings are reported in CfIT (2002[†]).

3.6 Barriers to Travel: General Findings

Barriers to public transport

In a local study of barriers to bus use, Wixey et al., (2005) found that respondents did not necessarily use their nearest bus stop, but might use another bus stop if it has better shelter/seating facilities, wider choice of services and is located in a safer and better lit area. In terms of safety, a local study in Middlesbrough found that general improvements in safety perceptions (as a result of various local interventions) did not immediately lead to increased bus use, especially when people still had negative views of service reliability and quality (Transport Studies Group, 2004). The Welsh Consumer Council (2004) analysis of the Welsh Omnibus Survey found that local bus services in Wales did not meet people's travelling needs at night and on weekends, especially with regard to accessing local hospitals.

Users of public transport reported that carrying luggage presented a problem when using public transport and made travelling exhausting and stressful (Hine and Mitchell, 2001). Furthermore, the necessity to make service interchanges - which are often perceived negatively due to delays and lack of information - deters car drivers from using public transport and limits its use amongst public transport consumers (Hine and Scott, 2000).

Derek Halden Consultancy (2003b) identifies journey time, cost and the limited geographic coverage of the rail network as the main barriers to the shift from car to rail, while length of travel time is the main barrier to bus use. The study argues that improving the environment of bus stops and train stations, increasing safety at bus stops, providing information at bus stops, and maintaining larger train station car parks are top priorities for making alternatives to cars more attractive.

Barriers to driving

Some of the most common problems motorists face have to do with congestion (and resulting stress and delays), increasing costs of parking, the behaviour of other drivers, poor road condition and traffic management, ineffective speed limits, navigation, and bad weather (DfT, 2001). Congestion is perceived as causing delays, frustration, stress and unpredictable journey times (Green and Stone, 2004).

Barriers to walking and cycling

Ravenscroft et al., (2002) report that the effectiveness of walking and cycling routes in promoting sustainable development depends on allaying users' concerns about the safety of using them. Focus group analysis indicated that people have a heightened risk perception in public spaces, independently of whether they actually experienced any trouble. The literature specifically identifies the perceived danger of other traffic as a key barrier to cycling (Costley, 2002; Geeson et al., 2002). Other barriers recorded by Dickinson et al., (2003) include distance from workplace, the requirement on people to drive company cars for work reasons, strict workplace dress codes (unsuitable for cycling in) and, for women, personal security.

3.7 Mobility and Social Exclusion: General Findings

In terms of the general working-age population the literature tends to focus on the risks of social exclusion associated with difficulties accessing healthcare, shopping and services, and opportunities for social participation.

Lack of access to a private vehicle was cited often as a potential trigger for social exclusion. In 2002/2003, about one-fifth of households in England without access to a car reported some difficulty in accessing doctors and supermarkets, while 95 per cent of car-owning households said it was easy to access these services (DfT, 2005a). The Welsh Consumer Council (2005) reported similar findings for Wales. Thirty-four per cent of the 2001 ONS Omnibus Survey respondents said that they had difficulty getting to one or more local facilities, most of whom cited inadequate public transport as the

reason, while 15 per cent said they had problems getting to hospital (DfT, 2002b; see also Wixey et al., 2003). Shipman et al. (2001) found that lack of transportation was a barrier to attending out-of-hours primary care centres. This was a particular problem for those dependant on taxis, who could face high costs. In a national review of Local Transport Plans (LTPs), 49 per cent of LTPs identified problems with patient access to health services. One reason for this was an assumption that private transport would normally be available (Hamer, 2004). In a consultation with patients in Cornwall, Cornwall Community Health Council (2000) found that neither health providers, social services or councils felt responsible for ensuring transport to healthcare.

It seems that, while access to a vehicle can be important for accessing healthcare, people in poor health are less likely to have access to private transport. That is, Cummins et al., (2005) found that lesser access to private transport was associated (among other factors) with poorer self-rated health. Macintyre et al., (2001) also report that even after controlling for income, car access is significantly associated with general health (though not with chronic illnesses). Those with car access also show higher levels of self-esteem and life satisfaction, while public transport can have detrimental physical and psychological effects because it exposes travellers to the risks of bad weather and is perceived as stigmatising (Macintyre et al., 2000).

Lack of access to a private vehicle is also often cited in the literature in relation to accessing shops and services. Households without access to car were about twice as likely to report difficulties in accessing goods and services as households with cars (Ruston, 2002; see also DfT, 2005a; Hine and Mitchell, 2003). Households who were reliant on buses in England reported similar difficulties (Wixey et al., 2003).

Bridgwood et al., (2003) found that 14 per cent of female respondents in England and nine per cent of men said that lack of transport prevents them from attending cultural events, while Sturgis and Jackson (2003) report that access to a car is an important predictor of households' cultural and sports activities (those without access to a car were less likely to engage in cultural or sporting activities). In Wales, households without cars reported difficulties socialising, and accessing leisure and sporting facilities (Welsh Consumer Council, 2005). Wixey et al., (2004) reported similar findings in England.

3.8 Mobility and Low Income

Although adults on low income share the same broad travel needs as the general adult population, they are likely to have a disparate experience of accessing opportunities and services. The key theme here in the literature is that people on lower income are less likely to have access to private vehicles and more likely to be dependent on - and vulnerable to any problems associated with - local public transport.

What modes of travel do low income working-age adults use?

Social Exclusion Unit (2003) found that walking was the most frequently used mode of transport of people on low income. For households in the lowest income quintile who do not have a car, 58 per cent of their trips were on foot, compared to 17 per cent for high income households with a car.

The literature reports lower levels of car-ownership or access in low income households (DfT, 2005a; DfT, 2005b; Giuliano and Narayan, 2003; Hine and Mitchell, 2003; Barker and Connolly, 2005; Welsh Consumer Council, 2004; Froud et al., 2005[†]), in deprived areas in England (DfT, 2005a; see also Solomon, 2000[†]), and in deprived households in Scotland (Barker and Connolly, 2005). Lower levels of car access are also found in the lower socioeconomic groups in Scotland (Costley, 2002) and Wales (Welsh Consumer Council, 2004). Differences in car-ownership are also evident in tenure status: 94 per cent of home-owners had at least one vehicle, compared to 37 per cent of council tenants in England in 2003/2004 (Office of the Deputy Prime Minister, 2005; see also Atkinson and Kintrea, 2000).

A study carried out by BMRB (2004) shows that respondents in higher socioeconomic groups were more likely to report using public transport than those in lower socioeconomic groups: 87 per cent of

those in occupational groups A, B and C1 did so compared with 76 per cent of those in groups C2, D and E. People in social groups C2, D and E were more likely to report that they did not use buses because 'they did not need to travel much' compared to people in groups A, B and C1. However, those in higher socioeconomic groups who used public transport were less frequent users compared with their counterparts in lower socioeconomic groups: 37 per cent of ABC1 respondents used public transport less than once a month compared to 28 per cent of C2DE respondents (BMRB Social research, 2004). Dargay and Hanly (2002) found that, over time, higher income bus users were more likely than lower income users to switch from bus-use to car-use in response to increases in bus fares. Hine and Mitchell (2003) found a significant relationship between the mode used to travel to work and household income: people on higher income were more likely to drive to work, while lower income groups were more likely to rely on the bus. Bramley and Ford (2000) found that bus usage peaked among deprived lone parents and low income couples with children.

Even though people are less likely to own cars if they are on a low income, the costs of car-ownership do not prevent car-ownership in the context of inadequate public transport. Barker and Connolly (2005) note that households on low income (less than £10,000) showed lower levels of car-ownership (37 per cent) if they had access to a frequent bus service (one at least every ten minutes) compared to low income households who had to wait more than an hour between buses (93 per cent car-ownership). Froud et al., (2005[†]) comment that motoring is no longer segregated into rich users and poor non-users, but rich new car users and third-hand car users who have little choice but to run a car.

Travel attitudes among low income adults

Accent Marketing and Research (2002) found that 34 per cent of car drivers would have used the bus if their car had not been available when they made their journey. Those in the lowest income quintile would have been most likely to use the bus if the car was not available (51 per cent) and those in the highest quintile least likely (29 per cent), possibly because those in the lowest income quintile were most likely to know where to catch the bus (84 per cent) and which service to take (67 per cent) and those in the highest least likely (72 per cent knew where to catch the bus and 54 per cent which service to take).

Duffy (2000) found that bus services were more important to respondents in deprived areas compared with those in non-deprived areas, and that improving bus services was seen as a relatively greater priority in deprived areas compared to other areas. Respondents living in deprived areas were more likely to say they were satisfied with the local bus service than those in non-deprived areas, although in all areas, satisfaction with buses was low compared with other services. Similarly, the Department for Transport (2002a) notes that levels of satisfaction with bus services tended to rise as deprivation increased, and suggests that this is due to increased use - as users were more satisfied with buses than non-users - and possibly higher service provision in deprived areas.

Nevertheless, using focus groups in two areas, Wixey et al., (2003) found that users from disadvantaged backgrounds - in spite of differences by age, eligibility for travel concessions and degree of personal mobility - shared similar criticisms of public transport, including cost of travel, lack of services to access key areas, frequency and reliability of services, and lack of public transport information. Based on a study in South Yorkshire, Salveson et al., (2001) identified similar concerns among disadvantaged groups, and reported that 50 per cent of respondents thought public transport was expensive (see also Solomon, 2000[†]).

Barriers to travel

Froud et al., (2005[†]) reports that 29 per cent of the poorest fifth (quintile) of their survey ran cars on a gross income of £105 per week and spent 35 per cent of their annual income on motoring. In comparison, the richest fifth had a gross income of £1,174 per week and the 95 per cent who ran one or more cars spent less than ten per cent of their annual income on motoring. They also observed that the motoring costs of the households with the top two-fifths of income are more likely to be subsidised by their employers. Low income households find the cost of petrol particularly difficult to afford. This is exacerbated because, due to the age of the cars they purchase, they are excluded from

many of the current fuel efficient choices available to the households with the top 40 per cent of income. As a result low income households that have cars often restrict their mileage to reduce petrol costs.

For households without cars, the availability and adequacy of public transport can represent a barrier to opportunities and services. For example, Welsh households without cars were asked if bus services met their needs to various destinations, or at various times, including into the local town centre, to hospital (as a patient or visitor) and travelling at night. The most positive response was to travelling into the town centre, but only 38 per cent of households said that their needs to travel to the town centre were met by bus services, and only eight per cent felt that buses met their needs when travelling at night (Welsh Consumer Council, 2004).

Similarly, Bramley and Ford (2000) found that, although cost could restrain the accessibility of bus services for lower income families, it was less of a barrier to public transport use than a lack of available, adequate services. For example, less than five per cent of households in the 1999 Poverty and Social Exclusion Survey said they could not afford to use public transport, compared to 25 per cent reporting non-use due to lack of availability.

Solomon (2000[†]) suggests that those who experienced the most difficulty affording public transport were working people on low income because cheaper tickets were rarely available at the times they had to travel. Solomon (2000[†]) also notes that people on low income had low uptake of weekly tickets, even when this would have worked out the cheaper option over the week, and this seemed to be because they found it difficult to part with a larger 'up front' sum.

Adults on low income, mobility and social exclusion

Difficulties with transport can limit employment opportunities. The Department for Transport (2002b) found that 13 per cent of respondents of working-age said they had decided not to apply for a particular job in the last 12 months because of transport problems. The rate was higher in low income areas compared to more prosperous areas, and among respondents in large urban areas compared to rural areas or small urban areas. Hine and Mitchell (2003) and Accent Marketing and Research (2002) report similar findings.

Lack of transport reduced employment opportunities for jobseekers in deprived areas of Scotland (Hine, 2004a[†]; Lindsay et al., 2003). Similar findings emerged with respect to South Tyneside (Transport Operations Research Group, 2005), South Yorkshire (Batty et al., 2002; see also Salveson et al., 2001), England (Solomon, 2000[†]) and Wales (Atkinson et al., 2002; Baker et al., 2005; Welsh Consumer Council, 2005). The Welsh Consumer Council (2005) noted that those working at unusual hours, for example, shift workers, could experience extreme problems travelling to work if they did not own a car. Solomon (2000[†]) reports that some shift workers had to use taxis to get to work.

Even when public transport is available, costs can limit unemployed people's ability to obtain a job. In addition, it can be hard to afford public transport when entering employment because of delays between the last benefit payment and the first pay cheque (Wixey et al., 2003). Solomon (2000[†]) found that in addition to concerns about the cost of transport, unemployed people also reported problems with the routes, timings and reliability of buses which impeded their access to employment. A number of unemployed people reported that various employers discriminated against people from certain areas. One of the reasons for this was because the transport routes from those areas were known to be inadequate or unreliable.

Many low income households with access to a car still had to weigh up the additional income available from work and the costs of using a car to access the job. For this reason Froud et al., (2005[†]) conclude that even with a car, the employment opportunities of low income households can be restricted.

3.9 Mobility and Ethnicity

Public transport planning in the UK has not necessarily kept pace with changing local communities, leaving some of the needs of black and minority ethnic groups unmet.

The literature on mobility among adults from black and minority ethnic groups highlights the fact that they are more likely to depend on public transport than white adults, and that fear from racial attacks and difficulties with language represent barriers to public transport use.

Travel needs of black and minority ethnic groups

Public transport services often do not reflect the travel patterns and needs of changing local communities. Bus routes are often radial, focused on town centres. This can often have an unintentional discriminatory effect given the location of many ethnic community shopping and other facilities. Bus stops and bus times sometimes relate to out of date patterns of shopping and work, or to particular religious holidays, and do not reflect the transport needs of the wider community (DfT, 2003a[†]).

What modes of travel are used by adults from black and minority ethnic groups?

The Department for Transport (2005a) reports that people in households of black origin are least likely to have access to a car or to travel to work by car. Although slightly more households of Indian origin (45 per cent) reported having a car than White British (44 per cent) or White Irish households (39 per cent), persons of white origin were more likely to travel to work by car than Indian, Pakistani or Bangladeshi people. Owen and Green (2000) also found that people from black and minority ethnic groups depend more on public transport to travel to work than others. Rajé et al., (2003a; 2003b; 2002) report that Asian respondents in Bristol and Nottingham travel half the average distance of white respondents, though both groups travel a similar number of trips.

Barriers to travel for adults from black and minority ethnic groups

For people from black and minority ethnic groups fear from racial attacks and difficulties with language represent barriers to public transport use. The Department for Transport (2003a[†]) notes that for minority ethnic and faith groups, fear for personal safety - particularly from racial attacks - can be a barrier to using public transport. This fear extends when walking to, and waiting at, bus stops or in train stations. This is exacerbated because language difficulties can mean they are unable to access the travel information which can help with planning safer journeys. More than one-third of Hindu, Muslim and Sikh organisations reported that their members had been discriminated against on public transport (Weller et al., 2001[†]). Similarly, Chapter 2 reported the finding that 23 per cent of young people from black and minority ethnic groups experienced harassment due to their colour, race or religion, on public transport (DfT, 2004b[†]).

Adults from black and minority ethnic groups: mobility and social exclusion

Adults from black and minority ethnic groups share with adults on low income the problems of accessing employment opportunities without a private vehicle. Patacchini and Zenou (2005) show that the higher levels of car-ownership of white jobseekers resulted in more job-search activities among white jobseekers than among those from black and minority ethnic groups. Car-ownership, however, is more clearly attributable to income rather than ethnicity.

Perhaps more specifically relevant here is, arguably, an institutional exclusion of people from black and minority ethnic groups from accessibility planning. The Department for Transport (2003a[†]) reports that public transport providers have inadequate understanding of the transport needs of minority ethnic and faith communities. They are often left out of consultation and customer care surveys, and complaints procedures are often effectively unavailable due to language difficulties.

3.10 Mobility and Adults in Rural Areas

The dominant theme in the literature about working-age adults in rural areas was their full dependency on motorised transport to access everyday services and facilities. Given the limited provision of public transport for many in rural areas, this often meant that car use was essential to avoid social exclusion.

What modes of travel are used by adults in rural areas?

Stratford and Christie (2000) report that rural residents relied on cars more than on public transport, and were more likely to own more than one car than urban residents. Dargay (2002) notes that car-ownership was higher in rural households compared with urban areas, for all age groups (see also DETR, 2000; Echenique and Homewood, 2003; NS and Department for Transport, 2005). Gray et al., (2001) found that households in remote areas of Scotland were more likely to be solely dependent on private vehicles than those in other areas. Farrington et al., (2004) found that two-thirds of car owners in rural areas felt it would be difficult or very difficult to access 'everyday services' without the use of a car.

Interestingly, Stratford and Christie (2000) suggest that urban and rural respondents do not differ significantly in rating the prospective inconvenience of cutting car use: 93 per cent of rural residents, 88 per cent of small town dwellers, and 91 per cent of city/suburban dwellers said it would be very or fairly inconvenient.

Dargay (2002) found that the level of car-ownership among rural residents is more resistant to increases in car purchase costs and fuel costs, than that among urban residents. The 'elasticity' of the rate of car-ownership to changing purchase costs is twice as high in urban areas than in rural areas, while changes in fuel costs have no significant effect on car-ownership in rural areas at all. This reflects the dependency of rural residents on car-ownership, in the absence of adequate public transportation. An implication here is that increases in car running costs have a more marked impact on rural households than urban ones because rural households have no alternative but to pay the extra costs.

Barriers to travel among adults in rural areas

The key barrier in rural areas is the restricted transport infrastructure. For example, the Department for Transport (2005a) reports that only 51 per cent of rural households are within a 13 minute walk of a bus stop with at least an hourly service, compared with 96 per cent of urban households. In remote rural areas of Scotland, only 15 per cent of respondents have access to bus services which run at least every half an hour and 17 per cent have services at their nearest bus stop running less often than every two hours (Buchanan, 2005). Cambridgeshire Rural Transport Partnership (2005) notes that the level of public transport service in rural Cambridgeshire appeared to depend more on the nearness to a main road than the size of the community. The Countryside Agency (2000) reports that despite the fact that public and community transport provision in rural areas increased by up to five per cent between 1997 and 2000, 29 per cent of smaller settlements still have no public transport service. Craig and Manthorpe (2000) found that one of the overwhelming concerns of rural Local Authorities was transport.

Adults in rural areas, mobility and social exclusion

Lack of transport for adults in rural areas can be a main trigger of social exclusion. Niggebrugge et al., (2005) argue that material deprivation in rural areas is substantially aggravated by poor geographical access to services, and appears worse than if only socio-economic indicators were taken into account.

The Scottish Central Research Unit's 2002 report on Rural Accessibility suggested that poor access in rural areas was felt most by people on lowest income. The report highlighted that social exclusion in rural areas is critically felt in relation to elderly and young people accessing services and limited leisure activities for all.

Transport and work

Lack of transport can reduce employment opportunities for jobseekers in rural areas. In the northern Highlands of Scotland, 41 per cent of jobseekers considered problems in assessing public transport to be an important barrier to work; 73 per cent of the long-term unemployed owned private transport in the context where jobseekers needed to be willing to travel 25 or more miles in order to access a reasonable range of employers (Lindsay et al., 2003). Baker et al.'s (2005) paper on the South Wales Valleys reported that half of the respondents in a regional study felt that transport problems were a constraint to work. Similarly, Moss et al., (2004) found that commuting distances constrain rural dwellers in their choice of employment, and so access to transport is crucial for finding and retaining employment.

Transport and learning

Cambridgeshire Rural Transport Partnership (2005) found that lack of transport was an accepted cause for the lack of opportunities for adult further education in rural Cambridgeshire. As a rule, evening classes were only accessible by car.

Transport and healthcare

Farrington et al. (2004) found that the centralisation of hospital services meant that healthcare has become particularly difficult to access for those living in rural areas (see also Brand et al., 2004). Brand et al., (2004) found that access to healthcare is complicated for those living in rural areas without cars, as they were likely to have to make several interchanges or rely on community services which often have time or coverage restrictions (see also Lovett et al., 2002). A national review of LTPs identified problems with patient access to health services, especially in rural areas (Hamer, 2004). The most widespread difficulties refer to poor public and community transport, limited access to specialist transport services, under-resourced community transport services, and parking problems. However, 48 per cent of all LTPs reported ongoing action to address these problems (Hamer, 2004).

Iredale et al., (2005) found that cancer patients in rural Wales had difficulties in accessing specialist services because of poor public transport, problems with using mountain roads and, for those without their own transport, dependence on others to drive them. Bain et al., (2000, 2002) found that patients in rural areas had further to travel to specialist cancer centres than those in urban areas, and had to make trade-offs between transport problems and perceived better care at specialist centres, whilst accepting transport problems as a feature of rural life.

Transport and shopping and other services

The decline in rurally-situated services (such as primary schools, post offices, supermarkets and petrol stations) and their re-location in urban areas has eroded the availability of key services in rural areas (Countryside Agency, 2004). Concerns about rural low income people's access to healthy food have been raised in White's (2003[†]) community study, which points to the unavailability of fresh fruits and vegetables in local shops and transport difficulties in accessing supermarkets.

More generally, Haynes et al. (2003) observe that people living in rural areas might not only be disadvantaged due to the distance to services, but also in terms of having a lack of choice of services. This can have a range of implications, including a potential lack of privacy when accessing personal health or welfare services from a sole provider for a wide rural area.

Craig and Manthorpe (2000) found that for Local Authorities in rural areas, provision of community care services was beset with problems both in getting users to services and in getting staff to users. Great reliance was placed on voluntary car or transport schemes, but some Local Authorities recognised that these were useful for 'one off' journeys and not for routine transport, and they were unable to provide a service to disabled people with higher levels of need. In some rural areas, weather conditions were also a problem because transport problems could be affected by extreme weather conditions.

3.11 Initiatives

Initiatives - general

Solomon (2000[†]) recommends that central and local government should consider transport as a part of all welfare provision. Solomon discusses a number of initiatives which are intended to address poverty and social exclusion, such as concessionary tickets, dial-a-ride schemes and schemes making use of community transport such as the Hackney PlusBus and the Rural Bus Service Grant for Rural areas.

Salveson et al., (2001) recommend offering detailed travel advice in targeted neighbourhoods to individuals returning to work. However, the efficacy of information services has been contested. On the one hand, Kenyon and Lyons (2003) suggest that enhanced travel information - specifically 'Integrated Multimodal Traveller Information', providing information across transport systems - could cause change in people's travel habits. On the other hand, Transport and Travel Research reports that pre-trip planning information on public transport would not affect people's modal choice. Indeed, Accent Marketing and Research (2003) reports that 62 per cent of respondents decide on the mode of transport for short, unfamiliar journeys *before* referring to information sources, as do 70 per cent for long journeys - typically meaning that people use a car without considering other options. Furthermore, of those car drivers who are very or fairly likely to use the 'Transport Direct' online journey planning service provided by the Department for Transport, 60 per cent said they would not change their car usage (MORI, 2001).

In terms of health, the 'Making the Connections' report (SEU, 2003) highlights the need for clarity and consistency in the eligibility criteria for use of the Patient Transport Service (PTS, a free non-emergency service) to ensure provision for those in most need. The report also reviews progress made by the Department of Health in increasing access to healthcare for deprived communities by reducing the need to travel through improvements such as Personal Medical services, by providing outreach services such as the District Nursing Service, and by allowing patients to book their hospital appointment at a time convenient to them. Hamer's national review of LTPs (2004) lists several initiatives to address the issues of accessibility of health care, including developing integrated public and specialist services to health facilities, voluntary car schemes and coordinating community transport, linking timing and booking of health appointments to transport services, and improving information about transport access to health services.

Barker and Conoly (2005, Scottish Household Survey) suggest that improving cycling facilities and improving walking routes would induce certain groups to cycle and walk more.

Initiatives - low income

Hine and Mitchell (2001) argue for increased targeting of subsidies and concessions on public transport for people on low income, particularly on journeys involving an interchange, and that targeting groups with particular needs would help them to overcome patterns of financial exclusion. In addition to generally enhanced public transport services, Barker and Conoly (2005, Scottish Household Survey) similarly propose reducing public transport fares through concessionary fares, government subsidies, and integrated ticketing.

What would make a difference? - black and minority ethnic groups

The CSR Partnership (2002b) suggest there is a need for more information in a range of languages including, for example, application forms for concessionary travel in different languages to help people from black and minority ethnic groups take up concessionary travel.

The Department for Transport (2003a[†]) suggests a wide range of initiatives aimed at ensuring that public transport provision meets the needs of minority ethnic and faith communities. For example, London Underground uses the skills of its staff who can speak other languages. West Yorkshire Public Transport Executive (PTE) and Greater Manchester PTE are using alternative methods of communication, including text messaging, email and intranet. Several organisations are using

translation software to improve the provision of information to non-English speakers and are also using telephone Language Lines and Information Shops to give travel assistance. Other ideas for good practice in this area include using websites with information in key languages used by local communities, and the provision by local authorities of 'welcome' packs (with transport information) to asylum seekers and new immigrants.

Initiatives - rural

Paul Beecham and Associates, and Sheffield Hallam University (2005) evaluated a wide array of 20 transport initiatives in rural areas, including generic bus services, community transport, minibuses, youth service buses, mobile police stations, shopmobility (provision of wheelchairs in town centres), volunteer driver and vehicle sharing schemes, and driver training and advice service initiatives. The authors conclude that a lack of hard data made analysis of the cost effectiveness of these initiatives difficult. However, they argue that the potential for cross-sector financial benefits (the impact of improved accessibility on, for example, reducing costs of employment benefits or social care) and qualitative findings about the positive impact of the initiatives on users' quality of life made a forceful case for the ongoing support of the initiatives.

4. 'Gendered' Mobility: Women, Men and Transport

4.1 Summary: Gender Disparity in Accessibility

This is the second chapter about mobility among working-age adults and focuses on gender. The literature offers some detail about men's and women's respective travel patterns. For example, it shows that men are more likely to travel for work purposes, and women make more social and personal business journeys. Many of the trips made by women in their 30s were escort trips (for example, taking children to school). It also reveals that women have lower levels of car access than men. Women are less likely to hold a driving licence than are men, although driving licence holding among women is increasing. However, women's transport needs often take second place to men's use of the car to travel to work. Women make fewer journeys than men, and tend to travel shorter distances. Women are more likely to travel by bus, foot or taxi than are men, and reliance on public transport is higher for women on low income, older women, lone parents and women with disabilities.

However, the emphasis in the literature is on women and their mobility needs and experiences. Research finds that, despite having lower levels of access to cars, women preferred to travel by car. Many saw a car as essential in coordinating employment, childcare and domestic responsibilities. Women often used their cars for short trips in order to manage these journeys. The time cost and complexity of travelling by public transport was a deterrent for many women. Women were more likely to feel safe when travelling by car than by public transport. Women generally did not see cycling as a viable mode of transport, primarily due to journey complexity and safety concerns, although women were more likely to cycle when larger numbers of people cycled in their local area.

Women experience similar barriers to other social groups in accessing public transport, with lack of accessibility, available services at appropriate times, security concerns and cost acting as barriers to travel. However, women also face specific difficulties associated with travelling with children, which related to long waits when services were unreliable, problems boarding and alighting, difficulties with long and complex journeys, and inability to afford transport, particularly in the case of low income mothers. Bus routes often did not meet women's needs to travel off-peak, and on non-radial routes. Additionally, women were more likely than men to have fears about personal security.

Arguably, an effect of these barriers is that women are more likely to experience transport-related social exclusion than men (Hine and Mitchell, 2003), and report more difficulty than men in accessing key services such as health services (Ruston, 2002). Women are more likely than men to have caring responsibilities, and parents with children face particular problems in coordinating transport responsibilities (for example, escorting children to school and travelling to work). While this is partly because of the difficulties of women with children accessing public transport, it is primarily because women have lower levels of car access than men, particularly women on low income, and those who are single parents.

4.2 Selected Key Findings

- 23 per cent of all men's journeys were work related, compared to 14 per cent of women's. Over a quarter of trips made by women in their 30's were 'escort' trips, typically escorting children to school (DfT, 2005a).
- 81 per cent of men hold a full driving licence, compared to 61 per cent of women (DfT, 2005a). Women are more likely to be reliant on public transport, walking, and taxis than men (DfT, 2004d; see also Scottish Executive, 2001; Finch et al., 2000; Reid Howie, 2000[†]). A lack of private transport and the costs of public transport makes low income mothers particularly reliant on walking as a means of transport (Bostock, 2001; see also Hine and Mitchell, 2003).

- Private transport is widely perceived among women as essential for co-ordinating home and work responsibilities (for example, DfT; 2005a; Dobbs, 2005; Jarvis, 2005). Public transport is often seen as a 'last resort'. Barriers for women to public transport include physically not accessing services when escorting children, unhelpful attitudes of public transport staff, inadequate services (reliability and routing), lack of information, and concerns over safety.
- Women with dependent children are the least likely among jobseekers to be willing to travel longer periods to access employment (McQuaid et al., 2001). Women's relative lack of access to private transport can limit their access to employment opportunities (Dobbs, 2005; Hamilton et al., 2000).
- Transport difficulties for women can impact on the accessibility of healthcare. Hamilton and Gourlay (2002[†]) report that 69 per cent of missed maternity care appointments were due to transport or transport-related factors. Low income mothers without personal transport have reported forgoing their own use of health services to ensure that lifts from relatives would be available for their children's health needs (Bostock, 2001). Transport difficulties have also been identified as obstacles for women in accessing social and leisure opportunities for themselves and their children.

4.3 Why do Men and Women Travel?

The literature suggests that travel needs vary for men and women. The Department for Transport (2005a) found that men were more likely to make work-related trips than women (23 per cent of all men's journeys were work related, compared to 14 per cent of women's), whereas women made more shopping trips than men and 14 per cent more personal business trips, i.e. trips to the bank, post office, library, church, playgroup, doctor or optician. Similarly, Mason and Prior (2005[†]) found that men were more likely to travel for work purposes than women, while women were more likely to travel to visit friends/relatives and for shopping trips. Wixey et al., (2004) found that men were slightly more likely to use the London Underground to get to work and education facilities, while women are more likely to use it to go shopping.

The Department for Transport (2005a) notes that, nationally, over a quarter of trips made by women in their 30's were 'escort' trips, typically escorting children to school (see also Reid Howie, 2000[†]). Women are more likely to hold primary childcare responsibilities within families, and their transport needs often revolve around the need to coordinate their own and their family's travel. For example, Dobbs (2005) analysed travel among women in the North East, and found there to be a heavy emphasis on travel for private or domestic purposes: escorting children and dependent relatives, and household shopping trips. Twenty-three per cent of women reported making these types of journeys at least five days a week, and 71 per cent at least once a week. Sixty-seven per cent travelled at least once a week to take part in civic or social activities. However, much of women's daily travel was about accessing employment, education or training. Fifty-two per cent travelled on five or more days per week to undertake paid work, and 76 per cent travelled at least once per week to undertake paid work.

4.4 How do Men and Women Travel?

Access to a car

During the 1990s travel patterns of women have changed dramatically. In particular, women are increasingly likely to hold driving licences and to have full access to a car (DfT, 2005a).

However, women are still less likely than men to own a car or to hold a driving licence. Eighty-one per cent of men hold a full driving licence, compared to 61 per cent of women (DfT, 2005a). Older women are much less likely to hold a driving licence than older men (see Chapter 6). Young women who did not drive were more likely to cite the cost of learning to drive as a barrier, than were young men (ONS 2005). Lone parent families have very low levels of car-ownership (DfT, 2005a).

Women are less likely to have *regular* access to a car than are men: Hine (2004b) found a statistically significant relationship between gender and car access, with men more likely to have regular car access than women (see also Reid Howie, 2000[†]). Dobbs (2005) found relatively high levels of access to private transport among women in the North East, with 87 per cent of women living in households with some access to private transport. However, she notes that women's access to private transport is often restricted by men's control over car-use in car-owning families, with women often being 'second in line for the car'. Seventeen per cent of women in the study could only access private transport if their partner/other household member did not need it, and 13 per cent had very limited or no access. Forty-five per cent of women, compared to 64 per cent of men described themselves as the main driver in the National Travel Survey (DfT, 2005a), although the percentage of women who described themselves as the main driver has increased since 1992/1994, when it stood at 34 per cent.

Travel patterns of men and women

Women and men have different travel patterns. According to the Road Users' Satisfaction Survey 2004/2005, 82 per cent of men usually travelled as a driver, compared to 64 per cent of women. Women are more likely to travel as a passenger: 75 per cent of those mainly travelling as passengers are women (Mason and Prior, 2005[†]). Among drivers, women tend to drive shorter distances than men: 29 per cent of men and ten per cent of women drive over 15,000 miles a year (Mason and Prior, 2005[†]). The average trip length as a driver for a man is 10.2 miles, and for a woman is 6.4 miles (DfT, 2005a).

Wu and Hine (2002) report similar findings from the National Travel Survey, also noting that these gender differences become greater as age increases. In terms of age, the Department for Transport (2005b) notes that among men most car journeys were made by those aged 30 to 69, while for women the peak age range for making car journeys was narrower at 30 to 59.

Women are more likely to be reliant on public transport, walking, and taxis than men (DfT, 2004d; see also Scottish Executive, 2001; Finch et al., 2000; Reid Howie, 2000[†]). Reliance on public transport is related to lone parenthood, among other variables (Reid Howie, 2000[†]). A survey of park-and-ride use in a single city found that 70 per cent of park-and-ride users were female (Finch et al., 2000).

Women tend to be more reliant on buses, but as the numbers of women who drive has increased, bus use among women has declined by 17 per cent, compared to two per cent among men, since 1989/1991. There are concerns that continued increases in women's car-travel may lead to reductions in some of the less profitable bus services, thus impacting on women without car access who rely on these services, such as older women and single parents (DfT, 2005a).

Dobbs (2005) explored travel to work, and found that 74 per cent of women travelled by car, 17 per cent walked, and 27 per cent travelled by public transport. Women with full access to private transport were most likely to use private transport to travel to work. Around 74 per cent of women with very good access to public transport still chose to travel to work by private transport. Although women are more likely than men to live near to their work (Wu and Hine, 2002), they are less likely to cycle to work (Dickinson et al., 2003).

While most cyclists are men, recent growth in cycling in London has been associated with a shift towards a more even balance of male and female cyclists (Smith, 2005).

4.5 Women's Attitudes to Transport Modes

Cars

Skinner (2003, 2005) emphasises the importance of fast and efficient modes of transport - such as cars or even bicycles - for successfully coordinating childcare, education and work. Coordinating employment and childcare was found to be particularly difficult for those women who worked part-time, lone mothers, and for women who had children in part-time early education. She found that working parents prefer cars to public transport as they perceive cars to ease the time pressures of such coordination, despite the fact that this may lead to more congestion and longer journey times generally. Jarvis (2005) also found that personal transport plays a crucial role in managing childcare and work.

Many women with children think a car is necessary to manage home and work responsibilities (DfT; 2005a; Dobbs, 2005). Dickinson et al., (2003) note that women tend to have shorter commutes to work, but are more likely to use their cars for short trips. This is likely to reflect the time constraints involved in managing work and family life, as well as personal security issues. Mackett (2003) explored the reasons that people gave for using cars for short trips. Two key reasons were giving lifts (for example, taking children to school), and for convenience - where multiple tasks are undertaken or multiple destinations reached in the course of a single journey. Women who combine childcare and employment or education may be particularly reliant on their car for trip-chaining. In Dickinson et al.'s (2003) study, significantly more women felt that they needed to drive to work in order to shop or escort children on their way to or from work. This supports findings reported in the chapter on children and young people, that a key reason for children travelling to school by car was that parents were dropping their children off on the way to work, education, or other activities.

Dobbs (2005) found that women, even those on low income, preferred to travel to work by private transport than other modes. Women in Dobbs' study felt that private transport was essential to allow them to negotiate the complex spatial links between home, childcare, and education, which were 'rarely close to each other'. Many women did not feel that public transport enabled them to make these complex journeys, and was not flexible or reliable enough to enable them to go where they needed to go or to respond to the hours and shifts available at work. Trip-chaining (for example, dropping children off at school before going to work) was common and made travel more complex, but also women felt constrained by the need to be at home in the morning or afternoon to carry out caring or domestic responsibilities. Reducing time away from home was often a priority, and this, coupled with the cost of childcare, meant that travel time was a key factor for women. Travel by public transport was seen by many women as too time consuming to fit in with the joint demands of work and domestic responsibilities (see also Skinner, 2003, 2005; Hamilton et al., 2000; Lucas et al., 2001[†]).

Women in Hamilton et al.'s (2000) study felt the car was more flexible, convenient, comfortable and cheaper than public transport, and better suited for multi-purpose and encumbered journeys. Bostock (2001) reports that mothers on a low income with pre-school children would choose the comfort and relative safety of travelling by car over walking with their children if they had the option.

Women with full access to private transport were more likely to say that they feel safe travelling during the day and at night than those without, and had broader travel-to-work horizons, being more likely to feel confident about travelling to new places and finding their way around (Dobbs, 2005).

Attitudes towards public transport

Hamilton et al., (2000) conclude from their focus group study that women only used public transport if they did not have any other option. Women tended to have negative views of public transport, feeling that buses were overcrowded, and unreliable, with poor waiting facilities and unhelpful staff.

However, women without cars were reliant predominantly on buses, and had to use them despite negative experiences. Women without cars, particularly those in rural areas or on low income, had to make choices not about how to travel, but whether to travel (Reid Howie, 2000[†]).

As described above, many women in Dobbs' (2005) study found public transport to be unsuited to their need for speed and flexibility in travelling to work. Dobbs also found that women referred to waiting at bus stops and travelling by public transport as making them feel isolated and vulnerable to attack, particularly in rural areas. Women who did not have access to private transport were much less likely to feel safe travelling in the day or at night than those who did.

Hamilton et al., (2000) note that reliance on public transport may have a negative impact on women's emotional well being, for example, stresses caused by having long waits after a tiring day, struggling to board buses with children and shopping bags, or feeling vulnerable when travelling at night.

Attitudes towards walking and cycling

Results from the ONS Omnibus Survey (DfT, 2005d[†]) found that most people (72 per cent) felt safe walking in their local street, however, women were less likely to say that they felt safe than men (67 per cent compared to 78 per cent).

Hamilton et al., (2000) found that walking rather than cycling was the most viable option for short journeys, however, reliance on walking as a mode of transport may have a negative impact on the quality of life and emotional well being of young mothers. Walking with young children is experienced as exhausting, and adds to the pressures and anxieties of the caring responsibilities of those in poverty. (Bostock, 2001; see also Hine and Mitchell, 2003).

Mackett (2000) found that women were less likely than men to consider cycling as an agreeable alternative to using their car for short trips. Fears about personal security, and the need to make complex journeys (such as transporting children to school on the way to work) limit the opportunities for women to cycle to work (Dickinson et al., 2003). It was noted in an earlier chapter in this report that girls in 13-22 age group had more negative perceptions of cycling than boys. Girls commented that they did not see many people cycling locally, and perceived that few girls of their age cycled (Davis, 2001; see also McWhannel and Braunholtz, 2002). Smith (2005) notes that when cycling in a particular locale is uncommon, it is mostly young males who cycle. However, with increasing numbers of cyclists in an area, the proportion of female cyclists increases sharply. This suggests that women may be more willing to cycle if there is an established cycling population, particularly one which includes both genders and a range of ages.

4.6 Barriers to Travel for Women

Accessibility

Women often made 'encumbered' journeys, i.e. travelled with luggage, shopping, or young children, and in these cases shared similar problems in using buses as those with restricted mobility. In a study of women's travel experiences, Hamilton et al. (2000) found that women travelling with children reported most difficulty - compared to other women - especially in relation to boarding, alighting and buying tickets (see also Reid Howie, 2000[†]; Wixey et al., 2003; Hine and Mitchell, 2001, 2003; Rajé et al., 2003a). Bus design (step-height, inadequate luggage space) emerged as another major concern. Hine and Mitchell (2001) also note that parents found travelling with children by public transport arduous and stressful, particularly when also carrying luggage or shopping, and many develop strategies to avoid using public transport, such as waiting for a lift or access to a family member's car.

Attitudes of transport operators

Women reported negative experiences of unhelpful staff, for example, bus drivers who were unhelpful when women with children struggled to board buses (Hamilton et al., 2000; Reid Howie, 2000[†]; Hine and Mitchell, 2001).

Reliability

Buses were often experienced as unreliable (Hamilton et al., 2000); long waits, sometimes in bad weather, were seen as unacceptable to mothers travelling with young children (Hine and Mitchell, 2001). Reid Howie (2000[†]) found that women had negative experiences of exposure to the weather - getting cold and wet while travelling by or waiting for buses - and this acted as a deterrent to using buses (see also Hamilton et al., 2000).

Lack of appropriate services

Rajé et al. (2003a) found that women who lived in, or on the outskirts of, cities were poorly served by bus routes. City bus routes tended to be radial, meaning that women's journeys by bus often involved complex trip chains where it was necessary to travel into the city then out again to their destination. As well as taking a long time, these journeys involved multiple fares. This was a barrier for some women in maintaining social networks and family ties (see also Hamilton et al., 2000). Reid Howie (2000[†]) also highlight the difficulties of travel between suburbs, and point to the lack of direct services in rural areas, with services often taking less than direct routes in order to cover a number of villages on the same bus route.

As described above, women without cars in Hamilton et al.'s (2000) study described not being able to make leisure trips due to the unavailability of direct services, meaning long, complicated and costly journeys. Women emphasised that journeys which would take five or ten minutes by car could take over an hour by bus, and involve catching more than one bus. (Hamilton et al., 2000). Women in this study also pointed to the lack of public transport in early mornings or in the evenings, or that fitted around shift-work (see also Reid Howie, 2000[†]).

Safety

Women often had safety concerns about using public transport, especially at night, and were more likely to feel consistently insecure than men when travelling after dark (DfT, 2004a[†]). This predominantly focused on fear of attack, in some cases while on the bus or train but especially when waiting at, or walking to and from, the bus stop, train or underground station, and could influence travel decisions, for example, the choice to travel by car rather than public transport (DfT, 2004a; Dobbs, 2005; Hine and Mitchell, 2001; Hamilton et al., 2000; Reid Howie, 2000[†]; Lucas et al., 2001[†]). Wixey et al.'s (2003) focus group participants described having to walk home through unsafe areas such as a cemetery or underpass after getting off the bus. The Department for Transport (2004a) found that women were more likely than men to have been the victim of sexual assault or harassment,

however, men were more likely than women to have experienced or witnessed all other types of crime and anti-social behaviour, particularly physical violence.

Ravenscroft et al., (2002) report that women were particularly concerned about their safety when using shared, non-motorised, walking and cycling routes, reporting greater levels of anxiety and fear than men. This meant some women did not use the routes, or modified their use by ensuring they did not use the routes alone, even during the day. Focus group analysis indicated that such routes may be generally perceived as risky, and the authors conclude that the effectiveness of walking and cycling routes in promoting sustainable development depends on allaying users' concerns about the safety of using them. Similarly, Dickinson et al., (2003) found that women were significantly more likely to cite personal security issues as a barrier to cycling to work than were men.

Cost

Cost of car-ownership was a barrier for women on low income in accessing private transport. Cost was also a barrier to using public transport, particularly for mothers on low income (Reid Howie, 2000[†]; Dobbs, 2005). As discussed above, cost issues were compounded when women had to undertake multi-stage journeys due to the lack of a direct bus route (for example, Reid Howie, 2000[†]).

Information

Reid Howie (2000[†]) found lack of information to be a barrier to women's use of public transport. The increasing number of different service providers was felt to make it difficult to know where to get information. The lack of information at bus stops, and the unreliability of timetables - particularly the lack of information about timetable changes in the school holidays - were also cited as problems.

4.7 Women, Mobility and Social Exclusion

Transport and work

Many women may be unwilling or unable to travel far to work, thus limiting the employment opportunities open to them. McQuaid et al., (2001) investigated the attitudes of unemployed jobseekers towards travel-to-work time, and found that women and those with dependent children were least likely to be willing to travel longer periods to work (see also Baker et al., 2005). Women tend to live closer to workplaces than do men, with only eight per cent of women, compared to 11 per cent of men, travelling more than 30 minutes to work (Wu and Hine, 2002). Reid Howie (2000[†]) found that over a third of women in their survey felt restricted in where or when they could work or study.

Dobbs (2005) states, from a study in the North East, that women's access to private transport is restricted by men's control over car-use in car-owning families, which limits their access to employment opportunities. Dobbs (2005) found women's access to private transport to be associated with full-time and higher status employment, and higher pay. She argues that access to private transport improves women's access to the labour market and to a wider range of job opportunities. This in turn increases levels of access to private transport. In contrast, those without access to private transport or with restricted access to cars have limited employment opportunities and restricted travel to work horizons. Women without access to private transport described this as a 'vicious cycle', in which being unable to afford a car meant that they could not access employment or better jobs (see also Hamilton et al., 2000).

Transport and access to healthcare

Ruston (2002) found that women are more likely to report difficulty in accessing hospitals and GP practices than are men. Hamilton and Gourlay (2002[†]) found that half the women antenatal clinic attendees in their survey had difficulty accessing the hospital. Bus users had more problems than those who travelled by car: travelling by bus took much more time than travelling by car, and 53 per cent of those who travelled by bus found the journey difficult, compared to 13 per cent of car users. Sixty-nine per cent of missed maternity care appointments were due to transport or transport-related

factors. Sixty-six per cent of respondents who had missed an appointment had other children, and this was seen as making long bus journeys more of a problem. In other words, lack of adequate transport, coupled with caring responsibilities, could make it difficult for women to access hospital appointments. The difficulty of travelling to hospital using public transport, when accompanied by young children, was also highlighted by respondents in Bostock's (2001) qualitative study. For example, low income mothers without personal transport reported forgoing their own use of health services to ensure that lifts from relatives would be available for their children's health needs (Bostock, 2001).

Transport and leisure

Lower levels of car access among women may make it more difficult for women to access social or leisure opportunities. Reid Howie (2000[†]) found that around half of the women in their survey felt that transport constraints placed restrictions on the ease with which they could visit friends or relatives.

Women without a car, particularly those with young children, described being unable to visit friends or relatives due to costly, complicated and long journeys by bus or train (Hamilton et al., 2000). Bostock (2001) found that some low income mothers were unable to visit family or access support from social networks due to the cost and complexity of using public transport.

Lack of transport can also impact on women's ability to provide recreational opportunities for their children. Fenn et al., (2004) report that women are more likely than men to identify lack of transport as a barrier to attending arts events.

Hamilton et al., (2000) found that cost and complexity of journeys by public transport meant that some mothers were unable to take their children out on recreational trips, such as visits to the cinema. Low income mothers, who are reliant on walking as their main means of transport, are effectively excluded from leisure opportunities for themselves and their children which are not within walking distance. Bostock (2001) notes that low income mothers often live in areas with limited leisure opportunities, and a lack of safe play areas, and due to their reliance on walking as a mode of transport, these women and their children are effectively excluded from leisure activities outside their local area. The need to walk long distances to safe recreation grounds was noted by parents in Wixey et al.'s (2003) study.

4.8 Initiatives

There is little evidence of initiatives targeted specifically at the travel needs of women. Hamilton et al., (2000) have drawn up a gender audit checklist for use by transport operators, which can be used to assess how well transport providers meet women's transport needs. However, it is not clear to what extent this has been used successfully to change transport practice.

What would make a difference?

Women's travel needs are different to those of men, in particular, women are more likely to travel encumbered, to travel off-peak, to have multi-purpose journeys, and to want or need to travel on non-radial routes. Improving transport provision for women would involve addressing these issues. Issues of primary importance are: ensuring that women are able travel easily with children; enabling women to travel where they want to without long, complex and costly journeys; and helping women to feel safe when using public transport. Skinner (2005) emphasises the need for a flexible, reliable, efficient and safe public transport system to offer women a real alternative to private transport.

Accessibility

Reid Howie (2000[†]) point to the need for accessible low floor buses with plenty of space for buggies. The reinstatement of bus conductors was called for in order improve accessibility and safety (Hamilton et al., 2000). A greater awareness of the needs of women travelling with children (such as

difficulties boarding and alighting, particularly with babies and toddlers), and the provision of assistance where needed, would be of value.

Provision of appropriate services

Women may have greater need than men to travel at off-peak times. Skinner (2005) argues that it is important for public transport to match women's employment needs, which may not be on a 'nine to five', Monday to Friday basis. Reid Howie (2000[†]) make the same point, and suggest that a generally-improved public transport system is needed with better services at evenings and weekends and with better integration between services. The radial nature of bus routes in many areas (with routes going into town centres from different directions, but not, for example, directly between suburbs) does not meet the needs of many women, and this should be taken into account by service providers. Routes should match with women's needs to transport children to school and to access shopping facilities (Reid Howie, 2000[†]). Hamilton and Gourlay's (2002[†]) study, and Bostock's (2001) study highlight the need for affordable and direct public transport to hospitals to ensure that all women, and particularly those on a low income and with caring responsibilities, are able to attend hospital appointments.

Finding ways to reduce the time costs associated with travelling by public transport would mean women are less reliant on the car (Skinner, 2003, 2005).

Safety

The Department for Transport (2004a) found that both men and women felt that their security would be enhanced by CCTV at bus stops and train stations, a well lit environment, visibility of bus stops from the road, and the presence of staff at train stations. When travelling by bus or train, women were more likely to want an additional member of staff on the bus or train, and the refusal of passengers under the influence of drugs or alcohol.

Reid Howie (2000[†]) noted the importance of improving perceived safety on the journey to work, particularly when this involved shift patterns or employment in isolated areas. Improvements to comfort and safety, including taxi sharing and regulation, surveillance measures and additional staff on public transport, easy access to assistance, better lighting, providing clean and comfortable facilities and reducing vandalism, and providing safe car parking were suggested.

Cost

The provision of reduced fares for women on lower income, and of integrated/'through-ticketing' would be beneficial (Reid Howie, 2000[†]).

Information

As with other social groups, women would like better access to travel information, particularly reliable and up to date timetables, the provision of national information, and the availability of information at bus stops (Reid Howie, 2000[†]).

Flexibility in access to childcare, employment and services

Dobbs (2005) suggests that mobility-sensitive employment, and schooling and childcare arrangements are needed to make it easier for women to travel to work. Having childcare and education under one roof, to improve 'wrap-around care' and reduce the number of points between which children have to be transported, would make it easier for women to coordinate travelling to work or education with childcare responsibilities (Skinner, 2005).

Hamilton and Gourlay (2002[†]) make specific recommendations about travel to antenatal appointments. They suggest that travel to hospital for antenatal care can involve difficult and sometimes unnecessary journeys, and that there is a need for more flexibility in antenatal care, particularly in terms of whether antenatal care can be provided in places other than hospitals, such as local clinics, or through home visits or telephone consultations.

Equality in access to transport

Skinner (2005) points out that women come under attack for using their cars for the school run, with these journeys being seen as 'non-essential', in contrast to the 'more important' employment journeys, and transport of commercial goods, being carried out predominantly by men. Dobbs (2005) emphasises that women need fair access to private transport in order to combine work and family life, and that measures to reduce car use (for example, on the school run) may make it more difficult for women to negotiate complex journeys unless public transport is provided in a way that meets women's needs.

Involvement of women in transport planning and development

Reid Howie (2000[†]) suggest there should be greater consultation with women in the planning and development of transport provision, to ensure that the services provided meet the needs of women.

5. Access: Disabled People and Transport

5.1 Summary: Accessing and Trusting Transport

This final chapter on mobility and working-age adults examines the experiences of disabled people. 'Access' is a fundamental issue in realising disabled people's entitlement to achieve the same opportunities as non-disabled people, relating to both attitudinal and physical barriers. Clearly, access to transport and the accessibility of transport are key. *However, people with disabilities are less likely to drive and more likely to be dependant on public or community transport, or lifts from family and friends. Public transport is often experienced as inaccessible. Disabled people's travel is limited both by a lack of accessible services, and by a lack of confidence that they will be able to complete journeys without encountering problems. This can be a barrier to social inclusion - making it difficult for people with disabilities to access education and employment, services and social networks.*

Disabled people who drive experience fewer problems, although the distance of parking spaces from services, and the misuse of disabled parking spaces can cause difficulties.

Disabled people experience a lack of flexibility in their travel choices: often travelling involves planning ahead (for example, booking assistance for rail travel, or booking community transport 48 hours in advance), making it difficult to be spontaneous. However, there is often uncertainty about whether services will be provided as expected. It is important for disabled people to feel confident that they can complete a journey safely; that all stages of the journey will be safe and accessible, including the street environment and getting on and off buses and trains, and that promised support will be available. Otherwise they may not be willing to risk a journey.

Community transport is viewed positively by many disabled people, and is particularly valued in rural areas where public transport is lacking. However there is a need for more demand-responsive services to meet people's needs for accessibility and flexibility.

It is important to recognise that people with different types of disability (for example, mobility impairment, visual impairment) have different needs, and the involvement of disabled people in transport planning is important to ensure these needs are met.

Disability has been defined as an individual having a 'physical or mental impairment which has a substantial and long-term adverse effect on his/her ability to carry out normal day-to-day activities' (The Disability Discrimination Act 1995). There are 6.8 million disabled people of working age in Britain, one-fifth of the total working age population (Disability Rights Commission, 2006).

5.2 Selected Key Findings

- Car access is lower for disabled people, and many are dependent on public transport. Transport is a key issue of concern for disabled people: 48 per cent of respondents in the DPTAC (2002a[†]) survey mentioned transport as an important local concern.
- Escorted travel by car was the most common mode of transport for disabled people (67 per cent used this mode in the survey month), 43 per cent travelled by local bus, 40 per cent by taxis/minicabs, 20 per cent drove. Around half of them had used transport initiatives: volunteer drivers (20 per cent), Motability (17 per cent), buggies at airports or stations (15 per cent), Shopmobility (11 per cent), dial-a-ride (10 per cent), Disabled Person's Reporting System (to book assistance at railway stations, ten per cent), and the Taxicard scheme in London (seven per cent). Disabled people reported far lower levels of access to a car than the general public: 60 per cent of disabled people had no car in the household compared to only 27 per cent of the general public (DPTAC, 2002a[†]).
- Disabled people were positive about community transport. The main factors determining use of community transport were its availability (46 per cent), cost (39 per cent), physical accessibility (33 per cent) and the flexibility of the route (32 per cent) (DPTAC, 2002b[†]).

- The cost of public transport is a barrier to travel for many disabled people, with the high cost of taxis being a particular problem (Reid Howie Associates Ltd, 2004[†]; Beart et al., 2001; Lucas et al., 2001[†]; DPTAC, 2002a[†]). In the UK there is a mixture of special taxi services available at reduced costs for disabled people but, apart from services for disabled children for education, these are at the discretion of the local authorities. Only 42 of 150 local authorities were found to use voucher schemes, with vouchers varying widely in value.
- The Social Exclusion Unit (SEU, 2003) found that only ten per cent of trains and 29 per cent of buses met the required standards and regulations introduced under the Disability Discrimination Act of 1995. Lack of equality of access to public transport is seen as an important structural barrier to disabled people's equality of position in society (Grewal et al., 2002).
- Champion et al., (2003) found that about half of disabled people in their survey had turned down a job offer or job interview due to lack of accessible transport, and about half said that lack of transport had restricted their choice of job. Boylan and Burchardt (2002) found that disabled entrepreneurs cited lack of transport as one of the barriers to entering and sustaining self-employment.
- Disabled people are more likely to have difficulty accessing health care than members of the general population. Twenty per cent of the disabled people in Champion's (2003) study said that it was difficult or impossible to get the healthcare they needed due to inaccessible transport.
- Twenty-one per cent of respondents felt that inaccessible transport had limited the range of adult education and training courses available to them (Champion, 2003).

5.3 Why do Disabled People Travel?

The review did not capture research which detailed the travel needs of disabled people.

5.4 How do Disabled People Travel?

The Disabled Persons Transport Advisory Committee (DPTAC, 2002a[†]) survey found that disabled adults travelled a third less often than the non-disabled population. Escorted travel by car was the most common mode of transport (67 per cent of respondents had used this mode in the last month), followed by travel by local bus (43 per cent), then by taxis/minicabs (40 per cent). Disabled people were much less likely than the general public to drive (20 per cent compared with 64 per cent), and more likely to travel by taxi or minicab.

Many disabled people do not have access to independent transport. Disabled people reported lower levels of access to a car than the general public: 60 per cent of disabled people had no car in the household compared to only 27 per cent of the general public (DPTAC, 2002a[†]).

This may be a particular issue for adults with learning difficulties. Beart et al., (2001) note that the majority of adults with mild to moderate learning difficulties do not have access to independent transport. The participants with learning disabilities in their study required some form of transport to reach 70 per cent of the activities that they currently did, and 83 per cent of the activities they wanted to do. The types of transport available to adults with mild to moderate learning difficulties were: lifts from parents and carers, public transport and specialist transport (for example, dial-a-ride).

Around half of the disabled people in the DPTAC (2002a[†]) survey had used transport initiatives. The highest proportion had used volunteer drivers (20 per cent), 17 per cent had used Motability, 15 per cent buggies at airports or stations, 11 per cent Shopmobility, ten per cent dial-a-ride, ten per cent Disabled Person's Reporting System (to book assistance at railway stations), and seven per cent had used the Taxicard scheme in London. Volunteer drivers were most likely to be used in rural than in urban areas, and wheelchair users were more likely than other disabled people to use Motability, Shopmobility, dial-and-ride, and the Disabled Person's Reporting System. Wheelchair users were also less likely to travel alone.

Disabled people's use of community transport is relatively low (DPTAC, 2002b[†]). The most commonly used form was found in this study to be dial-a-ride (16 per cent) followed by group transport (14 per cent) (vehicle sharing or group hire) followed by community buses (13 per cent) and community car schemes (12 per cent). Twenty-five per cent had used transport provided by social services. The most popular use of community transport was travelling to and from town centres (18 per cent), followed by visiting community and day care centres (16 per cent). Forty-four per cent of respondents had a concessionary bus or rail pass, and of these, one-quarter could use it on community transport, 12 per cent could not, and 61 per cent did not know.

5.5 Attitudes Towards Transport

As car access is lower for disabled people, many are dependent on public transport, and this is reflected in the finding that transport is a key issue of concern for this group: 48 per cent of respondents in the DPTAC (2002a[†]) survey mentioned transport as an important local concern. Disabled people were more likely to be concerned about local transport than the general public. Disabled people who were wheelchair users, blind or partially sighted, or lived in rural areas, were most likely to be concerned about transport. Most common concerns about transport were about the difficulty in using public transport, and the frequency and reliability of public transport.

Disabled people tended to be more positive about the ease of using taxis or minicabs than of using buses, trains or coaches, although the cost of using taxis was a disadvantage. Rail travel was seen as most problematic, followed by bus services. This was particularly the case for wheelchair users, who tended to feel that the design of buses and trains did not take their needs into consideration (DPTAC, 2002a[†]).

Fifty-nine per cent of respondents to the DPTAC (2002a[†]) survey preferred travelling by car rather than by public transport. Older disabled people, wheelchair users, ambulant disabled people, and disabled car drivers were most likely to prefer to travel by car, and preference for car-travel was strongest in rural areas. Disabled people perceived the car to be the most accessible mode of transport. Those who preferred travelling by car to using public transport saw the car as easier or more convenient (38 per cent), as providing door-to-door transport (31 per cent), as easier to get into and out of (13 per cent), and as obviating the need to wait (11 per cent) or to walk far (10 per cent).

Disabled people with experience of community transport were very positive about it, perceiving it as easy to use, with community transport staff seen as friendly and helpful (DPTAC, 2002b[†]). The main factor determining people's use of community transport was its availability (46 per cent). Other important factors were cost (39 per cent), physical accessibility (33 per cent) and the flexibility of the route (32 per cent). The most frequently used access features of community transport were handrails (37 per cent), steps (24 per cent) and driver assistance (22 per cent), although lifts were most important for wheelchair users. (DPTAC, 2002b[†]). Disabled people were positive about the door-to-door service provided by dial-a-ride transport (Reid Howie Associates Ltd, 2004[†]).

Disabled people would like to use community transport for more journeys, the most popular being to visit hospital and doctors (42 per cent) (DPTAC, 2002b[†]). However, CAG Consultants and TAS Partnership Ltd. (2004) note that often community transport does not cover hospitals because this would make people ineligible for the Patient Transport Services. DPTAC (2002b[†]) also found that disabled people would like to use community transport to access shops, with 34 per cent saying they would like to use it to get to town centre shops and 29 per cent for out of town shopping centres. Respondents said that they currently conducted journeys that they would like to make by community transport by taxis/minicabs (49 per cent), cars driven by someone else (48 per cent) or public transport (47 per cent).

Crush and Krishnan (2004) found that disabled people in London who cycled for leisure felt that cycling offered emotional and health benefits. Those who cycled as a means of transport felt that cycling gave them independence and efficiency, and avoided negative aspects of travel in London. They found that disabled people who cycled for leisure felt that cycling had physical and emotional health benefits and was a way of socialising.

5.6 Barriers to Using Public and Community Transport

Accessibility

Physical accessibility is a key issue for disabled people in using transport. Disabled people with mobility problems may be unable to walk to bus stops or to stand and wait for a bus, which limits their use of public transport. Boarding and alighting can be problematic and a source of anxiety (for example, Wardman et al., 2001[†]; Logan and Dyas 2004; Hine and Mitchell, 2003). Although many

local areas have low floor buses, bus operators cannot guarantee that a low floor bus will be used on a route at all times, and in any case, many wheelchair users cannot use low floor buses (Reid Howie Associates Ltd, 2004[†]). Blind and partially sighted people reported that lack of continuity of bus design made it difficult for them to get on and off buses and find a seat, and that buses adapted for wheelchair users could be difficult for blind and partially sighted people to use (DPTAC, 2002a[†]). In addition, problems with motorists parking at bus stops can mean that buses are unable to pull in at the curb, making even low floor buses inaccessible (Reid Howie Associates Ltd, 2004[†]; Lucas et al., 2001[†]). Disabled people reported problems with bus drivers not stopping at bus stops for them, and this was a particular problem for blind and partially sighted people who often are unable to tell which bus is coming and signal for the bus to stop (DfT, 2004a).

Accessibility was also an issue for disabled people when travelling by car. Problems included a lack of availability of disabled parking spaces, and the lack of enforcement of these parking spaces. Also, disabled people had problems with the distance of parking from services and amenities, particularly when towns were pedestrianised (DPTAC, 2002a[†]; Reid Howie Associates Ltd, 2004[†]; Barrett et al., 2003).

Street design (for example, gradients, the lack of dropped curbs) also acted as an obstacle to free movement (Lucas et al., 2001[†]; Barrett et al., 2003).

Availability

Disabled people face similar problems of availability of public transport to the general public, with those living in rural areas often experiencing limited services, or having no local public transport available.

Availability of community transport appears to be low. A quarter of disabled people in the DPTAC (2002b[†]) survey said that there was no form of community transport service available in their area. The most widely available service was dial-a-ride, which was locally available to 48 per cent of respondents. Availability seemed to be highest in London (compared with other urban and rural areas). Fifty-seven per cent of respondents from London said three or more community transport schemes were available in their areas compared to 28 per cent in other urban areas and 19 per cent in rural areas. However this apparent lack of community transport could be due to disabled people's lack of knowledge about existing schemes, rather than lack of service provision. Awareness of schemes is discussed in the following section.

Information

Accessing information about transport services may be more difficult for people with disabilities, particularly those who are blind or partially sighted. Those who already used public transport felt they would use it more if travel information was easily accessible. Many disabled people felt that they were not kept sufficiently informed during the journey (for example, about delays, or of the next destination) - this was a particular problem for blind and partially sighted people, and to a lesser extent those with a hearing impairment and those who were wheelchair users (DPTAC, 2002a[†]).

Disabled people's knowledge and awareness of community transport was found to be low in a survey by DPTAC (2002b[†]). Only 15 per cent of respondents said they knew a lot about any of the forms of community transport listed in the survey. The best known schemes were dial-a-ride and Shopmobility. Around half of the disabled people knew at least a little about them (54 per cent dial-a-ride, and 51 per cent Shopmobility). Awareness of all forms of community transport except Shopmobility was low among wheelchair users.

Obtaining information about community transport services is difficult and harder than for public transport. Twenty-five per cent of people said that more information would need to be available before they considered using community transport more. Other key priorities for improvement were reliability and punctuality. However, 14 per cent said they would not use community transport regardless of improvements (DPTAC, 2002b[†]).

Personal security

Disabled people were more likely to say they were fearful of travelling by public transport than were the general public (40 per cent compared with 22 per cent: DPTAC, 2002a[†]). There were two key issues: concern about being subject to discrimination, abuse or violence, and concern about falling or having accidents when 'out and about'.

Disabled respondents to the 2002 survey on People's Perceptions of Personal Security (DfT, 2004b[†]) said that although their access to public transport had increased, their disability made them a target for anti-social and criminal incidents. People with disabilities felt that they were unable to react quickly to potentially dangerous situations, which made them more vulnerable. One in four of the people with learning difficulties interviewed by Mencap (2000[†]) reported experiences of bullying when using buses. Fear of accidents and falling when using buses and trains was an issue for disabled people, particularly blind and partially sighted people (RNIB, 2002[†]).

Fears about the physical safety of the street environment meant that blind and partially sighted people often did not make journeys (RNIB, 2002[†]). Connolly (2001[†]) found that older disabled people's concerns about walking in their local neighbourhood focused on fear of crime and accidents, and the safety of the street environment (see also Hine and Mitchell, 2003). Disabled people described accidents they had had because of features of the street environment such as uneven pavements or a lack of barriers around stairs (Barrett et al., 2003; RNIB, 2002[†]).

Perceived vulnerability when cycling on busy roads was found to be a key barrier to disabled people cycling in London (Crush and Krishnan, 2004).

Lack of flexibility/spontaneity

Many disabled people, particularly wheelchair users and blind and partially sighted people, felt frustrated by having to plan journeys long in advance of trips. This was particularly the case when booking rail, ferry, air, and taxi travel, but also when arranging lifts from family and friends (DPTAC, 2002a[†]). For example, rail travel may have to be booked ahead to ensure that assistance with embarking and disembarking will be available. Adults with mild to moderate learning difficulties felt that public transport was not regular enough and often involved long waits (Beart et al., 2001).

Dial-a-ride services were seen as overstretched, the need to book ahead was seen as a problem, and often dial-a-ride schemes could not provide transport at times to suit passengers needs (DPTAC, 2002a[†]). Specialist transport like dial-a-ride was criticised by people with learning difficulties for not always being on time. Limits on travel across council boundaries, and the lack of specialist transport later in the evening meant that people with learning difficulties felt limited by where they could go and were frustrated by being unable to visit friends who had moved out of the area (Beart, 2001).

People were concerned about the lack of flexibility in their travel arrangements when dependent on public, special or community transport, and felt that they lacked choice and spontaneity, being unable to go out at the spur of the moment. (DPTAC, 2002a[†]; Reid Howie Associated Ltd, 2004[†]; Barrett et al., 2003).

Uncertainty

Reid Howie Associates Ltd (2004[†]), point out that, despite disabled people often having to carefully plan journeys ahead of time, services are not always provided as expected. Because of this disabled people experience high levels of uncertainty about travelling, and have concerns about being stranded, particularly in the case of more complex journeys with several stages. Disabled people reported being concerned about whether low floor buses or accessible trains would be available over their whole journey, with rural passengers in particular being concerned about whether their train would return to an accessible platform. The Social Exclusion Unit (SEU, 2003) found that disabled people were often unwilling to catch buses, regardless of the accessibility of the bus itself, unless they could be confident that there would be accessible transport available for the return trip. Also, uncertainties about the availability of an accessible taxi for a return journey meant that some disabled people were

unwilling to travel by taxi (Reid Howie Associates Ltd, 2004[†]). Many disabled passengers had experiences of promised or booked assistance failing to materialise (Reid Howie Associates Ltd, 2004[†]; Lucas et al., 2001[†]). This uncertainty was a major source of stress for disabled people and acted as a disincentive to travel.

Cost

Many disabled people are on low income, and are concerned about the cost of transport. However, disabled people may also face additional costs through lack of choice of transport mode, or the need for special transport. The cost of public transport is a barrier to travel for many disabled people, with the high cost of taxis being a particular problem (Reid Howie Associates Ltd, 2004[†]; Beart et al., 2001; Lucas et al., 2001[†]; DPTAC, 2002a[†]; Logan and Dyas, 2004). In the UK there is a mixture of special taxi services available at reduced costs for disabled people. However, apart from services to take disabled children to and from school, services for disabled adults in the UK are at the discretion of the local authorities. Only 42 of 150 local authorities were found to use voucher schemes, with vouchers varying in value between authorities from £20 to £300, and the numbers qualifying for such schemes usually highly restricted (ECMT, 2001).

Although concessionary bus fares are available to disabled people (for example, Buchanan, 2004), Reid Howie Associates Ltd (2004[†]) point out that these appear to have had little impact on the travel of those who cannot access public transport either because of the lack of availability of transport in their local area, or because the available transport is difficult for disabled people to use. Also, concessionary bus-travel may actually act as a disincentive to disabled people's travel, due to an increase in passenger numbers and the potential for overcrowding on buses.

Attitude and approach of transport staff

The attitude and approach of the transport operator staff was an important aspect of travelling. Experiences of negative staff attitudes, lack of time and patience, lack of disability awareness, and unhelpful staff could act as a disincentive to travel, particularly if, when considering future trips, the disabled person felt they would not get the assistance they needed to allow them to complete their journey (Reid Howie Associates Ltd, 2004[†]; Barrett et al., 2003).

Need for a systemic perspective

Porter (2002) emphasises that barriers to travel faced by people with disabilities need to be understood from a systemic perspective. For example, findings from Porter's study carried out in Swansea suggest that someone may decide not to travel, not because the vehicle is inaccessible to the wheelchair, but because there is no accessible toilet in the shopping centre he/she wants to visit. This study shows how disability can be best understood as a continual process of interaction, rather than a fixed set of barriers. The importance of the built environment as a barrier to travel is also emphasised by Barrett et al., (2003).

Interchanges within journeys may be a particular problem for disabled people - as noted above, disabled people often have concerns about whether accessible transport will be available across the whole journey. Also, as participants in the study by Reid Howie Associates Ltd (2004[†]) point out, often connections between services often do not allow enough time for disabled people to make the changes.

5.7 Transport and Social Exclusion

The Social Exclusion Unit (SEU, 2003) found that only ten per cent of trains and 29 per cent of buses meet the required standards and regulations introduced under the Disability Discrimination Act of 1995. Lack of equality of access to public transport is seen as an important structural barrier to disabled people's equality of position in society (Grewal et al., 2002).

Forty-one per cent of the disabled people in a survey carried out by DPTAC (2002a[†]) said they normally experienced difficulty with at least one type of journey. Twenty-five per cent had experienced difficulty travelling to the doctor or hospital, 23 per cent had difficulties travelling to visit friends or relatives, and 18 per cent had difficulty travelling to leisure or recreational services. Twenty-three per cent of disabled workers reported difficulty in travelling to and from work. Wheelchair users, and disabled people in London, were most likely to experience problems. One in five disabled people in Grewal et al.'s (2002) study had difficulties accessing goods and services; a lack of accessible transport was a key barrier.

This lack of access to transport is a significant barrier to disabled people's participation in society, making it more difficult for disabled people to access employment, education, health, and leisure opportunities. A lack of accessible transport can lead to social isolation, loss of confidence and feelings of insecurity (Reid Howie Associates Ltd, 2004[†]). Around half the respondents to the DPTAC (2002a[†]) study said that improved public transport would improve their quality of life.

Transport and employment

There is evidence that a lack of accessible transport for disabled people can limit the employment opportunities available to them, and act as a major barrier to gaining suitable employment.

Campion et al., (2003) found that about half of disabled people in their survey had turned down a job offer or job interview due to lack of accessible transport, and about half said that lack of transport had restricted their choice of job. Wheelchair users and blind and partially sighted people were more likely than other disabled people to say their job choices were limited through lack of transport. Grewal et al., (2002) found that disabled people who could drive and had their own transport experienced fewer problems travelling to work than those who were reliant on public transport or family and friends.

Transport was identified by unemployed disabled people as one factor which would enable them to work; better public transport, or availability of own transport, were seen as factors which would help by around 16 per cent of responders in Kazimirski et al.'s study (2005). Thornton and Corden (2002) evaluated the impact of the Access to Work program in a qualitative case study and found that getting reimbursed for taking taxis to work was a key means of enabling participants to find, enter and sustain employment.

Boylan and Burchardt (2002) found that disabled entrepreneurs cited lack of transport as one of the barriers to entering and sustaining self-employment, in that it could cause difficulties in accessing training and support. Those who were wheelchair users, and those with sight problems, found that business transport costs were high, and that lack of mobility hampered them in marketing and networking. Those who had been successful in setting up in business felt that help from family with transport was an important factor in their success.

Transport and health

Disabled people are more likely to have difficulty accessing health care than members of the general population. Twenty per cent of the disabled people in Campion's (2003) study said that it was difficult or impossible to get the healthcare they needed due to inaccessible transport. This was a particular problem for disabled people without access to a car: 20 per cent of respondents without a car had been unable to collect prescriptions, 29 per cent had been unable to attend medical appointments, and 20 per cent had had to defer treatment due to a lack of accessible transport. Research by Focus (2001) found that 23 per cent of people with mental health problems and on low

income had been unable to get help from a mental health service for financial reasons, and these reasons primarily related to transport costs.

The authors recognise that problems with accessible transport to health care for disabled people contributes to health inequalities, and that disabled people are more likely to face poorer health and disruption of treatment, and less likely to be able to exercise choice in seeking health care. The authors also recognise that transport problems contribute to the high number of 'did not attends' (i.e. missed or cancelled appointments) by disabled people, which are associated with costs to health care providers in terms of wasted resources and missed opportunities for early treatment or intervention.

Transport and learning

Twenty-one per cent of the disabled people in Campion's (2003) study felt that inaccessible transport had limited the range of adult education and training courses available to them.

Transport and social activities

Lack of accessible transport was a barrier for disabled people to seeing friends and family and attending social events (Reid Howie Associates Ltd, 2004[†]). Thirty per cent of disabled people in Campion's (2003) study stated that inaccessible public transport had made it difficult to attend social functions, and this rose to 45 per cent of respondents without access to a car. Disabled people in Campion's study felt that they were missing out on things that non-disabled people take for granted - some reported being unable to attend family events, and becoming isolated from friends or their local community due to lack of transport. Lifts from others enabled disabled people to travel, but was seen as reducing their independence.

A survey of households in Leith, Castlemilk and Coatbridge found transport to play an important role in shaping experiences of social exclusion. Disabled people, especially those with chest/breathing difficulties and ambulatory impairments experienced physical exclusion due to difficulty accessing transport (Hine and Mitchell, 2003). Lack of transport has been identified as a key barrier for accessing leisure activities for people with learning disabilities (Beart et al., 2001), and people with mental health problems (Pieris and Craik, 2004).

Overall, providing accessible public transport has been seen as a key factor in improving the social and economic inclusion of disabled people. Campion (2003) emphasises that policy initiatives to improve economic and social inclusion of disabled people, and to reduce health inequalities, will not be effective unless the important role of the provision of accessible public transport is recognised.

5.8 Initiatives

Several publications describe initiatives designed to increase the accessibility of transport to disabled people, although there is no evidence of systematic evaluation of these initiatives.

Community transport initiatives such as dial-a-ride schemes, group hire schemes and voluntary car schemes have been successfully used in east Cambridgeshire and Fenland to provide increased access for people with disabilities who live in rural areas, helping them overcome social exclusion. Participants in this project found these schemes to be cheaper than taxis and more convenient than the buses because of assistance provided by drivers (for example, helping with shopping bags). However, a limitation here is that community transport often cannot be used to access work or hospitals (Cambridgeshire Rural Transport Partnership, 2005).

The Countryside Agency (2005) reports on transport initiatives to improve social inclusion in rural areas, which include initiatives such as the provision of specially adapted accessible vehicles with wheel-chair accessible stops, door-to-door services, and flexible routes. Some schemes also address the problem of interchange, that is, the linking-up of rail and bus services.

Tyler (2002) details the process of designing an accessible bus system, including issues of bus network design, infrastructure and operation. Brown and Tyler (2002) describe an initiative to develop one such accessible system in the case of the 'Cumbria Plusbus'; a fully accessible minibus,

including an audio loop, with improved infrastructure (bus shelter and platform for boarding), and information in a variety of formats (large print, Braille, and audio).

Initiatives to enable disabled people to cycle have also been described, such as the The Road to Freedom Project, which provides cycling opportunities near Teeside, the Gateshead Stadium and Derwent Country Park, for people with severe physical and mental disabilities. It is run by a voluntary organization, Gateway Wheelers, since 2002 and includes 90 members living in rural areas (Countryside Agency, 2005).

What would make a difference?

DPTAC (2002a[†]) found that disabled people had similar priorities to the general public for improvements in transport, feeling that they would use public transport more if services were more frequent, more comfortable, and lower cost.

Better accessibility

Disabled people wanted better access to transport both in terms of getting to bus stops and train stations, and getting on and off buses and trains. More accessible buses and taxis are needed, as are safe and accessible facilities (bus stops, stations etc). This includes the provision of kneeling buses on all routes, and tactile edges to platforms on railway stations (Campion, 2003; RNIB, 2002[†]). The enforcement of strict parking restrictions at bus stops was also seen as important (RNIB, 2002[†]; ECMT, 2003). It was seen as particularly important to ensure that, as well as designing accessible vehicles, measures are taken to ensure that disabled passengers can board and alight safely and make easy interchanges (Reid Howie Associates Ltd, 2004[†]; RNIB, 2002[†]).

The reintroduction of bus conductors would help disabled people to access public transport, as well as reduce fears about safety and vulnerability when using it (Campion, 2003). The provision of a dedicated disability access coordinator for public transport use would also be valuable, particularly if they were able to support access across different public transport services (Campion, 2003). Alternatively, Salveson et al., (2001) recommend developing a network of 'travel buddies' or 'bus buddies' for people who have difficulty using conventional services without assistance.

Dependability of public transport

Reid Howie Associates Ltd (2004[†]) emphasise the need for public transport to be consistent and dependable - with more certainty that services will be accessible and that promised or booked support will be delivered, so disabled people are not prevented from travelling by fears about potential problems such as being 'left stranded' (cf RNIB, 2002[†]). Disabled people need to be sure that the system in place to support their travel will actually work (Wardman et al., 2001[†]).

Information

Clear information about public transport in a range of formats, both before and during travel was a priority (Reid Howie Associates Ltd, 2004[†]; RNIB, 2002[†]), including regular audible and visible announcements on trains and buses (Campion, 2003; RNIB, 2002[†]). The provision of more information during a journey, particularly about delays, and ensuring that this information is provided in both audible and visual format, would be greatly valued and would help reduce anxiety and enhance feelings of personal security (DfT, 2004b[†]). The provision of information on cycling and promotion of cycling to people with disabilities was felt to be important in encouraging more disabled people to cycle (Crush and Krishnan, 2004).

Staff disability training

Disabled people felt strongly that mandatory disability training for front-line staff, and improved staff and passenger attitudes, would lead to better experiences of using public transport, would help overcome some common problems such as buses failing to stop for blind and partially sighted people, and would help enable disabled people to use public transport (DPTAC, 2002a[†]; Campion, 2003; Reid Howie Associates Ltd, 2004[†]; RNIB, 2002[†]; DfT, 2004a; Wardman et al., 2001[†]; Salveson et al,

2001). Forty-seven per cent of people surveyed in the DPTAC (2002a[†]) study felt that they would travel by public transport more if staff were better trained to meet their needs.

Cost

Affordable transport was a priority (Barrett et al., 2003) and reduced fares for disabled people using public transport were felt to be important, particularly in the case of taxis/minicabs (DPTAC, 2002a[†]; Reid Howie Associates Ltd, 2004[†]). However, Reid Howie Associates Ltd (2004[†]) emphasise that cost initiatives such as concessionary travel will not be helpful unless transport is accessible to disabled people.

Enforcement of regulations

Disabled people wanted better enforcement of disabled parking to allow them ease of access to services and facilities by car, as well as guarantees that seats on buses and trains would be given to disabled users (Campion, 2003; Reid Howie Associates Ltd, 2004[†]).

More alternatives

Rural areas have more need for alternative approaches to public transport, which is often sparse or lacking. Car sharing, community buses, and demand-responsive subsidised public buses would all be beneficial in helping disabled people in rural areas to travel (Reid Howie Associates Ltd, 2004[†]).

The availability of more demand-responsive transport would be of benefit to disabled people generally. The Department for Transport (2004a) note that more vehicles and drivers are needed in all areas for the dial-a-ride service that provides door-to-door transport. The Social Exclusion Unit (SEU, 2003) suggest that a demand-responsive transport such as the Flexline used in Sweden and Denmark, would be extremely helpful for elderly and disabled people. Flexline has drop-off points at shopping centres, hospitals and other important destinations, and booking only needs to be made 15 minutes or more before the trip takes place.

Safer street environment

Forty-eight per cent of respondents in the DPTAC (2002a[†]) study felt they would go out more if they felt more confident about the safety of walking in the streets. A safe pedestrian environment is also important in ensuring disabled people can access bus stops and train stations (ECMT, 2003). The RNIB (2002[†]) emphasise the importance of a safe street environment for blind and partially sighted people; this was seen as the responsibility of local authorities (for example, provision of audible and tactile signals at crossings) but also the general public (for example, not leaving wheely-bins in the street) (see also Connolly, 2001[†]). There is the need for cyclists to be excluded from pedestrian areas in order to ensure the safety of disabled people (RNIB, 2002[†]). Mobility training for blind and partially sighted people to help them navigate the street environment was seen as beneficial (RNIB, 2002[†]). Improved structure and provision for cycling, particularly to enable safe cycling on roads, would encourage more disabled people to cycle (Crush and Krishnan, 2004).

Joined-up transport

Ensuring that links between different transport modes are 'joined-up' is essential in enabling disabled people to travel (Wardman et al., 2001[†]; Cambridgeshire Rural Transport Partnership, 2005). ECMT (2003) point to the importance of fully accessible vehicles, infrastructure and stops, as well as ensuring that the surrounding pedestrian environment is also accessible. The RNIB (2002[†]) note that ensuring all links in the journey chain (including walking and public transport) are safe and accessible to blind and partially sighted people is necessary in order to allow them to travel independently and safely. Gant (2002[†]) notes that close links with public and community transport, including variants of dial-a-ride, as well as dedicated car parking, are essential for the success of Shopmobility schemes.

Personal security

Improving perceptions of personal security when using public transport is another key area. The Department for Transport (2004b[†]) found that camera surveillance was widely perceived to be the most effective measure for personal security when waiting for and using public transport. Providing localised information about the presence of the CCTV, the monitoring arrangements and what response would be provided in the event of an emergency should be available in large print, not only for the benefit of people with sight impairment but also to draw it to the attention of - and thus deter - potential perpetrators of anti-social behaviour. The report also recommended that 'Help Points' should be located along isolated access routes. Most of the issues discussed in this section - including improving accessibility, staff training, additional staff on buses and trains (such as bus conductors), and better provision of information - would also help improve perceptions of personal security.

Involvement of disabled people in transport planning

Porter (2002) and Barrett et al. (2003) emphasise that policy makers and transport operators need to consider how they conceptualise disability, and to recognise the different and varying needs of people with different types of disability, in planning services for disabled people. The involvement of disabled people in defining accessibility and developing public transport services is seen as essential in ensuring that their needs are met (ECMT, 2003).

6. Staying Mobile: Older People and Transport

6.1 Summary: Mobility in the Later Life-course

People's needs for and experience of transport change again in later life. People over the age of 70 predominantly travel for shopping, personal business (notably healthcare) or to visit friends. Maintaining independence and accessing essential services and social opportunities underpin older people's quality of life. A lack of transport can mean difficulty accessing essential services and facilities, such as pension services and medical services, and can lead to social isolation and loneliness. As such, transport is key to reducing the risks of social exclusion among older people.

Older people who own a car feel this gives them independence and improves their quality of life. However, declining physical mobility with age can mean giving up driving and can cause problems using public transport. As people age they become more dependent on others for transport: there tends to be a decline in driving and increase in travel as a passenger, as well as increase in travel by taxi and on public and community buses. Older people reported disliking being reliant on others for transport and tried to avoid asking family and friends for lifts for fear of being a burden on them. Public transport was viewed positively by many - when services were regular and reliable, public transport enabled people to independently access services and facilities and to socialise. Nevertheless, older people can encounter a number of barriers to public transport: difficulties with physical accessibility, heightened by the fact that people's mobility often declines with age; concerns over personal security; costs (despite concessionary fares); lack of information; and the quality of services (for example, availability, routing and reliability).

Of course, life after retirement can span a number of decades and present very changing needs. Vulnerability to social exclusion among older people increases with age and impairment, for example, the proportion of people who have severe difficulties in accessing essential services (shops, post office and doctor) increases with age. The oldest old, and older people with health problems or disabilities are most likely to be disadvantaged through lack of access to transport. Moreover, risks for older people generally are exacerbated for those in rural areas, and those from black and minority ethnic groups.

The majority of the literature reviewed focused on people above retirement age, mostly between the ages of 60 and 90. However some articles included people below retirement age.

6.2 Selected Key Findings

- Older people travel predominantly for shopping, personal business (including healthcare), and to visit friends (for example, DfT, 2005b).
- Both mobility and travel decline with age: in 1996-98, men aged 80 and over made less than half the number of journeys made by those aged 50-54, and women aged 80 and over made just over a third of the journeys made by those aged 50-54. However, older people are travelling more than they were a decade ago. From 1996-98, men aged 75-79 travelled about 3,500 miles a year, which was over 1,000 miles more than those in the same age group did in 1985-86 (Noble, 2000).
- As people age, they become less likely to travel by private transport, and there is a particular decline in levels of car driving. Travel as a car passenger, by bus and by taxi increases with age. There are differences in the travel patterns of men and women, and of older people in different ethnic groups (DfT, 2005b; CSR Partnership, 2002a; Noble, 2000).
- Older women and older people who live alone are less likely to have access to a car (Windle, 2004). Older people from black and minority ethnic groups are less likely to be licence holders than the general population CSR Partnership (2002a).

- Older people in poorer health are least likely to have access to a private vehicle or use of public transport. Use of public transport was influenced by the individual's perceptions of their own health (for example, fear of falling) and availability of transport options (Windle, 2004).
- The number of older people who hold a driving licence is expected to increase in the future. In 1996-1998, over two million over 70s held a driving licence: this is expected to more than double in the next 15 years (Noble, 2000).
- Older people who used public transport tended to use it more than other age groups: 23 per cent of women aged 70-74 used public transport 'a lot' compared to 14 per cent of women in the 50-54 age group (Marmot et al., 2003). The percentage of people who reported that they 'mainly' used public transport was relatively low in middle-age (around 25 per cent), but increased to around 40 per cent in the 65-84 age group (Gilhooly et al., 2005[†]).
- Barriers to older people's use of public transport included concerns over personal safety, problems with physical mobility and difficulties carrying shopping or heavy loads, access to private transport and unreliable services (for example, Gilhooly et al., 2005[†]; Windle, 2004; Sykes et al., 2005). Information and language could be a particular barrier to older people from black and minority ethnic groups (CSR Partnership, 2002b).
- 39 per cent of older people without access to a car and who never used public transport experienced multiple social exclusion (Barnes et al., 2005). Difficulties with transport are associated with problems for older people in accessing healthcare (for example, Clark et al., 2002[†]) and services such as the Pension Service (Kelly et al., 2004).

6.3 Why do Older People Travel?

The Department for Transport (2001) found that travel served a number of functions for older people, including, participation, independence, social interaction. Results from the Scottish Household Survey showed that women and men aged 50-64 predominantly travelled for work or education (44 per cent of men's journeys and 32 per cent of women's) or shopping (30 per cent of men's journeys and 41 per cent of women's). Over the age of 65, shopping and visiting family and friends were the most common reasons for travelling for both men and women across age groups. There was a slight increase in travelling for health reasons as age increased (*Raab and MacDonald, 2004*).

The 2004 National Travel Survey for Great Britain shows a similar pattern, with people over the age of 70 predominantly travelling for shopping (37 per cent of men's trips and 39 per cent of women's), personal business (18 per cent of men's trips and 22 per cent of women's) or to visit friends (10 per cent of men's trips and 11 per cent of women's) (DfT, 2005b).

6.4 How do Older People Travel?

Studies of older people's travel, and trends in travel for older people have found that mobility and travel decline with age, although older people are travelling more than they were a decade ago. The characteristics of, and trends in, older people's travel, are described below.

Travel declines with age

Noble (2000) found that both mobility and travel decline with age. Almost 50 per cent of men aged 80 and over had a mobility problem, compared to just nine per cent of those aged 50-54. For women, 68 per cent of those aged 80 and over had a mobility problem compared to just 12 per cent of those aged 50-44. In 1996-98, men aged 80 and over made less than half the number of journeys as those aged 50-54. Women aged 80 and over made just over a third of the journeys made by those aged 50-54. National Travel Survey data from 2004 (DfT, 2005b) showed that up to the age of 50 women make more trips on average than men, but that over 50, men made more trips than women. Evidence from the National Travel Survey 2002/2003 showed that adults aged over 65 in households without a car made fewer journeys than any other group (DfT, 2005a). Similarly, the Scottish Household Survey (Raab and MacDonald, 2004) - a large survey of a random sample of households - indicated that over time women become less likely to travel than men: in the 85+ age group, 45 per cent of men reported a journey on the previous day compared to 29 per cent of women.

However, older people are travelling more than they were a decade ago. From 1996-98, men aged 75-79 travelled about 3,500 miles a year, which was over 1,000 miles more than those in the same age group did in 1985-86 (Noble, 2000).

Mode of transport changes with age

As people age, they become less likely to travel by private transport, and there is a particular decline in levels of car driving. Travel as a car passenger, by bus and by taxi increases with age. There are differences in the travel patterns of men and women, and of older people in different ethnic groups.

Car driving declines with increasing age, but women are less likely than men to be car drivers in all age groups. In 1996-98, only 34 per cent of men aged 80 and over were the main driver in their household, compared to 78 per cent of 50-54 year-olds. Amongst women, the corresponding figures were six per cent and 47 per cent. The National Travel Survey 2004 (DfT, 2005b) found that 72 per cent of males over 70 were driving licence holders, compared to only 27 per cent of women over 70. Older people from black and minority ethnic groups were found to be much less likely to be licence holders than the general population (CSR Partnership, 2002a). Access to a car declined with age: in 1996-98, only 25 per cent of women aged 70-79 had access to a car compared to 58 per cent of women aged 50-59 (Noble, 2000). However, the number of older people who hold a driving licence is expected to increase in the future. In 1996-1998, over two million over 70s held a driving licence. This is expected to more than double in the next 15 years (Noble, 2000).

Comparing modes of transport used for each journey by different age groups, Noble (2000) found that 60-70 year old males made around half their journeys by car, a third on foot, and less than ten per cent by bus or car passenger, whereas men in the oldest age group (80+) made fewer of their journeys by car and more as car passengers or by taxis and buses. Women in the 60-70 age group made about a third of journeys as a car passenger, a third on foot, a quarter as a car driver, and around ten per cent by bus, whereas women in the oldest age group (80+) were less likely to drive and more likely to travel by bus, taxi, or private hire vehicle. Data from the 2004 National Travel Survey (DfT, 2005b) showed a similar pattern, with a decrease in car driving, and an increase in walking, use of buses, and travel as a car passenger with increasing age.

Results from the Scottish Household Survey (Raab and MacDonald, 2004) show that, for men, driving a car was the main mode of transport, but in the oldest age group (75+) there was less travel as a car driver and more as a passenger, on foot or by bus. Women aged 50-64 were most likely to drive or be car passengers, but in older age groups women were most likely to travel as car passengers,

walk, or travel by bus. In all age groups, women were less likely to drive, and more likely to be a passenger, than men. Women were also more likely to use a bus or taxi.

Marmot et al. (2003) found that 63 per cent of men and 50 per cent of women over 50 never or rarely used public transport. They found that use of public transport declines in older age groups, with 40 per cent of men and 43 per cent of women aged 80 and over saying they never used public transport, compared to 33 per cent of men and 20 per cent of women aged 50-54. However, this is likely to reflect lower levels of travel in this group. Those in the older age group who did use public transport tended to use it more than other age groups: 23 per cent of women aged 70-74 used public transport a lot compared to 14 per cent of women in the 50-54 age group. Similarly, Gilhooly et al. (2005[†]) found that the percentage of people who reported that they 'mainly' used public transport was relatively low in middle-age (around 25 per cent), but increased to around 40 per cent in the 65-84 age group. Seventy per cent of people 85 years and over reported that they mainly used public transport, although it is not clear to what extent this included community or voluntary transport.

Usual mode of transport may vary dependent on trip purpose. The Oddfellows survey (2001[†]) found that older people predominantly travelled to social activities by car, possibly because many social activities were in the evening: 60 per cent travelled by car (45 per cent as drivers, 15 per cent as a passenger), 28 per cent by bus, 6.5 per cent travelled by taxi or minibus, and five per cent walked.

Connolly (2001[†]) found that many older people in London did not have a car but made most journeys on foot: 48 per cent of journeys to a post office, bank or shops were on foot, 20 per cent by public transport, 30 per cent by local authority transport, and only 0.5 per cent by car.

Travel patterns in older people from black and minority ethnic groups

CSR Partnership (2002a) explored the use of different forms of transport by people from black and minority ethnic groups in the West Midlands (Bengali/Bangladeshi, Punjabi, Gujarati, Pakistani/Kashmiri, African, and Chinese). Very few older women in these groups held driving licences, particularly Gujarati, Bengali/Bangladeshi and Chinese women (one to three per cent held a licence), while 11 per cent of African women held licences. Men were more likely than women to hold driving licences, but the percentages were still low, with the exception of African men. Bengali/Bangladeshi and Chinese men were least likely to hold driving licences (seven per cent and 13 per cent respectively). Older members of the Punjabi and Pakistani community relied heavily on cars to travel, particularly as passengers. Bengali/Bangladeshi women also made a high proportion of journeys as car passengers. Few used public transport: 51 per cent of Bengali/Bangladeshi women said this was because of problems speaking English. Being less likely to have driving licenses or to use public transport, members of the Bengali/Bangladeshi community made fewer journeys than other ethnic groups. Chinese men and women and Afro-Caribbean women made a lot of use of the bus.

Variation in older people's access to transport and mode of travel

Older people who live alone are less likely to have access to a car than couples. In Great Britain, households with a single adult over 65 are most likely to be without a car (69 per cent; DFT 2005a). Results from the Scottish Household Survey showed that for people aged 75-84, those living as a couple were more likely to have access to a car than those living on their own (predominantly women; Raab and McDonald, 2001). People aged 65+ in rural areas are more likely to have access to a car than those in towns and cities (Raab and McDonald, 2001).

Although Windle (2004) found that 65 per cent of older people had access to a car in some way, those who did tended to be younger and healthier than those without access to a car. Windle (2004) also found that women and people who lived alone were less likely to have access to a car.

Older people without cars may also have difficulty in accessing public transport, particularly in rural areas. In Scotland, 29 per cent of older people in remote areas without a car had to walk 14 minutes or more to the nearest bus stop or had no bus service at all (Raab and McDonald, 2001). A higher proportion of people aged 65+ without a car in rural areas were more than 15 minutes walk from a bus stop (25 per cent) compared to those without a car living in cities (13 per cent). Distance to the bus

stop was assessed by asking the respondent how long it would take the interviewer to walk to the nearest bus stop, and it is possible that these figures may be an underestimation, as it may take an older person longer than the average person to walk the same distance to the bus stop.

However, the Department for Transport (2001) points out that, although access to public transport is a particular issue in rural areas, older people living in towns could also have problems accessing facilities that were not linked to public transport routes. The report also found that:

- Buses were most commonly used by people living in suburbs or town centres, people from black and minority ethnic groups, by those that did not have access to a car, and by those that had a concessionary bus pass,
- Taxis were most commonly used by those who lived in town centres, women, people on low income and people with mobility problems, and
- Women with mobility problems, those with mobility problems and rural residents were the groups most likely to be car passengers.

Salient here too is Windle's (2004) observation that older people with cars tended not to use buses, and those who used buses tended to be those who did not have cars.

6.5 Attitudes Towards Transport

The striking theme in the literature here is among older people's attitudes towards the relative value of public and private transport for quality of life and, particularly, methods of transport which enhance or inhibit independent living.

Private transport

Access to private transport is related to higher levels of quality of life. Gilhooly et al. (2005[†]) investigated the relationship between access to transport and quality of life for older people. Their survey showed that older people who owned or had access to private transport generally reported having a higher quality of life compared to those without access to private transport. The relationship between car-ownership and quality of life was stronger for men than for women. Participants in in-depth interviews described how car-ownership enhanced quality of life by broadening the range of possible activities open to them (including days out and contact with family and friends) and offering a sense of freedom.

Similarly, Banister and Bowling (2004) found that access to a car improved perceptions of quality of life amongst older people: 55 per cent of people with access to a private vehicle said their quality of life was very good or excellent, compared to 41 per cent of those without access to a car or van. In addition, they found that older people who had access to a car were considerably more likely to participate in social activities. However, traffic could make a negative contribution to quality of life; older people regarded speed and volume of traffic as a major problem in their localities, even greater than pollution and amount of crime.

Public transport

There is also evidence that good public transport is associated with improved quality of life. Gabriel and Bowling (2004) found that interviewees reported that good public transport - a regular and reliable service, and comfortable buses that were easy to get on and off - contributed to their quality of life, as it enabled people to get out and about; the availability of free passes and concessionary fares particularly contributed to quality of life for those on low income, allowing them to travel without worrying about the cost. Correspondingly, respondents stated poor public transport - inadequate services, uncomfortable bus seats and a lack of drop-steps on old buses, long walking distances to bus stops, and costly fares even if discounted - had a negative impact on their quality of life.

Banister and Bowling (2004) highlighted the importance of transport, whether private or public, promoting quality of life, firstly through enabling access to local services and social activities, and

secondly in enabling people to engage in social activities. However, they note that the effect of transport on quality of life may vary depending on locality (for example, city, suburban, rural), the characteristics of the neighbourhood (for example, the distance to key facilities such as shops and health services; the public transport in the locality; perceptions of crime and safety/vulnerability in using public transport in the locality, particularly after dark), and the individual's social networks. The authors emphasised that barriers such as vulnerability and isolation need to be addressed, as well as issues of transport provision.

Transport and independence

Parry et al. (2004) found that older people equated car-ownership with independence, and that car-ownership was highly valued among the participants. Although many car owners were on higher income, those who were on moderate or low income had to prioritise car-related expenditures over others in order to maintain their independence. For those without cars, lack of public transport in evenings and weekends was felt to restrict independent living. To make up for these limitations, participants had to combine various modes of transport, including taxis, lifts from family and friends, and community transport.

Gabriel and Bowling (2004) also found independence to be a key factor in quality of life. Older people wanted to avoid being confined indoors, to do things such as shopping for themselves, and not to be dependent on others. However, not having access to a car detracted from their quality of life through increasing their dependence on others. Reliance on public transport did not bring the same level of independence as car-ownership, and restricted people in the activities they could do. Widowed women who had been dependent on their husbands to drive particularly felt that their activities were constrained by the loss of access to a car. Similarly, Gilhooly et al., (2005[†]) found that older people were reluctant to ask family and friends for lifts, even for important trips such as doctors visits or hospital appointments. For some this meant spending money on taxis, or constraining their activities to those which were 'close to home'. Again, *the older people in Cattam's (2001) study* also talked about not wanting to be a burden on others. Making choices and being able to access the outside world independently was important, as was having transport provided when required.

Rabbitt et al., (2002[†]) explored the effects of increasing age and changes in health on car use, driving competence and general mobility. Their survey found that declining health and increasing age was associated with decreasing mileage travelled by car. Older people had positive attitudes towards car-ownership: 92 per cent of older people felt that driving enhanced independence, and 82 per cent agreed that a car was vitally important. Older people believed that giving up driving would restrict their ability to travel (93 per cent), restrict their independence (92 per cent), and result in them having difficulties with public transport (82 per cent). However, there were some positive aspects to giving up driving: 14 per cent felt that giving up driving would relieve them of responsibility, and 57 per cent felt that it would save money.

Rabbitt et al., (2002[†]) also explored older drivers' attitudes towards other older drivers. Older drivers (over 70) were not seen as a risk as long as ability was objectively assessed and that older drivers were positive about measures that might be taken to ensure their road safety. However, they were concerned about external agencies (such as GPs) imposing decisions about whether they should stop driving because of old age. Gilhooly et al., (2005[†]) found that older current drivers had negative perceptions of giving up driving and, particularly, were anxious about missing the freedom of driving and having to rely on other people. However, older people who had given up driving were generally less negative, being more likely to feel positive about being relieved of the responsibility of driving and car-ownership, and to feel that giving up driving had simplified their life. Older people who had given up driving were likely to say that they had experienced problems with public transport, but this was to a lesser extent than anticipated by current drivers.

6.6 Barriers to Travel

Public transport

The Social Exclusion Unit report (SEU, 2005) identified a range of barriers to using public transport.

- Availability: poor access to public transport, in particular, lack of services in rural areas.
- Safety: many older people were concerned about their personal safety when out and about (accidents, fear of crime, and the state of the pavements). Also, older people often felt unsafe and intimidated waiting for and using buses and trains.
- Affordability: concessions were valued, but are often restricted in terms of times and routes on which they can be used. Also, lack of availability of public transport, particularly in rural areas, could mean that concessions were not helpful in enabling older people to access public transport.
- Inflexibility: public transport may be too inflexible for specific journeys, particularly in rural areas.

Gilhooly et al., (2005[†]) looked at the percentage of older people who agreed that particular aspects of travel were barriers to using public transport, and the aspects that the highest percentage of people felt were barriers to using public transport included:

- concerns about personal security in evening or at night (65.1 per cent),
- people have difficulties in carrying heavy loads (59 per cent),
- people have alternatives to public transport available (54.5 per cent),
- possibility of cancellations (51.2 per cent),
- having to wait (51.2 per cent),
- public transport running late (49.3 per cent), and
- behaviour of some passengers (48.1 per cent).

Other barriers included issues to do with routes, difficulties in getting information, cost, comfort/cleanliness, journey time and accessibility. Younger people (45-58) reported more barriers than those aged over 59, and those without a car perceived the use of public transport to be less problematic than those who mainly travelled by car. Women reported more concerns about safety, whereas men reported more problems in obtaining information.

The Department for Transport (2001) found similar barriers. So too did Buchanan (2004). Accessibility and availability of public transport was a key concern. Whilst participants enjoyed travelling by bus, they were critical of poor punctuality and journey time unreliability, poor scheduling, difficulties in boarding and alighting, sparse networks and low frequencies outside urban areas, lack of seating and protection from weather at the bus stops.

Sykes et al., (2005) also found that many of the older people who relied on public transport reported that networks were patchy and buses were infrequent or irregular. The Oddfellows survey (2001[†]) also found that, for those who felt their social life was restricted by public transport, accessibility was the key problem - this included services at the wrong times, unreliability of public transport, no suitable routes, or no access to public transport in their area. Marmot et al., (2003) found that older people who rarely or never used public transport most commonly cited lack of availability of public transport as the reason why. Lucas et al., (2001[†]) found that infrequent or non-existent Sunday services were a particular problem for older people, as Sunday was often the day when they wanted to visit family and friends.

Lack of availability of public transport was a particular issue in rural areas. The Department for Transport (2001) found that, in rural areas, services were often less frequent and stops often took a long walk to get to. This could act as a barrier for the less mobile and lead to people feeling unsafe whilst waiting for the bus. However, the report recognised that improving the travel experience for older rural residents would require substantial investment for services without a profitable return for private companies. This reflects an observation from Lucas et al.'s study (2001[†]): older people felt that the privatisation of the buses meant that local transport operators did not see themselves as providers of public services, but were more concerned with profit and loss than meeting the needs of their passengers.

Gilhooly et al., (2005[†]) also found through their qualitative interviews with transport operators about meeting the needs of older people that disability issues (for example, wheelchair accessibility), rather than issues to do with ageing (for example, hearing loss), were more of a concern. It was also found that older people were seen as a 'nuisance' by some operators.

Public transport and physical mobility

Poor physical mobility and health are barriers for older people in accessing public transport services. Windle (2004) found significant levels of limited mobility among people aged over 70: 21 per cent were limited with lifting and carrying; 22 per cent with bending or kneeling; ten per cent with walking 100 yards; and eight per cent were housebound. Older and less physically able people were less likely to have access to a car. Limited mobility had implications for bus and train use. Some older people with mobility problems were frightened of falling when using buses or trains. Older people with mobility problems also cited poor availability (for example, no bus stop or local train station nearby) as a barrier to use of public transport (Windle, 2004).

Sykes et al., (2005) also found ill health and disability to be a barrier to using public transport. Many older people with ill health or disability in the study were limited in their ability to use public transport, particularly because of the difficulties with mounting the bus or walking to the bus stop. Simply getting on to the bus was seen as a problem for some older people in the study by Lucas et al., (2001[†]): for example, the presence of other buses or parked cars often meant that buses could not get close to the curb, and made access difficult. The Department for Transport (2001) also note that older people with sensory impairments were more likely to have problems accessing public transport.

Safety

Safety, security and vulnerability in their neighbourhoods, and when using public transport, are key concerns for older people, and this has been highlighted by a number of studies.

Bannister and Bowling (2004) found that older people in their study were relatively active during the day, with only six per cent saying they never went out during the day. However older people were less likely to go out at night, with 42 per cent saying they never went out at night. Walking about in the neighbourhood in the daytime was seen as safe by most older people - 53 per cent very safe; 35 per cent fairly safe - but at night only 12 per cent felt very safe, and 25 per cent fairly safe. This suggests that low levels of travel after dark are in part due to concerns about safety and vulnerability in the local neighbourhood. The Oddfellows survey (2001[†]) found that 22 per cent of the responders were fearful of using public transport due to personal safety concerns, and Connolly's (2001[†]) study also found that personal security, in particular, fear of crime and fear of accidents, was a concern for older people walking in their neighbourhood. The condition of the street environment (for example, uneven paving, cycles on pavement, and difficulty crossing roads) was also a concern.

Lucas et al., (2001[†]) found that older people were generally confident about travelling during daylight hours, although they had concerns about personal safety from speeding vehicles when walking. However, they were reluctant to travel after dark unless taken by car because of fears about being attacked. Some of the participants did not feel safe using trains due to the lack of immediate presence of staff. As such, coaches were seen as a preferable mode of transport even for long distances. Lucas et al., (2001[†]) also found older people to be concerned about the difficulty of using bus services alongside local school-children. The older people in the group were sometimes offended by school

children's behaviour, but also felt that boisterous behaviour of the children was a hazard for less mobile bus users.

Communication

The CSR Partnership's (2002a) research on ethnic communities in the West Midlands found that language was a barrier to getting information about transport, as well as a barrier to awareness of and to getting a concessionary pass. Language was also a barrier to using public transport for some members of black and minority ethnic groups. The survey found that around half of Bengali/Bangladeshi women, and around 20 per cent of Bengali/Bangladeshi men, Pakistani women and men, and Punjabi men did not use public transport due to problems speaking English.

Community transport

The Social Exclusion Unit report (SEU, 2005) also identified a range of barriers to using community transport schemes:

- lack of information: many people did not know about schemes,
- stigma attached to using special transport and
- inflexibility: The need to pre-book, and limited booking times, destinations, and operating hours reduced older people's use of community transport.

The capacity of community transport could also be a barrier to use. In Cattan's (2001) study, the restricted number of wheelchairs a minibus could carry and a lack of available helpers could restrict access to community activities for the least mobile older people.

6.7 Older people, Transport and Social Exclusion

A key theme in the literature is the dominant role transport has for older people in determining their risks of social exclusion. This was highlighted in the Social Exclusion Unit's report on excluded older people (SEU, 2005), which involved consultation with service providers, organisations and focus groups with older people. The report identified a lack of accessible transport as one of the key barriers for older people to social inclusion and independence.

Evidence for the role of transport in social exclusion has been provided by Barnes et al., (2005), based on analysis of data from the 2002/2003 English Longitudinal Study of Ageing (ELSA, see Marmot et al., 2003). Their report described seven dimensions of social exclusion:

- social relationships (contact with family and friends),
- cultural and leisure activities (for example, going to cinema or theatre),
- civic activities (for example, membership of a local interest group, voluntary work, voting),
- basic services (for example, health services, shops),
- neighbourhood (for example, safety and friendliness of local people)
- financial products (for example, bank account, pension), and
- material goods (for example, consumer durables, central heating).

They defined multiple exclusion as existing when people were excluded on three or more of these dimensions. Reflecting the fact that access to healthcare and shops is considered here under the broader category of 'basic services', this section does not include separate discussions of these two areas.

Lack of mobility (having no access to a private vehicle, and never using public transport) was identified as one of seven key risk factors that were most strongly related to an older person experiencing multiple exclusion. Approximately one in five older people did not have the use of a

vehicle, and these people were more likely to be excluded on any of the dimensions of exclusion than the general population of older people. Not having access to a private vehicle was strongly related to multiple exclusion across four dimensions: social relationships, cultural activities, access to basic services, and possession of material goods. In other words, people without a vehicle were less likely to have contact with family and friends or go to the cinema or theatre, were more likely to have difficulty accessing shops and health services, and possessed fewer material goods.

Locality had an effect on the extent to which the lack of access to a private vehicle impacted on exclusion (although these differences were not statistically significant due to a small sample). In more rural locations, older people without access to a vehicle were more likely to face exclusion from access to basic services such as shops and health services than those in cities. In cities, lack of access to a vehicle had more impact on exclusion in terms of limiting opportunities for social contact.

Older people without access to a car and who never used public transport constituted approximately three per cent of all older people, and this group were at high risk of experiencing multiple exclusion. Two in five of these people (39 per cent) were excluded on three or more dimensions. In particular, older people with no access to transport (public or private) were likely to have difficulty accessing financial and health services and local shops.

The Department for Transport's 'Older People: Their Transport Needs and Requirements' (2001) examines the current and future transport needs of older people. The report found that older people who did not drive were more likely than those who did drive to feel that their opportunities for leisure activities, shopping and seeing friends and family were constrained. Similarly, Perren, Arber and Davidson (2003) found that access to a car represented a barrier to older men's participation in social activities (civil and religious groups, sports and social clubs). Older people (aged 75 and above) were found to be more likely to cite lack of transport as a reason for not attending music and dance events: 25 per cent of people aged over 75 cited lack of transport as a barrier compared to less than ten per cent in all other age groups above the age of 25 years (Fenn et al., 2004).

The impact of lack of transport on social isolation and exclusion has also been highlighted by Cattan (2001), who found that lack of mobility and lack of access to transport were factors that contributed to older people's experiences of loneliness and social isolation. Access to health services, community activities and social groups was limited by availability of transport, particularly in rural areas.

Another dimension of exclusion from medical services is indicated by Clark, Sharp and Macintyre (2002[†]) in their study of older people's access to cardiac rehabilitation programmes. Staff regarded transport availability as one of the factors influencing their decision to invite a patient for treatment because they associated the lack of a car and public transport use with poor attendance on the programme, and older patients were perceived as having poor access to transport. Clark et al., concluded that equity of access needs to be ensured in order to avoid unintentional discrimination against older people based on a lack of transport.

McCann, Ryan and McKenna (2005[†]) investigated the challenges associated with providing community care for people with complex needs in rural areas. The authors identified that lack of transport for travelling the distance between clients and their care assistants was one of the main obstacles to care for older people in isolated rural areas of Northern Ireland. In particular, inaccessibility of rural areas made it difficult to recruit and retain carers.

Who is excluded?

Vulnerability to social exclusion among older people increases with age and impairment, so that the oldest old, and older people with health problems or disabilities are most likely to be disadvantaged through lack of access to transport. Risks are exacerbated for those in rural areas.

Priestley and Rabiee (2002) found that some older people's organisations failed to include older people with disabilities in their activities due to a lack of accessible transport. Organisations highlighted the importance of accessible bus-travel for older people with physical impairments.

Similarly, a study carried out by the Pension Service (Kelly et al., 2004), identified that problems with transport and travel was one factor that made it more difficult for older people with health problems or disability to access the Pension Service. Thirty-five per cent of older people who had health problems or a disability said that travel problems restricted access to the Pensions Service, increasing to 64 per cent of those aged over 75.

The most elderly older people are more likely to have problems accessing their local amenities: Marmot et al., (2003) found that 27 per cent of men and 35 per cent of women over the age of 80 had difficulty getting to hospital, compared to only four per cent of men and seven per cent of women aged 50-54. Severe difficulties in accessing essential services (shops, post office and doctor) increase with age (ODPM, 2005).

Ill health or disability in older age can cause mobility problems (walking and using public transport) making some older people with health problems or disabilities highly dependent on their cars to access services and social networks (Sykes et al., 2005). Ill health and disability could erode older people's confidence about getting out and about, and those who lost the ability to drive were vulnerable to becoming housebound and unable to access services.

Windle (2004) found that older people in poorer health were less likely to have access to a private vehicle or use of public transport and, hence, were prone to social isolation and loneliness. Use of public transport was influenced by the individual's perceptions of their own health (for example, fear of falling) and availability of transport options.

6.8 Initiatives to Improve Travel for Older People

Concessionary travel

Concessionary travel for older people is widely supported. For example, in the CfIT 2002 survey of public attitudes towards transport, involving a representative quota sample of 1725 adults across England, 89 per cent of respondents supported the provision of free off-peak travel for older and disabled people (CfIT, 2002[†]).

Similarly, *CSR Partnership* (2002b) found that 81 per cent of people in the West Midlands supported spending council tax on free travel for pensioners. Respondents in this study felt the most significant benefit of the pass was in enabling pensioners to lead more active and healthy lives, followed by 'enables pensioners to live more cheaply' and 'enables pensioners to be more independent'.

Buchanan (2004) focused on the effect of concessionary bus fares on older people's travel patterns in Scotland. Buchanan made a number of findings.

- The pass resulted in more journeys being made; this was a result of an increase in the number of people taking up the pass rather than an increase in the number of trips made by individuals.
- Demographic factors, such as age, car-ownership, and area of residence, significantly influenced the number of trips made. There was evidence of higher uptake of the pass in car-owning households. There was also evidence of an increase in travel by those on lower income, suggesting that the pass reduces social inequity;
- Since the introduction of concessionary fares, about the same proportion increased the number of bus journeys (39 per cent) as those that reduced their bus journeys (40 per cent). However, cost was no longer seen as a barrier to travelling by bus.

However, not all older people are aware of, or take advantage of, concessionary travel. In the West Midlands, awareness of the availability of a free travel pass, and take up of the pass, was lowest in inner city areas with high black and minority ethnic populations (*CSR Partnership*, 2002b). The Department for Transport (2001) also indicated that people from black and minority ethnic groups were less aware of travel pass availability (DfT, 2001). Noble (2000) found a gender difference in bus pass ownership: only 49 per cent of men aged between 70-74 compared to 60 per cent of women in the same age group held a bus pass (Noble, 2000).

The *CSR Partnership* (2002a) examined closely the use of the free travel pass - and barriers to take-up - among older people from black and minority ethnic groups. The survey found that pass take-up was lowest amongst Bangladeshi women, with 75 per cent having no pass. Passes were not held by 47 per cent of Bangladeshi men, 44 per cent of Pakistani women and 41 per cent of Pakistani men.

Bengali/Bangladeshi and Pakistani women were found to rely heavily on lifts in cars and to make minimal use of buses. However the study found levels of driving licence holding to be low in the Bengali/Bangladeshi community, meaning access to transport was very restricted for this group. Take up of the travel pass in the Punjabi community was found to be slightly below average, but this group had relatively high levels of access to cars, particularly amongst men. Take up amongst the Gujarati community was close to average - men who did not have a pass tended to say this was because they had a car, and women because of ill health. Among the Afro-Caribbean community, take-up was also close to average but people here had lower awareness of ring-and-ride schemes, along with high incidence of low mobility. Take-up in the Chinese community was high, as was the level of bus use. Thus the patterns of concessionary pass take-up and use varied widely across different ethnic groups. Language was seen as a barrier to getting a pass (*CSR Partnership*, 2002b).

Other initiatives

The Better Government for Older People (BGOP) Programme evaluation report (*Hayden and Boaz*, 2002) described pilots carried out under the BGOP programme, which aimed to listen to, value, and better meet the needs of older people. Several of the BGOP pilots enabled older people to tackle

some local transport problems. These include petitioning local transport operators for a kneeling bus, negotiating new bus routes and developing a door-to-door shopping bus.

Initiatives to improve social inclusion of older people often need to address transport problems. Some of the BGOP pilots focusing on active ageing found that addressing transport problems was essential to involve older people in active ageing opportunities. Priestly and Raibee (2002) also found that some smaller older people's organisations aimed to overcome the exclusion of older disabled people from community activities by taking a role in transport provision, for example, by providing volunteer drivers.

There are many examples of community initiatives to improve transport which are likely to be beneficial to older people. For example, The Countryside Agency (2005) describe 39 case studies of projects to address transport issues in rural areas. Several of the schemes involve the setting up of new bus routes, the provision of dedicated community transport, or volunteer driving schemes to enable older people to access shopping, health services and social activities in localities where public transport links are poor, or for older people whose mobility problems restrict their use of public transport. The case studies suggest that these initiatives have been beneficial for local older people.

Brown and Tyler (2002) describe one such project: provision of a fully accessible minibus, with an audio loop, serving rural areas, with improved infrastructure (bus shelter and platform for boarding), and information in a variety of formats (large print, Braille, and audio). The service was evaluated using a small scale questionnaire survey of bus users. They found that the bus service led to increased numbers journeys, particularly by retired people using the bus to go shopping or for medical visits.

However, in general, there is little evidence of systematic evaluation of the appropriateness or effectiveness of initiatives, or assessment of outcomes such as for quality of life or social inclusion.

What would make a difference?

Independent travel - a 'walkable neighbourhood' and local bus services

Being able to easily access services such as shops, health services, and leisure activities is very important for older people. However, many older people do not have a car, and often do not have easy access to public transport, particularly in rural areas. Although community and voluntary transport, and informal arrangements such as lifts from family are valued, older people would prefer generally to travel independently. This may be because they wish to avoid being a burden to others, but also because they want to have flexibility in their access, which is difficult if relying on lifts or voluntary/community transport. Participants in Cattan's (2001) study wanted to be able to access community and social activities that were within walking distance or on a regular bus route. Connolly's (2001[†]) London-based study also emphasised that older people, particularly those with disabilities, need a 'walkable neighbourhood' where they can get where they want to (in particular, to shops, banks and medical facilities) on foot within 15 minutes. They suggest that safety and accessibility (by foot or wheelchair) should be priorities.

Affordable, accessible public transport

Barnes et al., (2005), recognise that access to a private vehicle enhances older people's ability to take part in society, especially for those who are limited in their use of public transport. Windle (2004) argues that if current policies on promoting older people's inclusion are to be achieved, improved access to public transport and tackling age discrimination against older drivers is essential. Similarly, Barnes et al., (2005) note that the link between a lack of private transport and exclusion from social, cultural and civic aspects of older people's lives suggests that local government should focus on the provision or encouragement of affordable and accessible public transport for older people.

The focus group participants in the study carried out by Lucas et al., (2001[†]), felt that a bus conductor would help them in getting on the bus, as well as keeping children in check. The authors of the Oddfellows report (2001[†]) conclude that bus companies need to improve services outside core times,

provide more bus stops in well lit places, with seating and information - including for the visually impaired - and provide more low level buses. Rail providers need to address problems of high rail costs, and access to rail stations (for example, by providing a more integrated bus-rail service; Oddfellows, 2001[†]).

The Department for Transport (2001) report advised that respondents felt that improving punctuality of public transport might cut waiting times and therefore would help to reduce fears about personal security, especially where bus stops and train stations are poorly maintained. Actions such as giving priority to older people when boarding may help to make travel more comfortable.

Community transport

Better provision of information about - and increased availability of - existing door-to-door transport schemes would assist older people, particularly those who have limited access to other forms of transport (Oddfellows, 2001[†]). Windle (2004) also points to the fact that, as many people do not live on bus routes - particularly in rural areas - alternative transport such as community transport is essential. She notes that this is less developed in Wales than in England.

Information

The CSR Partnership (2002b) suggest there is a need for more information in a range of languages including, for example, application forms for concessionary travel in different languages to help people from black and minority ethnic groups take-up concessionary travel.

7. Conclusions

7.1 Services and Barriers

The Social Exclusion Unit's 'Making the Connections' report (SEU, 2003) identifies four particular policy priorities for accessibility planning: access to work, learning, healthcare, and food shops. The Social Exclusion Unit give further emphasis to access to other social activities, including cultural, religious and sporting activities. 'Making the Connections' also highlights five key barriers people can encounter when attempting to access these services and activities:

- the availability and accessibility of transport,
- cost of transport,
- services and activities located in inaccessible places,
- safety and security, and
- travel horizons.

This chapter discusses how the review informs understanding of these services and barriers - what it tells us about the issues for different social groups in accessing these services and activities, and which barriers are most significant for different social groups. Reflecting on the review in relation to these services and barriers also highlights key 'gaps' in the evidence base.

We also consider the transport initiatives and recommendations discussed in the literature. *A key, overarching observation at the outset of this chapter is that the review revealed a lack of systematic evaluations of accessibility initiatives generally.*

7.2 Services and Activities

7.2.1 Work

Work and young people

Accessing work becomes an issue for young people. McWhannell and Braunholtz (2002) found that public transport was the primary mode for travelling to work in urban areas, while in rural areas young people tended to use cars. The literature points out that, despite the expense, driving was perceived as essential for young people in rural areas to access employment opportunities, and that they often felt guilty about demands they had to make on economically hard-pressed parents for lifts. *Beyond such observations, there is a lack of information about how young people access employment - the modes of transport they use. This represents a gap in the literature.*

What is clearer is the evidence that a lack of transport can act as a barrier to accessing employment for young people - especially for those with lower educational attainment - although much of this work focuses on young people living in rural areas. Some employers stipulated that owning private transport was a requirement for a job. As a result, some young people described having to abandon career aspirations, even after starting formal training. Others, who were skilled, were forced into unskilled work, and some young people were unable to take up training opportunities. Young people who were unable to drive found that they were restricted by inflexible bus services, coupled with inflexible working hours which did not allow them to fit their work around bus times. The cost of learning to drive and of owning a car was prohibitive when unemployed. Young people were often unable to afford a car without getting a job - making for a 'vicious circle' of disadvantage. Unemployed young people in rural areas often needed to travel long distances to sign-on for benefits, which could be expensive (Pavis et al., 2000), and access to job-search facilities could be problematic (Titheridge, 2004).

Initiatives to improve access to employment for young people in rural areas include the provision of low-cost scooters. Cartmel and Furlong (2000) suggest that driving lessons should be provided to young people in rural areas as part of New Deal for Young People or through schools, and that employers should be encouraged to offer 'flexi-time' policies to accommodate the needs of those dependent on public transport.

Work and working-age adults

By definition, travel for employment remains a key mobility need for working-age adults. Despite marked public support for developing public transport and a range of problems associated by motorists with congestion, car use was the dominant mode for the general population, with up to two-thirds using a private car on a daily or almost daily basis. The literature suggests that, while many journeys could not have been made by public transport, travel by car was motivated less by the inaccessibility of public transport and more by the availability of a private vehicle and the perceived convenience of private travel. Although middle-aged adults were more likely to own bicycles than other age groups they were least likely to use them, and cycling was more likely to be seen as a recreational rather than functional activity. A regular theme in the literature, demonstrating the complexity of adults' mobility needs, was the difficulty of transporting children to school and travelling to work on time without using private transport.

Different groups of working-age adults faced particular transport issues in accessing work. For example, adults in low income households and those in deprived areas were less likely to have access to a private vehicle than other adults. Consequently, people on higher income were more likely to travel to work by car, while those on lower income were more likely to rely on the bus (Hine and Mitchell, 2003). Nevertheless, among low income households, those without access to a regular bus service were more likely to own a car compared with similar households with regular services (Barker and Connolly, 2005). In other words, some low income families are forced to run a car because of a lack of public transport, even if this is at the expense of other areas of essential household need.

People from black and minority ethnic households were also less likely to travel to work by car and more likely to travel to work by public transport than those from other households (DfT, 2005a; Owen and Green, 2000). Arguably, this reflects both the higher risks of people from black and minority ethnic groups of being on a low income, and the fact they live primarily in urban areas, rather than it being a direct consequence of ethnicity.

Women made fewer work-related trips than men: 14 per cent of all women's journeys were for work, compared with 23 per cent of men's (DfT, 2005a). Nevertheless, the majority of working-age women travelled regularly for paid work. For example, over half the women in Dobbs' (2005) study travelled on at least five days a week for employment. Women's travel-to-work needs are distinct from men's in at least two ways. First, women are more likely than men to hold primary responsibility for childcare within families and, as such, they are more likely to have to co-ordinate the 'school run' with their own travel-to-work needs. For these women, travel by car was often perceived as essential in negotiating the complex spatial and temporal links between home, school and work. In tension with this, the second dimension is that women are less likely than men to own a car or to hold a licence. Moreover, in households with cars, women are less likely than men to have access to the car and less likely to describe themselves as the main driver. This is further reflected in the fact that women were more likely to use public transport than men.

Another gap in the literature is a lack of data about the travel needs of disabled people, including information about their travel-to-work needs. In the context of the Department for Work and Pension's welfare reform (DWP, 2006) - and, specifically, the promotion of employment among disabled people - there is a growing demand for such data. What the literature does show is that disabled adults travelled less than non-disabled adults, and that they were far less likely to drive or live in households with cars. Travel needs and experiences are likely to vary widely among disabled people, dependent on level and type of needs arising from impairments. In general, however, the most common mode of transport among disabled people was escorted travel as a car passenger,

followed by travel by local bus. *Around half of the disabled people in the DPTAC (2002a) survey had used transport initiatives, such as volunteer drivers, Motability, dial-a-ride and community transport.*

In contrast to these groups, adults in rural communities were more likely to own cars (and rural households were more likely to own more than one car) than those in urban areas. The high level of dependency on car use reflects the limited availability of public transport in rural areas. Nevertheless, problems in accessing work were not equally distributed among all rural residents *per se*. The literature suggests that accessibility problems were felt most by people on lowest income, young people and old people (Scottish Central Research Unit, 2002).

The literature highlights that all these groups - people on low income, people from black and minority ethnic groups, women, disabled people, and rural residents - face increased risks of constrained employment opportunities because of accessibility. A theme across the literature is that access to private transport is often associated with enhanced employment opportunities by, for example, expanding the range (proximity and location) of prospective employers who could be accessed. Dependence on public transport could undermine jobseekers' opportunities because of the costs of using services, and the availability of services (with particular problems noted, for example, for shift workers and those needing to travel to work at unusual hours). In at least one study, employers were reported to discriminate against jobseekers who lived in areas where transport routes were known to be inadequate or unreliable (Solomon, 2000[†]). These issues are likely to be more acute for car-less rural residents (than urban dwellers) given the greater travel-to-work distances they are likely to face, and the typically more limited public transport services in rural areas.

Regarding low income adults generally, the Department for Transport (2002b) found that 13 per cent of working-age respondents said they had decided not to apply for a particular job in the last 12 months because of transport problems. Many low income households with access to a car still had to weigh up the additional income available from work and the costs of using a car to access the job. Thus, access to a car did not necessarily expand employment opportunities (Froud et al., 2005[†]). In terms of ethnicity, Patacchini and Zenou (2005) suggested that because levels of car-ownership were higher among white jobseekers they engaged in more job-search activities than jobseekers from black and minority ethnic groups. In terms of disability, *Campion et al. (2003) found that about half of disabled people in their survey had turned down a job offer or job interview due to lack of accessible transport, and about half said that lack of transport had restricted their choice of job.*

The literature suggests that the relationship between accessibility and women's disadvantage in the labour market reflects the fact that they are more likely than men to be responsible for childcare and less likely to have access to a private vehicle. The need to co-ordinate work and childcare can limit employment opportunities because it can restrict the distances women are able to travel away from school/childcare provider and home. Women tend to live closer to their workplaces than men and, for example, McQuaid et al., (2001) found that of all jobseekers, women and those with dependent children were least likely to travel longer periods to work. Focusing on car access, Dobbs (2005) discusses a cyclical problem whereby women without access to private transport were unable to access jobs or better paid jobs and, hence, remained unable to afford a car.

In terms of initiatives to improve accessibility to employment, the focus in the literature is on improving the accessibility of public transport for adults on low income, including subsidised services, concessionary fares and integrated ticketing. Initiatives for improving accessibility to employment for rural areas includes extending public and commercial bus services, for example, a rural rail service, a dedicated service from rural areas to an industrial site, or feeder services for integrated transport provision.

There is little evidence of initiatives targeted specifically at the travel needs of women. This represents a gap either in the literature or service provision. The literature calls for greater sensitivity among employers, schools and childcare-providers to the demands on women of co-ordinating childcare responsibilities with work. Skinner (2005) argues that having childcare and education under one roof would alleviate these demands on women. The literature also raises questions of whether strategies to reduce car use will have a disproportionate impact on women. This

could be true if policy focuses on tackling car use for school runs rather than car use for employment or if, within families, car use for work is assumed to take precedence over getting children to school. Reducing car use may make it more difficult for women to negotiate complex journeys unless public transport is provided in a way that meets women's needs.

Again, there is little evidence of initiatives targeted specifically at the travel-to-work needs of disabled people. This too represents a gap either in the literature or service provision. Initiatives for the general transport needs of disabled people often concern community transport services - including services such as dial-a-ride. However a limitation of these services is that they are not designed to access employment.

7.2.2 Learning

The prime mobility need for children and young people is access to school. The literature identifies the most common modes of transport as walking, being driven by parents and travelling by bus. Key issues here are the increasing rate of travel to school by car, and demands on parents in escorting children to school before making it to work in time. Enthusiasm for travel by public bus services among young children changed into criticism of public bus services among older children. School buses tended to be viewed more positively by children than public buses, as children had guaranteed seats, and were less likely to have problems getting to school on time (McWhannell and Brauholtz, 2002). Although a far less common mode of transport, cycling also lost appeal among older children. Barriers to travel included concerns over safety (see below) but also, for example, school policies on school uniform (inappropriate for cycling) and bans on cycling, as well as lack of bicycle storage facilities.

Current home-to-school travel entitlement rules mean that children are only entitled to free transport if they attend their nearest suitable school and live three miles or more away from it, or two miles away if aged under nine. This means that transport can limit choice of schools among children, particularly low income children or those wanting to attend particular faith schools. *The Social Exclusion Unit (2003) recommend that new home-to-school transport entitlements should be piloted so that children could benefit from equal access to specialist or faith schools, or schools offering alternative curricula. However, more research would be helpful here in order to appreciate the scale of this problem.*

School travel plans have been advocated as a way for schools to assess travel to school, to identify safety concerns, and to promote walking to school. However, there is little evidence that this approach is successful in changing travel to school. Initiatives to reduce car journeys to school include various dedicated bus services. Staggered school times were found to be efficient in transport terms, because one bus could serve more than one school. However, teachers, pupils and parents experienced difficulties with the scheme, including difficulties for working parents in co-ordinating work and childcare, and the inconvenience of very early start times and late finish times. Initiatives also include 'walking bus' schemes, which involve younger children walking to school together on an organised route, supervised by a number of responsible adults. The literature suggests that efforts to increase travel by walking and cycling - among the general population as well as for children and young people - should focus on developing cycling routes and safer walking routes.

An area for more research would be a more detailed examination of how young people access further education. The review highlights that, for young people in rural areas, transport can influence decisions about post-16 education. In London, transport problems were reported as a key factor in students' attendance (arriving late or being absent). However, from the literature captured in this review, information on the accessibility of learning for young people appears thin.

A number of studies highlight issues in accessing adult education. For example, in rural areas, evening classes can often only be reached by those with cars, and a lack of transport can diminish opportunities for adult further education (Cambridgeshire Rural Transport Partnership, 2005). Women in education with childcare responsibilities can face many of the same demands as similar women in employment in terms of co-ordinating the school run and their own education. In terms of disability, *21 per cent of the disabled people in Campion's (2003) study felt that problems with transport had limited the range of adult education and training courses available to them.*

7.2.3 Healthcare

The literature recognises problems with transport for accessing healthcare. In a national review of Local Transport Plans, nearly half identified problems with patient access to health services. One reason for this was an assumption that private transport would normally be available (Hamer, 2004). Indeed, about one-fifth of households in England without access to a car have reported some difficulty in accessing healthcare (DfT, 2005a). Problems in accessing healthcare are likely to be exacerbated for people in poor health: while access to a car can be important for accessing healthcare, people in poor health are less likely to have access to a car.

The literature indicates that four groups face particular issues in accessing healthcare: people in rural areas, women, disabled people, and older people.

Problems with accessing healthcare for rural residents without access to private transport reflect the lack of availability of public transport, compared with that typically available to urban residents. Other barriers include difficulties with using mountain roads in bad weather, and the uncertainty of having to rely on other people to provide lifts. Access has become more difficult as a result of the centralisation of hospital services in urban areas (Farrington et al., 2004; Brand et al., 2004). It is likely that patients in rural areas have further to travel to access specialist healthcare than those in urban areas, and it is possible that they will be faced with having to balance the value of treatments available in specialist centres and the difficulty in accessing transport to those centres (see Bain et al., 2000, 2002). Dependence on other people for lifts, and lacking choice in using any other than the most local service provider can undermine patients' privacy when accessing personal health services.

Women are more likely to report difficulty in accessing hospitals and GP practices than are men. Hamilton and Gourlay (2002[†]) found that half the women antenatal clinic attendees in their survey had difficulty accessing the hospital, particularly those who travelled by bus. Sixty-nine per cent of missed maternity care appointments were due to transport or transport-related factors. Sixty-six per cent of respondents who had missed an appointment had other children, and this was seen as making long bus journeys more of a problem. In other words, lack of adequate transport coupled with caring responsibilities could make it difficult for women to access hospital appointments, and this is likely to be especially true for women on low income. Indeed, research has reported incidents where low income mothers without personal transport deliberately missed their own health appointments to ensure that lifts to hospital from relatives would be available for their children's health needs (Bostock, 2001).

Disabled people are more likely to have difficulty accessing health care than members of the general population. Twenty per cent of the disabled people in Campion's (2003) study said that it was difficult or impossible to get the healthcare they needed due to inaccessible transport. Lack of private transport in particular, as well other barriers including costs of public transport, meant that significant proportions of disabled people had experienced being unable to collect prescriptions or attend healthcare appointments. Problems with accessible transport to health care for disabled people is likely to contribute to health inequalities, and disabled people are more likely than non-disabled people to face poorer health and disruption of treatment, and less likely to be able to exercise choice in seeking health care.

Travel for healthcare increases in later life. Older people without access to private or public transport were most likely to have difficulty in accessing healthcare, yet older people in poorer health were least likely to have access to a private vehicle or to use public transport. The most elderly older people are more likely to have problems accessing their local amenities: Marmot et al., (2003) found that 27 per cent of men and 35 per cent of women over the age of 80 had difficulty getting to hospital, compared to only four per cent of men and seven per cent of women aged 50-54.

In addition to schemes and recommendations for the general improvement in the availability and accessibility of public and community transport services, the literature considers a number of initiatives specific to enhancing the accessibility of health services. These include, for example, the Patient Transport Service, outreach services such as the District Nursing Service, allowing patients choice when booking hospital appointments, the development of integrated public and specialist transport services to health facilities, voluntary driver schemes and coordinated community transport, linking the timing and booking of health services to transport timetables, and improving information about transport to health facilities.

7.2.4 Food shops

The literature indicates that accessing supermarkets can be difficult for households without private transport (for example, DfT, 2005a). However, little research captured in this review focuses on the accessibility of quality food shops (i.e. those selling fresh fruit and vegetables). The only group for

whom access to food shops is a distinct issue in the literature is people in rural areas. Pavis et al., (2000) highlight that in rural Scotland much of the accommodation available to young people (aged 18 to 25 years) was in rural areas where the nearest supermarkets could be a 20 to 30 mile round trip away. Similarly, Cartmel and Furlong (2000) observed that certain goods were not available in rural areas, or were very expensive unless people had transport to the nearest town. Decline in rurally-situated services (such as primary schools, post offices, supermarkets and petrol stations) and their re-location in urban areas has eroded the availability of key services in rural areas (Countryside Agency, 2004). Concerns about access to healthy food by people on low income in rural areas have been raised in White's (2003[†]) community study, which points to the unavailability of fresh fruits and vegetables in local shops and transport difficulties in accessing supermarkets.

Further research targeted at access to food shops appears important for the current evidence base.

7.2.5 Other social activities

The literature *en masse* suggests a dynamic whereby travel for social activities develops in youth; younger adults (aged in their 20s to 50s) become, with age, increasingly less likely to visit friends, while older adults (aged 50+) become more likely to visit friends; and, for those over the age of 65, visiting friends and family, and shopping, were the most common reasons for travelling.

The literature highlights distinct issues for children and young people in rural areas in accessing after-school clubs and leisure and sports activities, particularly for those in low income families without access to private vehicles, and where public transport was limited and infrequent. Seventy-one per cent of children who usually travelled by car said they used out-of-school clubs compared to 39 per cent who did not usually travel by car (Farmer, 2005). *More generally, information is limited about the travel needs and experiences of children beyond those related to travelling to school. It could be that this information is subsumed in data about adults' travel needs and escorting roles, but clarity and detail is lacking in this area.*

Young people aged 16-24 were more likely than older age groups to cite lack of transport as a barrier to attending music and dance events (Fenn et al., 2004). In order to access social activities, many young people relied on parents to ferry them about on evenings and weekends, though they often did not like this reliance on parents (Martin et al., 2004[†]). The literature reports frustration among young people in rural areas about the lack of public transport in the evenings. More generally, young people often did not use late night services because the last bus or train was too early in the evening. The infrequency of late night services meant that young people could be stranded if they missed a bus. On the other hand, in accessing evening social activities, young people with cars were likely to choose to use public transport or taxis so that they could drink (McWhannel and Braunholtz, 2002).

The literature on the general population of working-age adults reiterates the significance of private transport: access to car is an important predictor of households' social, leisure, cultural and sports activities, as those without access to a car were less likely to engage in these activities. With regard to ethnicity, the literature touches on the issue that public transport in the UK has not responded to meet the religious and cultural needs of black and minority ethnic groups.

Lower levels of car access among women may make it even more difficult for them to access social, cultural or leisure opportunities. For women without cars and with primary childcare responsibilities, difficulties in negotiating public transport with children, can further compound the inaccessibility of these activities. This has implications for parents' access to personal support from social networks, and for their ability to provide social, cultural, leisure or sporting opportunities for their children. Low income mothers, who are reliant on walking as their main means of transport, can be effectively excluded from leisure opportunities for themselves and their children which are not within walking distance. This was an acute problem for low income mothers living in areas with limited leisure opportunities and a lack of safe play areas (Bostock, 2001).

Lower levels of car-ownership and the relative inaccessibility of public transport also restricts access to social activities for disabled people. For example, 30 per cent of the disabled people in Campion's

(2003) study stated that inaccessible public transport made it difficult to attend social functions, and this rose to 45 per cent of those without access to a car. The literature argues that, in this sense, transport plays a significant part in shaping the physical social exclusion of disabled people. Similar issues are reiterated in the literature about older people. Barnes et al., (2005) identified lack of mobility (including chiefly lack of access to private and public transport) as one of the seven key risk factors most strongly related to an older person experiencing multiple social exclusion. The literature suggests that access to private and public transport diminishes among more elderly older people and among those in poorer health, thus increasing their risks of social isolation and loneliness.

7.3 Key Barriers

7.3.1 *The availability and accessibility of transport*

A persistent theme in the literature was problems with the availability and accessibility of transport services. While this was true among most social groups, issues varied for different groups.

A lack of available, adequate services was probably the most common problem. For example, parents of school children pointed to a limited availability of school buses, or that collection points were too far away from their homes. The timetabling and routing of bus services did not always meet young people's needs, with a lack of evening services being a particular barrier for this group. Lack of availability of community transport was problematic for disabled people and older people.

Unreliability and infrequency of services was cited as a barrier by the general population, and by particular social groups including children, young people, women, and older people (although young people highlighted trains as being perceived to be more reliable than buses). Most of the young people in McWhannel and Brauholtz's (2002) study said that they would use public transport if it was guaranteed to get them to work or college on time. Women travelling with children were likely to perceive the unreliability of bus services as an acute problem, given concerns about risking children to long waits in bad weather.

Rajé et al., (2003a) found that women were poorly served by bus routes. City bus routes tended to be radial, meaning that women's journeys by bus often involved complex trip chains where it was necessary to travel into the city then out again to their destination. As well as taking a long time, these journeys involved multiple fares, and this was a barrier for some women in maintaining social networks and family ties.

Although people in deprived areas were more likely to use buses - and more likely to be satisfied with bus services - than those from other areas, a lack of available services was more of a barrier to use than cost among low income families.

There is some suggestion in the literature that because the timetabling of public transport services tends to reflect the Christian religious calendar - and because the routing of services tends to be radial, focused on town centres, rather than linking non-central districts - public services may not address some of the needs of black and minority ethnic groups. *This is a complex issue which does not appear to have been explored adequately in the literature.*

However, the group for whom transport services are least available is people living in rural areas. For example, the Department for Transport (2005a) reports that only 51 per cent of rural households are within a 13 minute walk of a bus stop with at least an hourly service, compared with 96 per cent of urban households. The Cambridgeshire Rural Transport Partnership (2005) notes that the level of public transport service in rural Cambridgeshire appeared to depend more on the nearness to a main road than the size of the community. The Countryside Agency (2000) reports that despite the fact that public and community transport provision in rural areas increased by up to five per cent between 1997 and 2000, 29 per cent of smaller settlements still had no public transport service.

Three groups faced distinct barriers to physically accessing public transport: parents travelling with children, disabled people and older people. Women travelling with children reported difficulty in boarding services, alighting and buying tickets. Bus design (step-height, inadequate luggage space) emerged as another major concern. Hine and Mitchell (2001) observe that parents found travelling with children by public transport arduous and stressful, particularly when also carrying luggage or shopping.

Physical accessibility is a key issue for disabled people in using transport. Disabled people with mobility problems may be unable to walk to bus stops or to stand and wait for a bus, which limits their use of public transport. Boarding and alighting can be problematic and a source of anxiety. Low-floor buses, even where provided, may not be provided consistently and may not be accessible by

all wheelchair users. Problems with motorists parking at bus stops can mean that buses are unable to pull in at the curb, making even low floor buses inaccessible. Street design generally (for example, gradients, the lack of dropped curbs) could act as an obstacle to free movement. Blind and partially sighted people reported that lack of continuity of bus design made it difficult for them to get on and off buses and find a seat. Disabled people reported problems with bus drivers not stopping at bus stops for them, and this was a particular problem for blind and partially sighted people who often are unable to tell which bus is coming and signal for the bus to stop. More broadly, problems accessing services meant that journeys often had to be planned well in advance. Uncertainty about, for example, whether accessible services would be available or whether support from transport staff at service interchanges would materialise served as a disincentive to travel.

Similarly, poor physical mobility and health are barriers for older people in accessing public transport services. Older people reported concerns about boarding and alighting services, and lack of seating. Some older people with mobility problems were frightened of falling when using buses or trains.

The literature highlights that lack of accessible information is a distinct barrier for disabled people, particularly blind people, and for some members of black and minority ethnic groups, especially older people in these communities.

Initiatives and recommendations in the literature to enhance the availability and accessibility of services focus on, for example, improving bus services and promoting community transport schemes in rural areas; promoting community transport schemes for disabled people; making service routes more responsive to users' needs; improving the physical accessibility of services to better accommodate the needs of women travelling with children, disabled people, and older people, including improving customer care so that staff offer more assistance. Specific recommendations include, for example, greater provision of multi-lingual travel information and information tailored for disabled people. A number of studies propose disability training for front-line staff. Various studies call for greater consultation of women and disabled people in the planning and development of transport provision.

7.3.2 Cost of transport

While children's bus fares and other travel costs are usually paid by parents, young people increasingly pay for transport themselves. Young people reported finding public transport expensive, especially when journeys involved interchanges across services, and the cost of fares could restrict their opportunities. Young people over the age of 16 found public transport particularly expensive, as they became liable to pay full-priced fares. Young Persons Railcards were often judged unaffordable, especially as they did not cover buses in addition to trains (Lucas et al., 2001[†]). Cost was also the most common barrier to learning to drive, particularly for young women.

Costs of transport increased and became more of a problem for young people in rural areas. Unemployed young people can experience a cyclical problem in which transport to work - by public transport or car-ownership - is restricted because of costs, while unemployment reduces young people's ability to meet transport costs.

A similar phenomenon is described in the literature for unemployed adults. Indeed, the group for whom costs of transport represent a barrier were low income households. For example, children from low income families who are unable to afford travel costs may have a limited choice of schools, and may not be able to access schools offering alternative curricula or particular faith schools. Moreover, a lack of private transport and the costs of public transport made low income mothers particularly reliant on walking as a means of transport, and this constrained their opportunities and ability to access services for themselves and their children.

Low income households were less likely than other households to have access to a private vehicle. Those which ran a car were likely to have done so because of inadequate local public transport, prompting Froud et al.'s (2005[†]) observation that motoring is no longer segregated into rich users and poor non-users, but rich new car users and third-hand car users who have little choice but to run a car.

Low income car owners spent a far higher proportion of their income on motoring than wealthier households, and often had to restrict their mileage to reduce petrol costs. Indeed, the literature found that unemployed adults with access to a car still had to weigh up the additional income available from work and the costs of using a car to access the job.

Some low income households also reported difficulties affording public transport. Solomon (2000[†]) suggests that those who experienced the most difficulty affording public transport were working people on low income because cheaper tickets were rarely available at the times they had to travel. Solomon (2000[†]) also notes that people on low income had low uptake of weekly tickets, even when this would have worked out the cheaper option over the week, and this seemed to be because they found it difficult to part with a larger 'up front' sum.

Higher costs for transport were an avoidable and essential additional expense for adults in rural areas. Dargay (2002) found that the level of car-ownership among rural residents was more resistant to increases in car purchase costs and fuel costs than that among urban residents. This reflects the dependency of rural residents on car-ownership, in the absence of adequate public transportation. An implication here is that increases in car running costs have a more marked impact on rural households than urban ones because rural households have no alternative but to pay the extra costs.

Disabled people face additional transport costs through lack of choice of transport mode, or the need for special transport. The cost of public transport is a barrier to travel for many disabled people, with the high cost of taxis being a particular problem. It is likely that travel costs are a barrier for some disabled people's access to health and welfare services (Focus, 2001).

Initiatives to address travel costs for young people include strategies such as the 'Kids for a Penny' scheme in Trent (SEU, 2003) which allowed very low cost travel at off-peak times during the week and throughout the weekend. Transport subsidies have been piloted as part of the Education Maintenance Allowance. The evaluation of this initiative suggested the EMA(T) did not have a strong impact, being associated with higher levels of bus use, with a small but non-significant increase in participation in further education, but not leading to students travelling further for further education (Perren et al., 2003a).

There is a range of special taxi services available at reduced costs for disabled people. However, apart from services to take disabled children to and from school, services for disabled adults in the UK are at the discretion of the local authorities. Only 42 of 150 local authorities were found to use voucher schemes, with vouchers varying in value between authorities from £20 to £300, and the numbers qualifying for such schemes usually highly restricted (ECMT, 2001). Although concessionary bus fares are available to disabled people, these appear to have had little impact for those who cannot access public transport either because of the lack of availability of transport in their local area, or because the available transport is difficult for disabled people to use (Reid Howie Associates Ltd, 2004[†]).

More generally, the literature includes proposals for increased targeting of subsidies, concessions and integrated ticketing on public transport for people on low income (Hine and Mitchell, 2001; Barker and Conoly, 2005).

7.3.3 *Services and activities located in inaccessible places*

The literature about people living in rural areas identifies the problems of accessing services which have been moved from local communities and centralised in urban areas. *However, a striking gap in the literature captured in this review is the lack of research on the geographical inaccessibility of services and activities.* The transport-centred onus in the literature reviewed here means that the emphasis tends to rest on the problems of transport reaching services and activities, rather than the location of those services and activities.

7.3.4 *Safety and security*

Concerns over safety and security highlighted in the literature involved a number of themes. The first was about concerns over traffic danger, and this was raised most frequently in relation to children travelling to school independently of parents, either cycling or walking. Parental concerns about children's safety was the main reason for restricting children from travelling by bicycle or walking. The literature observes a cyclical problem in which parents refused to allow their children to walk to and from school because of the dangers associated with local traffic congestion, but by driving to collect their children from school thereby caused traffic congestion (Gilhooly and Low, 2005). Concerns over traffic safety were also highlighted in the literature as a barrier to cycling among adults. Speeding vehicles were identified as a hazard by older pedestrians (Lucas et al., 2001[†]).

By far the dominant theme in this area referred to concern over personal safety and anxiety over verbal or physical threat. For children, parents' fears over 'stranger danger' restricted their independent travel either by foot, bicycle or public transport. Most children (aged 8-15) felt safe walking in their neighbourhoods, and children felt safer as they got older (Farmer, 2005). Of those who felt unsafe, fears included abduction by strangers, bullying from other children or teenagers, and danger from traffic and dogs. With regard to walking to school, children were less worried about 'stranger danger' than parents, and more concerned about traffic danger.

The literature tends to highlight personal safety concerns associated with travel by public transport, including passengers' anxieties while waiting for services and using services, and concerns about the immediate environments of stations and bus-stops. The Department for Transport (2004b[†]) found that young people (aged 12-16) were less likely than adults to feel secure on public transport: over 30 per cent of young people said that they used public transport but had concerns for their personal safety. Moreover, young people are more likely than older people to report being the victims of anti-social behaviour or crime on public transport.

For the general population, public transport use was more likely to be mediated by the availability and accessibility of services rather than safety, though improving the environment and increasing safety at stations and bus stops was proposed to make services more attractive (Derek Halden Consultancy, 2003b). In contrast, the literature suggests that for people from black and minority ethnic groups concern over personal safety represents a distinct barrier to public transport. The Department for Transport (2003a[†]) explain that for members of these communities, fear for personal safety - particularly from racial attacks - encompasses concern when using services, and walking to, and waiting at, bus stops or train stations. This anxiety can be exacerbated where language difficulties mean that people are unable to access the travel information which can help with planning safer journeys. More than one-third of Hindu, Muslim and Sikh organisations reported that their members had been discriminated against on public transport (Weller et al., 2001[†]). The Department for Transport (2003b) report that nearly a quarter of young people from black and minority ethnic groups experienced harassment on public transport due to their colour, race or religion. Girls and women were more likely than boys and men to be concerned about personal safety when travelling. Girls were less likely than boys to travel independently, and less likely to feel safe walking alone in their neighbourhoods. Among women, concern over personal safety on public transport predominantly focused on fear of attack, in some cases while on the bus or train but especially when waiting at, or walking to and from, the bus stop, train or underground station. Women were also more likely than men to cite concern over safety as a barrier to walking and cycling.

Disabled people were almost twice as likely as non-disabled people to report safety concerns about using public transport (DPRAC, 2002). Concerns were largely about *being subject to discrimination, abuse or violence*. Disabled people reported feeling that, *as they were unable to react quickly to potentially dangerous situations, they were vulnerable to anti-social and criminal behaviour*. *One in four of the people with learning difficulties interviewed by Mencap (2000[†]) reported experiences of bullying when using buses*.

The majority of older people reported concerns about walking in their neighbourhoods at night (while most felt safe during the day) (Bannister and Bowling, 2004). The Oddfellows survey (2001[†]) found that 22 per cent of the responders were fearful of using public transport due to personal safety concerns. Older people's fears included fear of crime and personal attack and fear of accidents.

Concerns about safety among disabled and older people also include anxiety about falling or having accidents whilst travelling. For example, *disabled people described accidents they had because of features of the street environment such as uneven pavements or a lack of barriers around stairs* (Barrett et al., 2003; RNIB, 2002). Older people have reported finding it difficult to use bus services alongside local school children, whose boisterous behaviour was perceived as a hazard for less mobile bus users (Lucas et al., 2001[†]).

Finally, for disabled people a particular theme on the topic of personal security was fear of being let down by public transport services and, as a result, being left 'stranded'. *This uncertainty was a major source of stress for disabled people and acted as a disincentive to travel*.

Initiatives for children's travel include cycling proficiency and pedestrian (road safety) training. Traffic calming measures slowed traffic down in the vicinity of schools, but did not reduce traffic volume. The literature suggests that safer cycling and walking routes (achieved through traffic calming strategies) could encourage children's independent travel to school and reduce car use. Initiatives such as school bus schemes and 'walking bus' schemes are likely to allay parental concerns about their children's safety when travelling to school. The literature proposes that providing school buses with adult supervision would reduce parents' and children's concerns about rowdiness and bullying. Comparably, proposals in the literature for improving the accessibility for older people and for disabled people referred to the re-introduction of conductors in order to aid access, reduce fears about safety and vulnerability and maintain order among school children.

In terms of ethnicity, improved multi-lingual information about public transport services - as proposed in the literature - might help people from black and minority ethnic groups plan safer journeys. In terms of gender, the Department for Transport (2004a) found that both men and women felt that their security would be enhanced on public transport with CCTVs at bus stops and train stations, a well lit environment, visibility of bus stops from the road and the presence of staff at train stations. When travelling by bus or train, women were more likely to want an additional member of staff on the bus or train, and the refusal of passengers under the influence of drugs or alcohol.

For disabled people, the literature calls for a safer street environment, with clearer pavements and, for example, tactile crossings at signals for blind or partially sighted people. It also calls for measures to improve disabled people's perceptions of personal safety on public transport, such as the presence of CCTV cameras and monitoring, 'help points', improved accessibility, staff training and better provision of information.

7.3.5 Travel horizons

Some attention in the literature is given to the impact of transport on people's willingness to travel longer distances to work. Low skilled adults, on the one hand, and highly specialised workers are willing to travel longer. People without access to private transport and women with dependent children are least likely. *However, on the basis of this review, the body of research on the issue of travel horizons appears rather thin, and this would be another area deserving further attention*.

7.4 Needs, Barriers and Gaps in the Evidence Base

This chapter has summarised the review in relation to the policy priorities and key barriers to accessibility identified in the 'Making the Connections' report (SEU, 2003). In doing so, a number of gaps in the literature have been identified. In this context, these represent strategic priorities for further research to strengthen the evidence base on accessibility issues for different social groups:

1. More comprehensive, systematic evaluation of accessibility initiatives.
2. More information on the travel modes used by young people in accessing employment and further education.
3. Research on the travel needs of disabled people, with specific reference to their travel-to-work needs and initiatives targeted at meeting their travel-to-work needs.
4. Greater evidence on the travel needs of women. The review highlights a lack of information on initiatives targeted at the travel needs of women, indicating either a gap in the evidence base or in service provision. It should be emphasised that in order to meet this objective, research is required on 'gendered' travel needs - the differentiated travel needs of men as well as women.
5. More evidence on the accessibility of choice of schools for children in low income families.
6. Evidence on the accessibility of quality food shops.
7. Clarity on the travel needs and experiences of children in accessing services and activities outside school.
8. Evidence on the extent to which current service provision, specifically routes and timetabling, meet the needs of people from black and minority ethnic groups.
9. A review of the need for greater understanding of the relationship between accessibility and the geographical location of services and activities. The tentative tone of this objective reflects the possibility that research on this issue may exist in other literatures (in the field of town planning, for example) which has been missed by the review because of its transport-focused onus.
10. Greater evidence on people's travel horizons, specifically exploration of factors influencing people's willingness to travel to access employment.

8. Main References with Details

Reference	What did study involve?	How Was Sample Selected/Recruited?	†Caveats - Reservations About Research?
AA Foundation for Road Safety Research (2000). <i>The Family and the School Run: What would make a real difference? Summary report</i> . AA Foundation for Road Safety Research.	Mixed-method study - including a survey of 500 parents and 20 households in-depth.	Not stated.	No information about sampling or methods.
Accent Marketing & Research (2002). <i>UK Bus Priorities Modal shift</i> . L.E.K. Consulting	Study involved 1104 bus users, 1269 car users.	Interviewees selected at random from a range of towns and route types across UK (no information on how towns or households were identified).	Results from stated preference study reflect only hypothetical choices .
Accent Marketing & Research (2003). <i>Transport Direct: Phase 2 Public consultation</i> . Department for Transport	Survey of 1200 individuals.	To be representative of population of England, Scotland and Wales.	
Alsop, R., Clisby, S., Craig, G., Evans, R., Hockey, J. (2002). <i>Beyond the bus shelter: young women's choices and challenges in rural areas</i> . YWCA	Qualitative study with young women in rural areas.		
Anable, J and Gatersleben, B.(2005). All Work and No Play: The role of instrumental and affective factors in work and leisure journeys by different travel modes. <i>Transportation Research Part A: Policy and Practice</i> . 39. 163-181	Survey of 235 individuals.	Staff, academics and postgraduate students from University of Surrey and local councils.	

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

Anable, J. (2005). 'Complacent Car Addicts' or 'Aspiring Environmentalists'? Identifying travel behaviour segments using attitude theory. <i>Transport Policy</i> . 12. 65-78	Survey of 666 individuals .	Questionnaire given to visitors to National Trust properties near Manchester.	
Anderson, S., Stradling, S.G.(2004) Attitudes to car use and modal shift in Scotland. Scottish Executive Social Research	Survey of 1665 Scottish adults	Data from the Scottish Social Attitudes Survey 2002.	
Atkinson, J., Miller, L., Gerova, V. (2002). ESF Leavers Survey 2002. Institute for Employment Studies	Survey of 3431 individuals; 382 projects.		
Atkinson,R., Kintrea,K. (2000). Owner-occupation, social mix and neighbourhood impacts. <i>Policy and politics</i> , 28 (1) 93-108	Qualitative study involving completion of diary by 38 households.	Three estates in Paisley, Motherwell and Edinburgh where owner occupation was introduced in 1990s. Selected from estates where there had been significant amount of subsidised private development. Another criterion for selection was that owners and renters were living on same streets and not physically separated by main roads, open spaces and other barriers.	
Bain, N.S.C., Campbell, N.C. (2000) Treating patients with colorectal cancer in rural and urban areas: a qualitative study of the patients' perspective. <i>Family Practice</i> , 17(6), 475-479.	Interviews with 32 individuals .	Patients and relatives of patients in various stages of treatment for colorectal cancer.	

Bain, N.S.C., Campbell, N.C., Ritchie, L.D., Cassidy, J. (2002) Striking the right balance in colorectal cancer care - a qualitative study of rural and urban patients. <i>Family Practice</i> , 19(4), 369-373.	Interviews with 95 individuals in rural and urban areas.	Patients and relatives attending oncology and surgical out-patient clinics for colorectal cancer and chemotherapy out-patients and in-patients.	
Baker, J., Byers, A., Clark, O., Clifford, S., Banister, D. (2005). Scope for Public Transport Improvements to Contribute to Increases in Economic Activity. The Welsh Assembly.	Not stated.	Stakeholders from organisations working in the sector. Jobseekers attending Jobcentre Plus at two locations. Also jobcentre staff.	.
Balcombe, RJ, York, IO, Webster, DC (2003) Factors influencing trip mode choice. TRL Report, 568	First Traveller Survey 2800; second Traveller Survey 595.	Sample members had made one regular journey of at least five miles (one-way) and any other journey of at least 15 miles long, not more than one month previously, and they must have had the option of travelling by car, even if public transport was chosen for the journey.	
Banister, D. and Bowling, A. (2004). Quality of life for the elderly: the transport dimension. <i>Transport Policy</i> . 11, 105-115.	Face to face interviews with a representative sample of 1299 people aged 65+ across Great Britain.		
Barker, J. (2003). Passengers or political actors? Children's participation in transport policy and the micro political geographies of the family. <i>Space & Polity</i> . 7. 135-151.	A qualitative study of 30 families and a survey of 1006 respondents.	No information.	A lack of detail about the methodology and sample mean that the results of this study should be considered cautiously. Little information about sample selection, sample characteristics, methods of analysis. Sample for survey is not random.

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

Barker, L. Connolly, D. (2005). <i>Scottish Household Survey Analytical Topic Report: Mode Choice</i> . Scottish Executive	Survey.	Data from Scottish Household Survey.	
Barnardo's (2004). <i>Reduce speed now. Stop, look and listen: children talk about traffic</i> . Barnardo's	Not known.	Not known.	No information about sample or methods.
Barnes, M., Blom, A., Cox, K., Lessof, C., Walker, A. (2005). <i>The Social Exclusion of Older People: Evidence from the first wave of the English Longitudinal Study of Ageing (ELSA)</i> . Office of the Deputy Prime Minister	Analysis of data from 9091 people over the age of 50, collected for the 2002/2003 English Longitudinal Study of Ageing.		
Barnes, M., Lyon, N., Morris, S., Robinson, V., Wan Yau, Y. (2005). <i>Family Life in Britain: Findings from the 2003 Families and Children Study (FACS)</i> . The Stationary Office.	Analysis of the 2003 Families and Children Study 9352 families.	Child Benefit Records.	
Barrett, E., Heycock, M., Hick, D., Judge, E. (2003). <i>Issues in access for disabled people: The case of the Leeds Transport Strategy. Policy Studies</i> , 24(4).	Focus groups with 61 people with disabilities .	Resource centre users.	
Batty, E., Haywood, R., Kevill, P. (2002). <i>Transport barriers to employment in Barnsley: A case study of Athersley and New Lodge</i> . Centre for Regional Economic and Social Research	Interviews with individuals from 161 households in Barnsley area.	Letters sent out to households in Athersley and New Lodge area, two miles from Barnsley centre, in advance of interviewers calling. Supplemented by small on-bus and at-stop survey.	

Beart, S., Hawkins, D., Kroese, Biza S., Smithson, P., Tolosa, I. (2001). Barriers to accessing leisure opportunities for people with learning disabilities. <i>British Journal of Learning Disabilities</i> . 29. 133-138	Focus groups with 29 service users.	To draw on the experience of service users with a wide variety of social backgrounds, living conditions and ages, five establishments within Dudley offering specialist services to people with a learning disability were chosen: day centre for elderly; special needs dept of FE college, a social education centre, a school leavers' group within a school for children with special needs, a 50-bed long stay NHS residential unit.	
Black, C., Collins, A., Snell, M. (2001). Encouraging walking: the case of journey-to-school trips in compact urban areas. <i>Urban Studies</i> . 38.1121-1141	Survey of 4212 children sampled randomly from 51 primary schools.	51 infant schools or combined infant/primary schools.	
BMRB Social Research (2004). <i>Department for Transport Omnibus Survey - October 2003</i> . Department for Transport	Survey of 2000 people.	Not stated.	
Bonsall, P., Kelly, C. (2005). Road user charging and social exclusion: The impact of congestion charges on at-risk groups. <i>Transport Policy</i> 12(5) 406-418	Survey.	Data from Household Census, National Travel Survey, Journey to Work Census, Household Income Survey, Household Expenditure Survey, New Earnings Survey and local travel surveys.	

Bostock, L. (2001). Pathways of disadvantage? Walking as a mode of transport among low income mothers. <i>Health & Social Care in the Community</i> . 9(1) 11-18	Interviews with 30 mothers.	Mothers on social security in the Midlands. They were all caring for at least one preschool child and were selected to reflect differences in ethnic identity and household items.	
Boylan, A., Burchardt, T. (2002). <i>Barriers to self-employment for disabled people</i> . Small Business Service.	Quantitative: 343000. Qualitative: 24 interviewees.	Quantitative data from the Labour Force Survey and the Family Resources Survey. Qualitative: purposively selected as either disabled established entrepreneurs; disabled would-be entrepreneurs; staff in intermediary organisations.	
Bramley, G., and Ford, T. (2000). <i>Social Exclusion and Lack of Access to Services: Evidence from the 1999 PSE Survey of Britain. Working paper 14</i> . Bristol: Townsend Centre for International Poverty Research, University of Bristol.	Survey.	1999 Poverty and Social Exclusion Survey.	
Brand C., Rajé, F, Preston, J. (2004) <i>Transport and access to healthcare: the potential of new information technology</i> . University of Oxford.	Based on 221 questionnaires from hospital patients, 144 from GP patients.	No information - local hospitals in Oxford.	

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

Bridgwood, A., Fenn, C., Dust, K., Hutton, L., Skelton, A., Skinner, M. (2003). Focus on cultural diversity: the arts in England attendance, participation and attitudes. Arts Council England	Based on 6042 interviews of adults aged 16 and over from all ethnic groups; 161 subsequent interviews with adults aged 16 and over from Black and minority ethnic groups. 1545 interviews with sample of Black and ethnic minority respondents.	Not stated.	
Brown, I. and Tyler, N. (2002). An accessible rural bus service: The Cumbria Plusbus. <i>In Nick Tyler (eds) Accessibility and the Bus System: From Concepts to Practice.</i> Thomas Telford, London.	Description of initiative.		
Buchanan, C. (2004). <i>Monitoring free local off-peak bus-travel for older and disabled people.</i> Scottish Executive Social Research.	Postal survey of a representative sample of 0.38 per cent of concessionary bus pass holders in Scotland and three focus groups with older people.	Range of methods - opportunistic samples at range of bus stops/rail stations, list of concessionary pass holders - surveys and focus groups, bus boarding data.	No attempts made to involve non-users of public transport in the study?
Buchanan, C. (2005). <i>Bus Passenger Satisfaction Survey 2004.</i> Scottish Executive Social Research	Survey of 1756 bus passengers.	Quota sample based on area, age, sex, bus use, car-ownership.	

Reference	What did study involve?	How Was Sample Selected/Recruited?	[†] Caveats - Reservations About Research?
CAG Consultants and TAS Partnership Ltd. (2004). <i>The benefits of providing transport to health-care in rural areas.</i> Countryside Agency	Analysis of 200 projects; 20 case studies.	Projects providing rural transport to health care.	
Cambridgeshire Rural Transport Partnership (2005). <i>Moving People? Moving services? Moving stories! Transport, Information and access for all.</i> Cambridgeshire Rural Transport Partnership.	Multi-method investigation including 11 structured interviews with local people (young mothers, elderly etc); 15 GP surgery questionnaires.	Rural and market towns of east Cambridgeshire and Fenland due to recognised need by the Patient Transport Group for research on issues re. access to health facilities and services.	
Campion, J., Greenhalgh, C., Knight, J.. (2003). <i>Mind the Gap: Leonard Cheshire's social exclusion report 2003.</i> Leonard Cheshire.	Based on 456 questionnaires; four focus groups of between 5-12 people.	Sample drawn from Leonard Cheshire's panel of disabled people and from users of their services.	
Cartmel, F., Furlong, A. (2000). <i>Youth unemployment in rural areas.</i> Joseph Rowntree Foundation.	Quantitative study of study - based on a opportunistic sample of 817 18 to 24 year olds. Qualitative study involved interviews with 80 young people purposively selected from quantitative sample, and 65 employers and key professionals in rural Scotland.	Those with recent experience of three months continuous unemployment; 80 from rural areas chosen from this for interviews.	

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

Cattan, M. (2001). <i>Supporting older people to overcome social isolation and loneliness</i> , British Gas Help the Aged Partnership	Twenty-two focus groups (145 older people); interviews with 25 older people. Participants were identified through community schemes that aimed to tackle social isolation of older people	Older people participating in projects to overcome social isolation, recruited via project staff/letter sent through project.	Limited to older people in the community who attended project aimed to combat social isolation/loneliness, did not focus on 'at risk' groups such as those in residential care or with mental health problems. Did not focus on ethnic minority older people.
CfIT (2002). <i>The CfIT Report 2002:Public Attitudes to Transport in England</i> . CfIT.	A representative quota sample of 1725 adults across England.	Representative sample of English public aged 16+, proportional by age group, gender and employment status, data weighted.	Quota sample for survey
Christie,S.;Morgan,G.; Heaven,M.;Sandifer,Q. ;van Woerden,H. (2005) Analysis of renal service provision in South and mid Wales. <i>Public health</i> , 119(8), 738-742	Survey of 1514 patients.	Renal units provided postcodes for RRT patients in the study area.	
Clark, A. M., Sharp, C., Macintyre, PD. (2002). The role of age in moderating access to cardiac rehabilitation in Scotland. <i>Ageing and Society</i> , 22, 501 - 515	Survey and focus group study of older people's access to cardiac rehabilitation programmes.		Small sample in quantitative survey; no detail of analysis methods for focus groups.
Colwell, J & Culverwell, A (2002). An examination of the relationship between cycle training, cycle accidents, attitudes and cycling behaviour among children. <i>Ergonomics</i> 45 (9) 640-648	A questionnaire survey of 336 school children aged 13-16 in London.		
Connolly, P. (2001). <i>Liveable London</i> . Living Streets	Survey of 1200 older people, non-randomly sampled from membership of older people's organisations in London.	Questionnaires issued through membership organisations of older and disabled Londoners.	Low response rate, non random sample, responders more likely to be female, white, and disabled than older Londoners as a whole.

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

Cope, A., Cairns, S., Fox, K., Lawlor, D., Lockie, M., Lumsdon, L., Riddoch, C., Rosen, P. (2003). The UK National Cycle Network: an assessment of the benefits of a sustainable transport infrastructure. <i>World Transport Policy and Practice</i> . 9. 6-17	Survey of 30504 individuals.	Users of National Cycle Network.	
Cornwall Community Health Council (2000). Patients on Wheels: Transport and access to health services in Cornwall. CCHC	208 questionnaires; 259 interviews; 21 interviews.	Volunteer car services in certain areas; out patient clinic users; practice managers; Cornish MPs.	
Costley, T (2002). Survey of cycling in Scotland. Scottish Executive.	Survey of 2087 people.	Not known.	
Countryside Agency (2000). Rural services in 2000. Countryside Agency	Survey of 6102 households across 9677 rural parishes.	Postcoded data. 9677 rural parishes.	
Countryside Agency (2003). <i>Connecting the countryside</i> . Countryside Agency	Survey of 598 centre managers. 234 users. Twelve case studies.	UK online centre defined as a centre located within a rural ward as defined by the Countryside Agency. Postal questionnaires sent to all centres and their users across eight regions outside London.	
Countryside Agency (2004). The state of the countryside 2004: geographical availability of services. Countryside Agency	Not stated.	Data from national databases and Census.	
Countryside Agency. (2005). <i>Rural connections: achieving social inclusion through transport schemes</i> . Countryside Agency.	Thirty-nine case studies of projects to address transport issues in rural areas.		

Cozens, P., Neale, R., Whitaker, J., Hillier, D. (2002). Investigating perceptions of personal security on the Valley Lines rail network in the UK. <i>World Transport Policy & Practice</i> . 8. 19-29	Survey of 1000 individuals .	Rail users of the network during the biannual Customer Satisfaction Survey.	
Craig, G., Manthorpe, J. (2000). Fresh fields: <i>Rural social care: research, policy and practice agendas</i> . Joseph Rowntree Foundation	Postal questionnaire: 24 rural authorities; 41 urban authorities. Telephone survey: 20 rural area authorities.	Authorities reorganized in 1995, 1996, 1997 and 1998. Division between unitary authorities and residual two-tier 'downsized' counties (largely rural in nature). Telephone survey: a selection of authorities by size, political control and other key variables. Quotas of authorities from England, Scotland and Wales, including those authorities within the rural sample from which no postal questionnaire had been returned.	
Crockett, J. and Hounsell, N. (2005) Role of the travel factor convenience in rail travel and a framework for its assessment. <i>Transport Reviews</i> . 25. 535-555	Survey of 548 rail users.	Questionnaires distributed between 07.00hrs and 13.00hrs to rail users.	

Crush, D., Krishnan, S. (2004). <i>All Ability Cycling Access: A Qualitative Study</i> . TFL.	Telephone interviews, focus groups, cycling trial, with 32 people with disabilities.	Cyclists and non cyclists with disabilities. Emphasis on those who are likely to take up cycling. London area. Certain disability types also chosen - those with mobility impairment; mental health impairment; serious long term illness; temporary disability; learning difficulty.	
CSR partnership (2002a). <i>Ethnic minority use of the senior citizens travel concessions</i> . CSR Partnership	Eight discussion groups, and a face-to-face interview survey with around 1600 pensioners from the main black and minority ethnic groups in the West Midlands (Bengali/Bangladeshi, Punjabi, Gujarati, Pakistani/Kashmiri, African, and Chinese).	Six main ethnic minority communities; no further details.	
CSR Partnership (2002b). <i>Best value review of senior citizen's travel concession. Draft final report February 2002</i> . CSR Partnership	A consultation survey carried out in the West Midlands involving a quota sample of 2400 adults.	Not known.	

<p>Cummins, S., Stafford, M., Macintyre, S., Marmot, M., Ellaway, A. (2005). Neighbourhood environment and its association with self rated health: evidence from Scotland and England. <i>Journal of Epidemiology and Community Health</i>. 59(3) 207-213</p>	<p>Survey of 13899 individuals .</p>	<p>One hundred and seventy-eight census wards in England and 81 postcode sectors in Scotland drawn from areas included in the Health Survey for England and the Scottish Health Survey: 109 wards in London and SE England (chosen in linked projects using other study cohorts but where HSE participants also happened to reside; 69 wards in the rest of England (chosen randomly from all wards with a minimum of 40 HSE respondents stratified by population density and Carstairs' deprivation index); 81 postcode sectors in Scotland (chosen randomly from all postcode sectors with a minimum of 35 HSE respondents stratified as above). Within each selected area data on self rated health status and other characteristics were drawn from the HSE and SHS for men and women aged 16 or over (1389)</p>	
<p>Dargay, J. and Hanly, M. (2002). The Demand for Local Bus Services in England. <i>Journal of Transport Economics and Policy</i>. 36. 73-91</p>	<p>Not stated.</p>	<p>Data used from the STATS100A database of the DETR.</p>	

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

Dargay, J. (2001). The effect of income on car-ownership: evidence of asymmetry. <i>Transportation Research Part A</i> . 35. 807-821	Survey of 7000 households 1970-95.	UK Family Expenditure Surveys 1970-95.	
Dargay, J. (2002). Determinants of car-ownership in rural and urban areas: a pseudo-panel analysis. <i>Transportation Research Part E</i> . 38. 351-366	Survey of 7000 households.	UK Family Expenditure Surveys 1970-95.	
Davies, G. A. (2005). Using multimedia communications to modify travel behaviour. <i>Municipal Engineer</i> 158, 63-68.	Report on evaluation of walking bus scheme.		Not much information about sample or methods.
Davis, A. (2001). Getting around: listening to children's' views. <i>Proceedings of the Institution of Civil Engineers: Municipal Engineer</i> . 145. 191-194	Qualitative study of 492 pupils in Birmingham schools aged between 9 and 14 years.	Pupils in four schools in working class areas in Birmingham.	
Department for Environment, Food & Rural Affairs (2002). <i>Survey of Public Attitudes to Quality of Life and to the Environment: 2001</i> . Department for Environment, Food & Rural Affairs	Survey of 3700 individuals .	Adults aged 18+ in England and Wales.	

Department for Environment, Transport and the Regions (2000). <i>Factors leading to increased school journey length.</i> Department for Environment, Transport and the Regions	Ten case study areas with two to three schools in each, and analysis of 1985-1996 National Travel Survey data.	Case study areas selected on basis of geographic coverage of England and Wales and urban density. In each area, an affluent and a less affluent area of equal size were selected using data from the 1991 Census at ward level using car-ownership and proportion of residents in social class I and II as indicators of income. In general two wards were chosen for each area and schools selected within them. The schools were likely to display characteristics of increasing travel distance to school. In total 35 schools.	
Department for Environment, Transport and the Regions (2004). <i>Transport, Young People and Rural Areas.</i> DETR	Case studies of young people's involvement in transport initiatives in rural areas.		
Department for Transport (2004a). <i>Attitudes to Transport Issues in England.</i> Department for Transport	Seventeen focus groups, no information on numbers of participants.	Stratified by a range of factors for example, geographic, demographic, car use; no information about recruitment.	
Department for Transport (2000). <i>Research into levels of activity relating to school travel initiatives.</i> Department for Environment, Transport and the Regions	Postal survey of all Local Authorities in England and Wales to evaluate school travel plans 326 local authorities.	All local authorities in England and Wales.	Issue of potential bias towards those involved in school travel plans and initiatives.

Department for Transport (2001). <i>Older people: Their transport needs and requirements - Main report</i> . Department for Transport.	Based on an interview survey with a representative sample of 1,145 people aged (mainly) over 60 in England and Wales, as well as six focus groups involving older people from urban and rural areas, and a stakeholder group.	Differences in transport, location, gender, ethnic.	
Department for Transport (2001). <i>Perceptions of congestion: report on qualitative research findings</i> . Department for Transport	Thirteen groups discussion with 83 drivers.	Six English areas chosen to represent a range of different driving experiences and contexts. Drivers aged 18+, according to five driver segments: white collar business drivers; blue collar commercial drivers; long range car commuters; high private mileage drivers; moderate private mileage drivers. Light mileage drivers and HGV and public service drivers excluded.	

Department for Transport (2002). <i>Attitudes to, and potential take-up of, additional home to school transport.</i> Department for Transport	Multi-method study of pupils and parents in rural and urban areas. Eleven focus groups and 99 participants (qualitative); 1098 parents' questionnaires and 566 pupil questionnaires (quantitative).	Three areas of study: new town, inner city and rural. Schools recruited on basis of large proportion of pupils living within one to two miles of primary and one to three miles of secondary school; high levels of car-ownership and use (for example, new estates), scope for alternatives to car (for example, bus routes and cycle lanes, different socio-economic characteristics (ABC1 and C"DE), involvement in developing school travel plans and Safe Routes to School initiatives to demonstrate that transport was a recognised problem. Three further areas- semi urban, urban and semi rural - were also used, with 'typical' schools identified.	
Department for Transport (2002a). <i>Attitudes to local bus services.</i> Department for Transport	Survey of 1850 individuals .	Data from ONS July 2002 national survey, random sample.	
Department for Transport (2002b). <i>Accessibility of local services and facilities.</i> Department for Transport	Survey of 1850 individuals.	Data collected by Office of National Statistics.	
Department for Transport (2003a). <i>Public Transport Needs of Minority Ethnic and Faith Communities Guidance Pack</i> Department for Transport	No details.	People and organisations that have an interest in public transport.	Guidance pack based on research findings but details of methodology not given.

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

Department for Transport (2003b). <i>Attitudes to walking and cycling.</i> Department for Transport	Survey of 1850 individuals .	Data from ONS October 2002 national survey, random sample.	
Department for Transport (2004b). <i>People's perceptions of personal security and their concerns about crime on public transport</i> , Department for Transport	For 2002: Adult interview survey: 1809 respondents; Black and Minority Ethnic Communities Survey 337; A survey of 310 young people aged between 12 and 16 years. 12 escorted journeys with people with disabilities, and discussion groups.	2002 sample drawn in different types of locations such as rural, town, city and Greater London. Quotas for equal representation of women and men, range of ages and black and ethnic minority groups. Also people with restricted mobility, sight and hearing impairments and mental health problems. Also ensured that sufficient numbers of respondents use public transport.	Quota sample for quantitative survey.
Department for Transport (2004c) <i>Attitudes to road pricing.</i> Department for Transport	Survey.	Data from ONS Omnibus Survey March 2004.	
Department for Transport (2004d). <i>In-car safety and the personal security needs of female drivers and passengers.</i> Department for Transport	Secondary analysis of STATS 19 and the Co-operative Crash Injury Study.	Summary of findings from work by Loughborough and Coventry Universities to address the in-car safety and security needs of women drivers and their passengers, which considered the different circumstances in which female drivers were involved in a road accident compared to males and difference in injury patterns.	
Department for Transport (2005a). <i>Focus on Personal Travel 2005 edition.</i> Department for Transport	Source of data is 2002/2003 NTS. Data is combined to increase sample size. 15,700 households.	Not stated.	

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

Department for Transport (2005b). <i>Transport Statistics Bulletin: National Travel Survey 2004</i> . Department for Transport	Survey of 8122 households, 19199 individuals.	Sample drawn is a stratified random (quota?) sample of households in GB. Face to face interviews followed by completion of a seven day travel diary, in which participants recorded all journeys, as well as collecting information about long distance travel over a four week period.	Changes in methodology in 2002 means that there are inconsistencies in the data pre- and post-2002. Statistical significance of differences between groups/confidence intervals not given where differences are identified.
Department for Transport (2005c). <i>2004 Department for Transport FACS analysis. October 2005. Preliminary analysis of travel in school patterns</i> . Department for Transport	Analysis of data from the 2003-2004 Family and Children Survey.		
Department for Transport (2005d). <i>Results from the ONS survey, March 2005</i> . Department for Transport.	Survey of 184 respondents aged 17-20; 418 aged 21-29.	National Travel Survey. Representative sample of British adults aged 16 and over.	Datasets have fairly small numbers therefore results should be regarded as indicative rather than definitive.
Department for Transport (2005e). <i>Travelling to School Initiative: Findings of the Initial Evaluation</i> . Department for Transport	Analysis of survey of pupils in 642 schools.	Pupils from schools that had completed an school travel plan (STP) by the end of March 2004 and had received payment from DfES of a School Travel Plan capital grant, or had completed an STP but were not eligible for a grant (i.e. independent schools).	Data quality and coverage limitations leading to limited conclusions from this analysis.
Derek Halden Consultancy (2003a). <i>Children's Attitudes to Sustainable Transport</i> . Scottish Executive	Twelve LAs; 22 discussion groups; two personal construct analysis groups; children's surveys n=367, parent survey n=82.	Case study approach. Twelve primary and secondary schools selected, range of localities, and different levels of affluence.	Sampling for surveys is non systematic/non-random. Small numbers and low response rate in parent survey.

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

Derek Halden Consultancy (2003b) <i>Barriers to Modal Shift</i> . Scottish Executive Social Research	Involved 520 questionnaire respondents; 33 focus group members; 18 telephone interviews.	Database of people on electoral register for area. Random sample in area sent postal questionnaire.	
Derek Haldon, Farrington, J, Copus, A. (2002), <i>Rural Accessibility</i> Scottish Executive Central Research Unit	Not known.	Not known.	
Dibben, P. (2003). Transport, social exclusion and young people in rural England, <i>Proceedings of the Institution of Civil Engineers-Municipal Engineer</i> . 156. 105-110.	Qualitative study of transport, social exclusion and young people in rural England involving interviews with 200 young people aged from 11 to 25 years old.	Not stated.	
Dickinson, J., Kingham, S., Copsey, S., Hougie, D. (2003) Employer travel plans, cycling and gender: will travel plan measures improve the outlook for cycling to work in the UK? Transportation Research Part D. <i>Transport and Environment</i> . 8. 53-67	Survey of 2065 individuals .	Employees of three Hertfordshire organisations, all characteristic of the area where there are no major cities.	
Disabled Persons Transport Advisory Committee (DPTAC) (2002a). <i>Attitudes of disabled people to public transport</i> . Disabled Persons Transport Advisory Committee.	Five focus groups; 989 interviews with people with disabilities in England & Wales, findings weighted to be representative of population.	No information about sampling.	Study used a quota sample, but no details about sampling are given.

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

Disabled Persons Transport Advisory Committee (DPTAC) (2002b). <i>Attitudes of disabled people to community transport</i> . Disabled Persons Transport Advisory Committee	Survey of 222 people with disabilities England & Wales, findings weighted to be representative of population.	MORI poll of attitudes of disabled people to public transport but how this was selected is not stated.	Study used a self-selecting sample of disabled people, no details of how sample was selected.
Dobbs, L. (2005). <i>Wedded to the car: women, employment and the importance of private transport. Transport Policy</i> , 12 (3) 266-278.	Involved 2904 survey respondents and 383 focus group participants.	Selected randomly from electoral register and screened to exclude women aged 60+. Also distributed via schools and training organizations, SureStart projects and Jobcentre plus.	
Duffy, B. (2000) <i>Satisfaction and expectations: Attitudes to public services in deprived areas. CASE paper 45</i> . Centre for Analysis of Social Exclusion	Survey of 4376 individuals .	Representative national sample, the paper is a reanalysis of data from 1998 MORI People's Panel survey	

Reference	What did study involve?	How Was Sample Selected/Recruited?	†Caveats - Reservations About Research?
Earnshaw, M. (2005) <i>Attitudes to the City: Bingeing on Anti-Social Behaviour</i> . The Future Cities Project	Survey of 580 individuals.	Online survey. People had to live or work within a city. No other details given.	
Echenique, M., Homewood, R. (2003). <i>The future of Suburbs and Exurbs</i> . Independent Transport Commission	Secondary data analysis.	Census of Population (1981,1991,2001) data and the National Travel Survey (2001).	Two sources of data use different categories of settlement sizes.
Ellaway, A., Macintyre, S., Hiscock, R., Kearns, A. (2003) In the driving seat: psychosocial benefits from private motor vehicle transport compared to public transport. <i>Transportation Research Part F: Traffic Psychology and Behaviour</i> . 6. 217-231	Survey of 2043 individuals.	Random sample drawn from electoral roll in eight local authorities in the west of Scotland.	Data is cross-sectional so cannot infer causality.
Elster, J. (2003) Cycling and social inclusion. in Tolley, Rodney (ed.). 2003, 'Sustainable transport: Planning for walking and cycling in urban environments', Woodhead Publishing, Cambridge.	Seventy-three cycling projects.	Projects found through those funded under DoT 'Cycle Challenge' grants scheme; Projects already known about; and those recommended by cycling project workers and others with knowledge of this area.	
EPPI (2001). <i>The effect of travel modes on children's mental health, cognitive and social development; a systematic review</i> . EPPI-Centre, London.	Systematic review and interviews with range of stakeholders and focus group with primary schoolchildren.	Children from single London school.	Findings from a single focus group of primary school children in London.

European Conference of Ministers of Transport (ECMT) (2001). <i>Joint ECMT-IRU study on economic aspects of taxi availability</i> . ECMT.	Review of practices in taxi provision across European cities.		
European Conference of Ministers of Transport (ECMT) (2003). <i>ECMT-IRU report on improving access to public transport</i> . ECMT.	Case studies of four European cities including Liverpool.		
Exley, S., and Christie, I. (2002) <i>Off the buses?</i> In John Curtice, Katarina Thomson, Catherine Bromley and Miranda Phillips. 2002 British Social Attitudes 19 th Report	Survey.	British Social Attitudes Survey 2001.	
Exley, S., and Christie, I. (2003) <i>Stuck in our cars? Mapping transport preferences</i> In Alison Park, John Curtice, Katarina Thomson, Catherine Bromley and Miranda Phillips (2003) British Social Attitudes 20 th Report	Survey.	British Social Attitudes Survey 2002.	
Farmer, C. (2005). <i>2003 Home Office Citizenship Survey: Top-level findings from the Children's and Young People's Survey</i> . Home Office.	An extension of the 2003 Home Office Citizenship Survey 1032 eight to ten years olds; 1666 11-15 year olds; 9486 adults; 4751 respondents from ethnic minorities.	Small User Postcode Address File (PAF).	

Farrington, J., Shaw, J., Leedal, M., Maclean, M., Derek Halden Consultancy, Richardson, T., Bristow, G. (2004). <i>Settlements, Services and Access. The Development of Policies to Promote Accessibility in Rural Areas in Great Britain.</i> HM Treasury	Survey of 998 individuals.	Six case study areas selected to be representative of both the broad range of rural areas in Britain and to act as exemplary studies identifying the range of accessibility problems and needs found in rural areas. Avoidance of areas which had already been heavily researched and an inclusion of areas where community based policies were in place. Each had a population of around 10000 for sampling purposes.	
Fenn, C., Bridgwood, A., Dust, K., Hutton, L., Jobson, M., Skinner, M. (2005). <i>Arts in England 2003: Attendance, participation and attitudes.</i> Arts Council England	Analysis of ONS Omnibus Survey data (September 2003 - January 2004).		
Finch, M., Williams, M., Blessington, H. (2000). Understanding travel behaviour as a pre-requisite for change: a case study of Bath. <i>Highways and Transportation.</i> March(12), 10-14	Not stated.	A cordon intercepting trips by all vehicular modes to the City Centre.	
Focus (2001). <i>An Uphill struggle: A survey of the experiences of people who use mental health services and are on a low income.</i> Focus	Not stated.	Via networks of UK mental health groups. Passed on by these people to others they knew.	
Friends of the Earth (2005). Environmental Justice - Mapping transport and social exclusion in Bradford. Friends of the Earth	Accessibility information from all wards in Bradford area.	All wards in Bradford area.	

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

Froud, J., Johal, S., Leaver, A., Williams, K.. (2005) Different Worlds of Motoring: Choice, Constraint and Risk in Household Consumption. <i>The Sociological Review</i> . 53. 96-128	Not stated.	Not stated.	Little detail given on method/sample etc.
Gabriel, Z., and Bowling, A. (2004). Quality of life from the perspectives of older people. <i>Ageing and Society</i> . 24, 675-691	Qualitative interviews with a purposive sample of 80 people aged over 65.	Selected from responders to ONS national QOL survey.	Transport issues are not explored in depth as a main focus of the study, but emerge as a theme in the analysis.
Galvin,K.; Sharples,A.; Jackson,D. (2000) Citizens Advice Bureaux in general practice: an illuminative evaluation. <i>Health & Social Care in the Community</i> . 8(4), 277-282.	Ten service users; two advisors; six referral agents; 25 service user questionnaires.	CAB advisors identified clients and referral agents.	
Gant, R. (2002). 'Enabling' transport for mobility-impaired people: the role of Shopmobility. <i>World Transport Policy and Practice</i> . 8(2) 27-35.	Survey of 107 users of Shopmobility in Kingston on Thames.		Small non-random survey, only users of Shopmobility included.
Gatersleben, B., Uzzell, D. (2003) Local transport problems and possible solutions: comparing perceptions of residents, elected members, officers and organisations. <i>Local Environment</i> , 8(4) 387-405	Survey of 439 residents, 89 organisations, 35 elected members.	Random sample of residents, elected members, officers and organisations in Guildford.	

Geeson, K. and Grohmann, N. (2002) <i>The impact of sustainable transport policies on the travel behaviour of shoppers.</i> Department for Transport, Local Government and the Regions	Seven case study areas.	Relevant transport professionals/local government officers involved in implementation of transport measures. City centre managers/ local govt officers and shopping centre managers. Local residents who had lived locally and shopped at the study location for at least ten years.	
Gilhooly, M., Hamilton, K., O'Neill, M., Gow, J., Webster, N., Pike, F., Bainbridge, C. (2005). <i>Transport and Ageing: Extending Quality of Life for Older People Via Public and Private Transport.</i> ESRC Report.	Postal survey involving a sample of people age over 18 from the electoral register in four regions . 5000 questionnaires mailed- 1128 returned. In-depth interviews with a quota sample of 305 people aged 45 and over, in London and Scotland as well as 17 focus groups;478 street surveys.	From elderly forums; electoral register; snowball sampling; local groups.	The findings relate to a wide age group from 45-85+, and the sample is not nationally representative.
Gilhooly, P., Low, D.J. (2005) Primary school travel behaviour in Midlothian. <i>UK Proceedings of the Institution of Civil Engineers. Municipal engineer.</i> 158. 129-136	Mixed-method study, including a survey of 776 parents	Parents of children at the four study primary schools in Midlothian.	
Giuliano, G., Dargay, J.(2006). Car-ownership, travel and land use: a comparison of the US and Great Britain . Transportation Research. Part A, Policy and Practice, 40a(2) 106-124	Based on self-completion travel diaries of 23167 people across 9688 UK households.	Data from British National Transport Survey 95/97.	

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

Giuliano, G. and Narayan, D. (2003) <i>Another look at travel patterns and urban form: The US and Great Britain</i> . Carfax Publishing.	Survey of 42000 households and 9688 households.	Nationwide Personal Travel Survey (NPTS) and National Transport Survey (NTS). NPTS households chosen by complex stratified sampling method. NTS is random sample of private households in GB.	
Goodman, R. (2001) A traveller in time: Understanding deterrents to walking to work. <i>World Transport Policy & Practice</i> . 7. 50-54	Interviews with 30 individuals.	Public sector employees.	
Granville, S., Laird, A., Barber, M., Rait, F. (2002). <i>Why Do Parents Drive Their Children to School?</i> , Scottish Executive Central Research Unit	Multi-method study of parents who drove their children to school and secondary school age children who were driven to school, including nine focus groups.	Parents who drive their children to school, with emphasis on those who drive a short distance only and/or who have the option of using public transport such as school or public bus. Spread of urban, suburban and small town environments.	
Gray, D., Farrington, J., Shaw, J., Martin, S., Roberts, D. (2001) Car dependence in rural Scotland: transport policy, devolution and the impact of the fuel duty escalator. <i>Journal of Rural Studies</i> . 17. 113-125.	Questionnaire survey of 3000 Scottish households, (1050 returned - 35% RR); 140 travel diaries; 11 focus groups .	Random sample for survey, travel diaries completed by volunteers from survey sample, purposive sample for focus groups.	
Green E. and Stone, V. (2004) <i>Public attitudes to road pricing in the UK: a qualitative study</i> . Department for Transport	Interviews with 170 individuals.	Respondents contacted using a 'free-find' approach, with researchers working to quotas using on street recruitment, snowballing and via existing groups for example, Muslim women's group.	

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

Grewal, I., Joy, S., Lewis, J., Swales, K., Woodfield, K. (2002). <i>'Disabled for life?' Attitudes towards, and experiences of, disability in Britain.</i> DWP.	Thirty-five in-depth interviews (purposive); 2064 face to face survey (random)	Survey: follow up of respondents to previous survey, plus random Postcode Address File sample. Interviewees - recruitment method not known.	
Guthrie, N. (2002) Drivers' attitudes to motorised private transport alternatives. <i>Engineering and Control.</i> 43. 387-391.	Not stated.	Members of the public arriving and leaving car park in the centre of Leeds.	
Hamer, L. (2004). <i>Improving patient access to health services: a national review and case studies of current approaches.</i> Health Development Agency	Not stated.	Documentary analysis of all current LTPs in England (2000-05) and HIMPS (2000-03); questionnaire to all London boroughs; case study of authorities.	
Hamilton, K., Gourlay, M. (2002) <i>Missed Hospital Appointments And Transport.</i> Kings Fund	Interviews with 120 women.	Women in the antenatal clinic waiting area in a single hospital.	Study involves a single hospital in east London: generalisability of findings may be an issue.
Hamilton, K., Ryley Hoyle, S., Jenkins, L. (2000) <i>Public transport gender Audit evidence base.</i> Department for Transport	Focus groups - Phase1: four groups; 30 women. Phase 2: two groups; 16 women.	A broad mix of women from locations around the country, a mix of car owners and non owners, age groups and employment statuses. London group aged 16-25; Huddersfield aged 62-77. Three of the four groups in Phase 1 were urban and one was rural. Phase II focused on women on the lowest income with no car availability, plus those in mid life and those who used public transport to get to work. Also lone mothers were included.	

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

Hanly M. and Dargay, J. M. (2000) <i>Car-ownership in Great Britain: a panel data analysis</i> . University College London	Survey of 5000 households in 1993, 3000 in 1994-96.	Data from British Household Survey 93-96.	
Hayden, C., Boaz, A. (2002). <i>Making a difference: The Better Government for Older People Programme Evaluation Report</i> . Better Government for Older People.	Description of pilots carried out under the BGOP programme.		No focus on transport issues; no information about the older people participants in the pilots' action research
Haynes, R., Lovett, A., Sunnenberg, G. (2003). Potential accessibility, travel time, and consumer choice: geographical variations in general medical practice registrations in Eastern England. <i>Environment and Planning A</i> 35(10) 1733-1750	Modelling based on data from 2107007 patients.	Patient registers for those registered in the region in autumn 1997, with postcodes. Counties of Suffolk, Norfolk and Cambridgeshire.	
Hess, S., Polak J., Daly, A., Hyman, G. (2005) <i>Flexible Substitution Patterns in Models of Mode and Time of Day Choice: New evidence from the UK and the Netherlands</i> . Department for Transport	London - survey of 1000; West Midlands - survey of 550.	Collected from car drivers undertaking journeys.	
Hine, J. (2004a). <i>Transport issues faced by residents in deprived areas in Urban Scotland</i> . Scottish Executive	Four focus groups; 18 interviews.	Local residents of four urban locations within the Central Belt.	Small sample so generalised findings about differences between rural and urban areas should be treated with caution

Hine, J. (2004b). Transport Disadvantage and Social Exclusion in Urban Scotland. <i>Built environment</i> . 30(2), 161-171	Three case studies.	Areas selected for their differing urban locations. Leith as an urban district located close to a city centre with good bus links; Castlemilk as an estate located on the periphery of a city, and Coatbridge as a free standing town with employment opportunities on the edge of town accessible by car but not by public transport.	
Hine, J. and Mitchell F. (2003). <i>Transport Disadvantage and Social Exclusion, Exclusionary Mechanisms, in Transport in Urban Scotland</i> , Ashgate Publishing Limited, England	Three case studies.	Areas selected for their differing urban locations. Leith as an urban district located close to a city centre with good bus links; Castlemilk as an estate located on the periphery of a city, and Coatbridge as a free standing town with employment opportunities on the edge of town accessible by car but not by public transport.	
Hine, J. and Mitchell, F. (2001) <i>The role of transport in social exclusion in urban Scotland</i> . Scottish Executive	Four focus groups; 18 interviews.	Local residents of four urban locations within the Central Belt.	
Hine, J. and Mitchell, F. (2001) Better for everyone? Travel experiences and transport exclusion. <i>Urban Studies</i> . 38. 319-332.	Includes data from three studies: interviews with 32 members of the public; 21 visually impaired people; 18 interviews with people on low income in Edinburgh.		

Hine, J. and Scott, J. (2000) Seamless, accessible travel: making a public transport journey more like a car journey. <i>Journal of Transport Policy</i> . 7. 217-226.	Four focus groups (n=13;11;3;7), including car users, public transport users and mobility impaired people. In-depth interviews with 32 individuals .	Recruited in street and car park/rail station locations. Work place recruitment, elderly day care organisation.	
Hiscock, R., Macintyre, S., Kearns, A., Ellaway, A. (2002) <i>Means of transport and ontological security: Do cars provide psycho-social benefits to their users?</i> Transportation Research Part D. 7. 119-135	In-depth interviews with a sample of car owners and non-car owners in the west of Scotland. Sample size unknown, but >18.	Quota sample designed to ensure that many respondents would be at the margins of car-ownership and owner occupation.	
Hole, A.R. (2004) <i>Forecasting the demand for an employee Park and Ride service using commuters' stated choices</i> . University of St Andrews	Survey of 642 individuals.	All members of University of St Andrews staff who drove to work on the day of the survey.	

Reference	What did study involve?	How Was Sample Selected/Recruited?	†Caveats - Reservations About Research?
Iredale, R., Jones, L., Gray, J., Deaville, J. (2005). 'The edge effect': an exploratory study of some factors affecting referrals to cancer genetic services in rural Wales. <i>Health & place</i> . 11(3) 197-204	Interviews with 19 health professionals.	Representing each surgery in Montgomeryshire (9 practices, one doctor and one nurse for each) In one practice, two doctors were included. Chosen to reflect a range of healthcare professionals across the variables of age, sex, and length of service.	
Jarvis, H. (2005). Moving to London time - Household co-ordination and the infrastructure of everyday life. <i>Time & Society</i> . 14(1) 133-154	Five case studies.	Employed couples with children. No details on recruitment.	
Johnson, B., Klein, D., Kennedy, F., Sherriff, G., Walker, L., Bertenshaw, L., Wilkinson, M., Nurick, R., Kelly, R., Bullock, S., Parkinson, S. (2003) <i>Better buses, safer streets for Longsight</i> . Manchester Friends of the Earth	Focus groups/community meetings involving 443 individuals.	Public sessions for people living in Longsight area.	
Johnson, D. and Carter, T. (2003) <i>Promoting walking in British cities; the case of York</i> . In Rodney Tolley (ed.). 2003, 'Sustainable transport: Planning for walking and cycling in urban environments', Woodhead Publishing, Cambridge.	Survey of 500 individuals.	Residents stopped on the streets of York.	

Jones, L., Davis, A., Evers, T. (2000). Young people, transport and risk: comparing access and independent mobility in urban, suburban and rural environments. <i>Health education journal</i> . 59. 315-328	A mixed-method study of 349 secondary school pupils.	From the study schools.	
Jones, P., Christodoulou, G., Whibley, D. (2005) <i>Transport: are policymakers and the public on the same track?</i> Alison Park, John Curtice, Katarina Thomson, Catherine Bromley Miranda Phillips, Mark Johnson 2005 British Social Attitudes, the 22nd Report. Sage	Survey.	British Social Attitudes Survey 2004.	
Jordan, H., Roderick P., Martian D., Barnett S. (2004), Distance, rurality and the need for care: Access to health services in south west England, <i>International Journal of Health Geographics</i> , Sept. 3:21	Not known.	Random selection based on Postcodes.	
Kazimirski, A., Adelman, L., Arch, J., Keenan, L., Legge, K., Shaw, A., Stafford, B., Taylor, R., Tipping, S. (2005). <i>New Deal for Disabled People evaluation: Registrants' Survey-Merged Cohorts (Cohorts one and two, Waves one and two)</i> . DWP.	Survey. Cohort 1: 4494; cohort 2; 3177.	Drawn from NDDP Evaluation Database.	Little detail relating to transport.

Kelly, G., Williams, B., Howat, N., Kay, S., Scheer, R. (2004). <i>The Pension Service Customer Survey Review 2003</i> . Department for Work & Pensions.	Interviews with a random sample of 4299 people who had contacted pension centres across the UK.		
Kenyon, S. and Lyons, G. (2003) The value of integrated multimodal traveller information and its potential contribution to modal change. <i>Transportation Research Part F: Traffic Psychology and Behaviour</i> . 6. 1-21	Forty-four mixed mode and mixed socio-demographic groups of travellers.	Representative of the UK population and a mix of car and public transport users, all life stages, ages, genders, family profiles and modal choice on travel behaviour and receptivity to integrated multimodal traveller information.	
Kenyon, S., Rafferty, J., Lyons, G. (2003a). Social exclusion and transport in the UK: A role for virtual accessibility in the alleviation of mobility-related social exclusion? <i>Jnl Soc Pol.</i> 32(3) 317-338	Six focus groups, varying in demographics, car use, internet use.	Representatives from the community, government, voluntary and academic sectors.	
Kingham, S., and Donohoe, S. (2002). Children's perceptions of transport. <i>World Transport Policy & Practice</i> . 8. 6-10	Qualitative study of 80 4-11 year olds in Hertfordshire.	From two state schools.	
Lindsay, C., McCracken, M., McQuaid, R.W. (2003). Unemployment Duration and Employability in Remote Rural Labour Markets. <i>Journal of Rural Studies</i> . 19(2), 187-200	Survey of 190 jobseekers (22% of the registered unemployed) in Wick & Sutherland in the northern Highlands of Scotland. Interviews with 17 employers.	Registered unemployed jobseekers in Wick and Sutherland.	

Logan PA, Dyas J, Gladman JR. (2004) Using an interview study of transport use by people who have had a stroke to inform rehabilitation. <i>Clin Rehabil.</i> 18(6):703-8	Interviews with 24 individuals.	General practice computerized registers and community occupational therapists' records in Nottingham.	
Lovett, A., Haynes, R., Sunnenberg, G., Gale, S. (2002). Car-travel time and accessibility by bus to general practitioner services: a study using patient registers and GIS. <i>Social Science & Medicine.</i> 55(1) 97-111	Modelling based on data from 2130530 patients.	GP patient registers in Cambridgeshire, Norfolk and Suffolk in Autumn 1997.	
Lucas, K. (2004) Running on empty : transport, social exclusion and environmental justice. Policy Press, Bristol.	Four case studies.	Areas chosen to illustrate the way in which local policy practitioners are implementing policies and initiatives to improve accessibility for people experiencing transport poverty in their administrative areas.	
Lucas, K., Grosvenor, T., Simpson, R. (2001). <i>Transport, the environment and social exclusion.</i> Joseph Rowntree Foundation	Focus groups with a range of people in different localities across the UK.		Only a single small focus group with each demographic group (for example, four disabled people).
Lumsdon, L. (2003) <i>Planning for recreational cycling in the UK.</i> Sustainable Transport. in Rodney Tolley (ed.). 2003, 'Sustainable transport: Planning for walking and cycling in urban environments', Woodhead Publishing, Cambridge.	Two surveys 3400 individuals in first, 1710 in second.	1st: every other cyclist/walker was approached on sample of routes at 22 sites for 12 hours, for four days. 2nd: Cyclists intercepted at 12 survey stations on the Celtic and Taff Trails in Wales.	

Lyons, G. (2003) <i>Transport Direct Market Research Programme: Findings and Implications from Phase 1</i> . Transport Direct	Survey of 1200 members of public; 30 service providers.	Service providers: senior members of staff with responsibility for promoting and marketing their organisation and for its website. Members of public: representative sample of GB population according to age and sex in England, Scotland and Wales.	
Macintyre, S., Ellaway, A., Kearns, A., Hiscock, R. (2000) <i>Housing tenure and car-ownership: why do they predict health and longevity?</i> Glasgow MRC Medical Sociology Unit Working Paper, no. 89.	Three thousand postal survey and 40 in-depth interviews.	Adults living in west of Scotland. No other details given.	
Macintyre, S., Hiscock, R., Kearns, S., Ellaway, A. (2001) Housing tenure and car access: further exploration of the nature of their relations with health in a UK setting. <i>Journal of Epidemiology Community Health</i> . 55. 330-331	Survey of 3250 adults.	Adults from electoral roll in eight local authority areas in the west of Scotland in 1997.	
Mackett, R, Pasking, J, Titheridge, H. (2004) <i>The incorporation of social inclusion into policies in Local Transport Plans</i> . University College London	Nine Local Transport Plans.	A number of LAs were selected covering a range of areas out of those whose Local Transport Plans were online in a form that could be analysed using a computer editing facility. The selected LTPs were searched for term 'social'. Nine LAs were used.	

Mackett, R. (2001). <i>IGR report on reducing children's car use: the health and potential car dependency impacts</i> . UCL	Survey of 849 pupils - 95% survey response rate; 70% parent response rate; 88% anthropometric data on exercise. Children's activity and travel patterns: 195 pupils from eight schools. Evaluation of walking buses: five buses. In addition, questionnaires to 464 schools who could have implemented walking buses, with 213 responses and to 41 schools who had shown interest in walking bus schemes as possibility. Focus groups in three schools, with years 12 and 13 pupils of 8-14 participants. Travel questionnaire, sketch map task, landmark recognition task, drawing area around school task with 88 children in years four and six.	Pupils in ten schools in Hertfordshire, involved in Safer Roads to Schools initiative. Three year cohorts of children in years four, five and seven.	
Mackett, R. L and Ahern A (2000) <i>Potential for mode transfer of short trips: Report on the analysis of the survey results</i> . University College London	Survey of 400 individuals.	Random selection of households in three areas (dense urban to rural, flat to hilly) in London, Leeds, Ipswich, Hereford and Dorset using the Postcode Address File.	
Mackett, R., Lucas, L., Paskins, J., Turbin, J (2003). A methodology for evaluating walking buses as an instrument of urban transport policy. <i>Transport Policy</i> 10, 179-186.	Five walking buses; 94 child respondents; 48 parent respondents.	Parents and children involved in five walking bus initiatives in Hertfordshire.	

Mackett, R.L (2001a) Policies to attract drivers out of their cars for short trips. <i>Transport Policy</i> . 8. 295-306	Survey of 2488 households; 377 people interviewed.	Three areas within each of London, Leeds, Ipswich, Hereford and Dorset using the Postcode Address File (PAF).	
Mackett, R.L (2003) Why do people use their cars for short trips? <i>Transportation</i> . 30. 329-349	Travel diaries involving around 1000 households, in-depth interviews with 377 individuals.	Five areas selected on the basis of the type of area, from dense urban to rural, and the topography, from flat to hilly. random selection of households in three areas within each of the five study areas of London, Leeds, Ipswich, Hereford and Dorset using the Postcode Address File (PAF).	
Marmot, M., Banks, J., Blundell, R., Lessof, C., Nazroo, J. (2003). <i>Health, wealth and lifestyles of the older population in England: the 2002 English Longitudinal Study of Ageing</i> . Institute for Fiscal Studies.	A representative sample of individuals aged 50 and over drawn from the Health Survey for England (1998, 1999, 2001); 12100 individuals	Sample is drawn from the Health Survey for England samples 1998,1999 and 2001.	Transport not a focus, BUT key figures on public transport use provided in the Physical and Social Environment chapter only.
Marshall, S. and Banister, D. (2000) Travel reduction strategies: intentions and outcomes- <i>Transportation Research Part A</i> . 34. 321-338	Review of case studies of travel reduction strategies in three European countries including park-and-ride in Bristol.		

Martin, A., Moreland, V., Harper, H., and Huggins, P. (2004). <i>An investigation into the social exclusion of young people in relation to transport provision</i> . TRL Ltd.	Purposive sample of 11 to 12 year olds and 14 to 15 year olds from eight schools across the country, and using questionnaires (178 pupils), travel diaries (84 pupils), internet chat rooms and focus groups; four schools took part in online focus groups, no information about number of children in online groups.	No information.	Multi-modal study with little information about methods. No information about sampling, or number of children in chat rooms or focus groups. Online chat room findings should be treated with caution as there is no control on data quality. Diary cards were used to record other-than-school travel for 11 to 12 years and 14 to 15 year olds, but these were mostly incomplete - problems with the quality of the data.
Mason, M., Prior, M. (2005). Road Users' Satisfaction Survey 2004-2005. Highways Agency	Survey of 2511 individuals.	Selected random sample of Census output areas and quota sampled within each.	Quota sample.
McCann, S., Ryan, A. A., McKenna, H. (2005). The challenges associated with providing community care for people with complex needs in rural areas: a qualitative investigation. <i>Health & Social Care in the Community</i> . 13(5), 462-469	Qualitative interviews with 17 patients, 14 carers, providers/managers 42.	Patients identified, and consent obtained, by care managers. Service providers/managers purposively selected.	Small local study; patients recruited by care managers; mostly deals with private transport provided by the trust.
McQuaid, R. W., Greig, M., Adams, J. (2001) Unemployed jobseeker attitudes towards potential travel-to-work times. <i>Growth and Change</i> . 32. 355-368	Survey of 306 individuals.	Unemployed jobseekers looking for full-time work in 13 job centres in Bathgate and Edinburgh.	

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

McWhannell, F. Braunholtz, S. (2002). <i>Young people and transport</i> . Scottish Executive Social Research.	Sixteen focus groups; six paired depth interviews, young people aged from 11 to early 20s.	MORI telephone survey.	
Mencap (2000). <i>Living in Fear</i> . Mencap.	Survey of 904 people with learning disabilities .	Questionnaires sent to group homes, leisure clubs, disability employment services and self-advocacy groups in Wales and Scotland, England and Northern Ireland.	Non-random sample.
MORI (2001) <i>Transport Direct: summary of Office of National Statistics Omnibus Survey result</i> . Department for Transport	Survey of 1850 adults.	Data from ONS survey. Representative random sample.	
MORI (2003). <i>Making Heritage Count?</i> English Heritage	Survey of 1531 respondents; plus six focus groups of about eight people each for qualitative survey.	Quantitative survey uses surveys by MORI on behalf of English Heritage, DCMS and HLF in Cornwall, west London and Bradford. Samples drawn from radius of English Heritage sites in Bradford and west London; for Cornwall sample was countrywide. Qualitative survey uses quotas according to class, income, ethnicity and religion.	

<p>MORI (2004) CSS <i>Annual Transport Audit 2004: A survey of public opinion</i> (2004). Commission for County Surveyors Society</p>	<p>Survey of 2102 individuals.</p>	<p>Two hundred and ten of 641 parliamentary constituencies selected as main sampling points. Chosen to be representative of whole country by region, class, voting patterns and other variables. One local ward was chosen to be representative of the whole community within each constituency. Respondents chosen by ten cell quota of: sex (M/F); household tenure (owner occupier, Council/HAT, other); age (15-24, 25-44, 45+); working status (FT, PT, not working).</p>	
<p>Moss, J., Jack, C., Wallace, M. (2004) Employment location and associated commuting patterns for individuals in disadvantaged rural areas in Northern Ireland. <i>Regional Studies</i>. 38. 121-136</p>	<p>Survey of 681 individuals.</p>	<p>Focus of study is 'disadvantaged' rural areas based on Robson Index of relative economic and social deprivation. Also farm-associated and non farm associated households living in the open countryside. Sample selected using a randomised grid squares approach, drawn from 508 Enumeration Districts classified as severely disadvantaged by the Robson Index. A household density filter was applied which restricted the selection of grid squares to areas with a particular population density. All households within each grid square were surveyed.</p>	

MVA (2003). <i>16-19+ Transport in London (executive summary)</i> . Association of London Government.	Stratified random sample; 4157 students in further education in London (53 institutions), Also a smaller sample of 155 students in year 11 in seven schools.	All students in years 13 mailed a questionnaire/all students in year 12 asked to complete questionnaire in school. Around 23% response rate.	Relatively low response rate may mean bias in finding (for example, people with transport problems may be over-represented). Also It should be noted that students were asked how often they had been absent over the past year, and it is not clear what frequency of lateness or absence over a year might be described as 'often' or 'almost always'.
NAO (2004) Welfare to Work: Tackling the Barriers to the Employment of Older People. NAO	Uses data from range of sources, including examination of service provision in three locations, and in-depth interviews with 89 people between 50 and state pension age.		This study is not about transport as such. It is mentioned only briefly as a barrier to employment.
Niggebrugge, A., Haynes, R., Jones, A., Lovett, A., Harvey, I. (2005). The index of multiple deprivation 2000 access domain: a useful indicator for public health? <i>Social Science & Medicine</i> , 60(12) 2743-2753	Not stated.	East Anglia chosen because of its urban-rural structure. Residential locations of population derived from postcodes in patient registers; locations of GP main and branch surgeries derived from postcodes provided by four health authorities in the region.	
Noble, B. (2000). Travel characteristics of older people. <i>Transport Trends. 2000 Edition</i>	Using National Travel Survey data for Great Britain 1996-98: 21980 individuals.	Representative sample selected by Office of National Statistics.	National Travel Survey only included people in private households, so older people in communal establishments are excluded, leading to an overestimate of the amount of travel of the very elderly.

Nutley,S. (2005). Monitoring rural travel behaviour: a longitudinal study in Northern Ireland 1979- 2001. <i>Journal of Transport Geography</i> . 13 (3) 247-263	1979: survey of 905 households; 1988: 194 households ; 2000: 208 households .	Participants recruited purposively from selected rural areas.	
Office of the Deputy Prime Minister (2005). <i>Housing in England 2004. Part 1: trends in tenure and cross tenure topics</i> . Office of the Deputy Prime Minister	Continuous national survey, random sample.		
Otlet, G. (2001) The barriers to change as they are perceived by car commuters. <i>Traffic engineering & control</i> 42:99, 315-319.	Involved 161 interviews; 713 self completion surveys.	Seven workplace locations. Respondents had to be regular car commuters.	
Owen,D., Green, A.E. (2000. Estimating Commuting Flows for Minority Ethnic Groups in England and Wales. <i>Journal of Ethnic and Migration Studies</i> . 26(4) 581-608		Data from 1991 Census- Local Base Statistics and Special Workplace Statistics.	

Reference	What did study involve?	How Was Sample Selected/Recruited?	†Caveats - Reservations About Research?
Parry, J., Vegeris, S., Hudson, M., Barnes, H., Taylor, R. (2004). <i>Independent living in later life</i> . Department for Work and Pensions	Qualitative interviews with 118 individuals aged 59 and over.		
Patacchini, E., Zenou, Y. (2005). Spatial mismatch, transport mode and search decisions in England. <i>Journal of Urban Economics</i> , 2005	Secondary data analysis.	Used Labour force Survey data. 1994-2000.	
Paul Beecham & Associates; Sheffield Hallam University (2005) <i>The Benefits of Providing Transport to Address Social Exclusion in Rural Areas</i> . Countryside Agency	Twenty projects; eight case studies.	Steering Group including representatives of govt departments and national organisations assisted in identifying projects addressing social inclusion, which appeared to be generating non-transport benefits in key sectors of interest.	
Pavis, S., Platt, S., Hubbard, G. (2000). <i>Young people in rural Scotland: pathways to social inclusion and exclusion</i> . Joseph Rowntree Foundation.	Sixty in-depth interviews, postal questionnaire to 286 young people in Scotland aged 18 to 25 years old.	Selected randomly from GP list and old school register.	
Perren, K., Arber, S., and Davidson, K. (2003). Men's organisational affiliations in later life: the influence of social class and marital status on informal group membership. <i>Ageing and Society</i> . 23, 69-82	Secondary analysis of data on 1109 older men drawn from the 1999 British Household Panel Survey.	British Household Panel Survey data.	

Perren, K., Middleton, S., Emmerson, C. (2003a) <i>Education Maintenance Allowance Transport Pilots - Quantitative Findings from Year 1 and 2 (2000-2001/2001-2002)</i> . IFS	Statistical analysis of data for representative sample of 6500 school leavers.	Evaluation of EMA transport pilots.	
Pieris Y., and Craik C. (2004), Factors Enabling and Hindering Participation in Leisure for People with Mental Health Problems, <i>British Journal of Occupational Therapy</i> , June 67 (6), 240-247	Interviews with ten individuals.	Clients referred to a local assertive outreach service in SE England.	
Pooley C. and Turnbull J. (2000). Commuting, transport and urban form: Manchester and Glasgow in the mid-twentieth century. <i>Urban History</i> . 27 360-383	Interviews with 190 individuals.	People who began work in each decade from 1890s to 1980s in Manchester and Glasgow and London.	
Pooley, C., Turnbull J., Adams, M. (2005) <i>A Mobile Century? Changes in Everyday Mobility in Britain in the Twentieth Century</i> , Ashgate Publishing Limited, Hampshire, England	Various.	Various.	
Porter, A. (2002). Compromise and constraint: Examining the nature of transport disability in the context of local travel, <i>World Transport Policy and Practice</i> , 8 (2), 9-16	Survey of 114 people with disabilities, and in-depth interviews (number not stated).	Disabled people aged 16-69 with range of physical and sensory impairments living in city of Swansea. not stated how they were found.	
Priestley, M., Rabiee, P. (2002). Same difference?. Older people's organisations and disability issues. <i>Disability and Society</i> . 17(6) 597-611	Postal survey of 52 older people's organisations in northern England, and interviews with 21 organisation members.	Not clear.	

Raab, G. and MacDonald, C. (2004). <i>Older people in Scotland. Results from the Scottish Household Survey 1999-2002</i> . Scottish Executive Social Research.	Not known.	Four years of Scottish Household Survey 1992-2002.	
Rabbitt, P., Carmichael, A. I., Shilling, V. and Sutcliffe, P. (2002). <i>Age, health and driving. Longitudinally observed changes in reported general health, in mileage, self-rated competence and in attitudes of older drivers</i> . AA Foundation for Road Safety Research.	A questionnaire survey of a volunteer-sample of 395 individuals between the ages of 54 and 99.	Participants volunteered.	The fact that the survey used a volunteer rather than representative sample means that the findings should be considered with caution. The volunteer sample may have been a lot healthier and competent than the general population of the studied age, which may have biased the findings.
Rail Passengers Council (2004) <i>Putting passengers at the heart of the rail service: the rail passenger's council response to the government's structural review of the rail service</i> . Rail Passengers Council	Four focus groups.	Groups in London, Bristol and Glasgow. Recruited from social classes B, C1, C2; age 25-65; 50/50 male/female split; cross section of rail users-regular commuters, business and leisure users.	
Raje F. (2004), <i>Transport, Demand Management and Social Inclusion, The Need for Ethnic Perspectives</i> , Ashgate Publishing Limited, Hampshire, England	Not known.	Deprived wards with highest ethnic minority composition. Lunch/social clubs, mother and toddler groups, community centres and service users.	
Rajé, F. (2003) The impact of transport on social exclusion processes with specific emphasis on road user charging. <i>Transport Policy</i> 10. 321-338	Focus groups and travel diaries involving 105 individuals.	Lunch/social clubs; youth groups; community translation service.	

Rajé, F. (2004) <i>Engineering social exclusion? Poor transport links and severance</i> . Thomas Telford Services	Not stated, residents of Barton, Oxfordshire.	Resident questionnaire survey.	
Rajé, F., Grieco, M., Hine J. and Preston, J. (2002) <i>Impacts of road user charging/workplace parking levy on social inclusion/exclusion: gender, ethnicity and lifecycle issues interim report: Focus Groups</i> . University of Oxford	Ten focus groups (81 participants) Bristol; six groups (67 participants) Nottingham.	Focus groups held in number of geographical locations in Bristol and Nottingham (no details given as to how selected).	
Rajé, F., Grieco, M., Hine J. and Preston, J. (2003a) <i>Impacts of road user charging/workplace parking levy on social inclusion/exclusion: gender, ethnicity and lifecycle issues final report</i> . University of Oxford	Ten focus groups (81 participants) Bristol; six groups (67 participants) Nottingham. 56 travel diaries in Bristol; 71 in Nottingham.	Selected at key destinations such as railway station.	
Rajé, F., Grieco, M., Hine J. and Preston, J. (2003b) <i>Impacts of road user charging/workplace parking levy on social inclusion/exclusion: gender, ethnicity and lifecycle issues interim report: Travel Diaries</i> . University of Oxford	Fifty-six travel diaries in Bristol; 71 in Nottingham.	Focus groups held in number of geographical locations in Bristol and Nottingham (no details given as to how selected). Focus group participants provided snowball sample of further respondents.	
Ravenscroft, N., Uzzell, D., Leach, R., Groeger, J. (2002) <i>Danger ahead? the impact of fear of crime on people's recreational use of non-motorised shared routes'-Environment and Planning, C, Government and Policy</i> . 20. 741-756	Eight focus groups.	Five focus groups comprised of people observed and questioned on one of five survey routes (route users), and three groups of non-users.	

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

Reid Howie Associates Ltd (2004). <i>Transport provision for disabled people in Scotland: Progress since 1998</i> . Scottish Executive.	Interviews and focus groups with 91 people with disabilities, survey of 150 individuals and disability organisations.	Assistance of a number of organisations provided individuals and organisations representing disabled people across Scotland.	Survey sent to non-representative sample of individuals, and organisations representing people with disabilities. No information about survey sampling.
Reid Howie Associates. (2000) <i>Women and transport : moving forward</i> . Scottish Executive. Central Research Unit	Survey of 1584 respondents; 18 travel diaries; 13 focus groups.	Postal survey self selected from women's organisations and networks, supplemented with online version of questionnaire. Thirteen focus groups with range of women in spread of geographical areas in Scotland, no information about recruitment.	Survey sample is non systematic and should be treated with caution. Postal survey self selected; postal and online results combined. However focus groups cover a broad range of women in different localities.
RNIB Royal National Insititute of the Blind (2002). <i>Traveller's Tales: Making Journeys Safer For Blind And Partially Sighted People</i> . RNIB	Interviews with people with visual impairments.		No detail of sample size or methods.
Rowland, D., DiGuseppi, C., Gross, M., Afolabi, E., Roberts, I. (2003). Randomised controlled trial of site specific advice on school travel patterns. <i>Arch Dis Child</i> . 88. 8-11	Evaluation of travel advice initiatives in 21 London schools.	Schools in London boroughs.	
Rogers, A. (2002) <i>The Ethnic Division of Labour in Greater London: A Spatial Analysis of Workplace-Residence Relations In Cross and Moore</i> (2002), <i>Globalisation and the New City</i> . London: Palgrave. pp. 228-246.	Census analysis.	1991 UK Census. Sample of Anonymised Records.	

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

Ruston, D. (2002). <i>Difficulty in accessing key services</i> . Office for National Statistics	Survey of 6991 individuals.	Analysis of data collected by ONS Omnibus Survey Jan and March 2000 and 2001, using a representative sample of GP adults aged over 16.	
Salveson, P., Batty, E., Beecham, P., Haywood, R., Kevill, P. (2001) <i>Transport and social exclusion in South Yorkshire</i> . South Yorkshire Primary Care Trust	Interviews, number not stated.	Range of different types of communities from inner city to rural.	
Scottish Executive (2001) <i>Journeys by adults: some Scottish Household Survey results</i> . Scottish Executive		Data from Scottish Household Survey.	
Sherwood, K.B. and Lewis, G.J. (2000) Accessing health care in a rural area: an evaluation of a voluntary medical transport scheme in the English Midlands. <i>Health and Place</i> , 6, 337-350	Seventy-five users of Rural Wheels	Users of the service; 20 yrs resident.	
Shipman, C., Payne, F., Dale, D., Jessopp, L. (2001) Patient-perceived benefits of and barriers to using out-of-hours primary care centres. <i>Family Practice</i> , 18(2) 149-155	Interviews with purposive sample of 172 patients.	Those attending the primary care centre or receiving telephone advice or a home consultation.	
Simma, A & Axhausen, K.W (2001) Structures of commitment in mode use: a comparison of Switzerland, Germany and Great Britain. <i>Transport Policy</i> , 8, 279-288	Three surveys, in Switzerland, Germany and GB.	GB data from NTS 1996-1999	

Skinner, C (2003). <i>Running around in circles</i> <i>Coordinating childcare, education and work</i> . Joseph Rowntree Foundation	Purposive sample of 42 parents.	City chosen by project managers to correspond to four participating cities in Europe. Two areas chosen for their range of socioeconomic circumstances. Respondents contacted by letter via nurseries in primary schools, local playgroups and childminders.	
Skinner, C. (2005) Coordination points: A hidden factor in reconciling work and family life. <i>Journal of social policy</i> . 34. 99-119	Interview with 40 mothers..	Letter sent to mothers via formal childcare providers and school nurseries providing early education. Additional snowballing strategy used to target the number of 20 respondents from social housing neighbourhood.	
Smith, A. (2005) Gender and critical mass: do high cycle flows correlate with a high proportion of female cyclists? <i>London Analytics Research Journal</i>	Secondary data analysis of 2001 Census and London Area Travel Survey, 2001.		
Social Exclusion Unit (SEU) (2003). <i>Making the Connections: Final Report on Transport and Social Exclusion</i> . Office of the Deputy Prime Minister	Consultation with 800 people, five local studies.	Public consultation; ONS Omnibus Survey results.	
Social Exclusion Unit (SEU) (2005). <i>Excluded Older People. Social Exclusion Unit Interim Report</i> . Office of the Deputy Prime Minister	Questionnaire survey of 57 service provider questionnaire. Six focus groups of older people.	Service providers used. Not stated otherwise.	Transport is one element in the barriers to social inclusion, not main focus of report.
Solomon, J. (2000) <i>Social exclusion and the provision of public transport</i> . Department for Transport	Qualitative data from group discussion, individual interviews, surveys, conversations with local people.	In women's and family centres, pubs, working men's clubs, day-centres.	Sampling and data collection unsystematic.

Steer Davies Gleave (2002). <i>Transport for Students in Further Education</i> . DfES	Mixed-method study of transport provision for FE students eight case studies comprising interviews with key stakeholders, student survey, mapping of student locations and parent focus groups; individual numbers not stated.	Variety of locations: remote rural; urban unitary area with cross boundary issues; conurbation with high levels of public transport; ethnic diversity area, with low income and dense passenger transport provision; rural; wide catchment area and low level of LEA support; urban unitary with good transport network; urban unitary location with both urban and rural catchment areas.	
Steer Davies Gleave (2003). <i>Evaluation of First yellow school bus schemes</i> . Department for Transport	Survey of 26000 parents and students, focus groups, extensive consultation, and review of costs and safety reports and benchmarking.	Surveys of parents and students in participating schools in Sept 2002; stakeholders were LAs, operators, driver trainers, drivers; focus groups with parents and students, users and non-users and local residents; follow up survey of parents and students in May 2003.	

Storey, P; Branner, J. (2000). <i>Young people and transport in rural areas</i> . Joseph Rowntree Foundation	Multi-method study to explore transport issues for young people aged between 15 and 24 in rural areas - involving 26 young people in focus group interviews, 650 survey questionnaires, 200 travel diaries and five individual interviews,	Four areas in south west England with each area centred on a secondary school, providing representative samples of 15-19 year olds. The two older groups were selected by the electoral register of the catchment areas of the schools. Two areas in Somerset and two in Dorset chosen because they were not extremely rural and therefore findings could be judged applicable to other rural areas. Two areas were within the accessible rural and two within the remote rural definitions of rurality.	
Stradling, S. (2005) <i>Public Perceptions of Travel Awareness</i> . Transport Research Institute. Scottish Executive.	Survey of 1028 individuals.	A random sample of Enumeration Districts was selected, and within each, quotas were set by age, sex, working status using Census information. The quotas connected sex and working status, to profile the potential targets of future travel awareness messages.	
Stradling, S., Carreno, M., Ferguson, N., Rye, T., Halden, D., Davidson, P., Anable, J., Hope, S., Alder, B., Ryley, T. and Wigan, M. (2005) <i>Scottish Household Survey Analytical Topic Report: Accessibility and Transport</i> . Scottish Executive	Survey of 31000 households.	Data from the Scottish Household Survey.	

Stradling, S., Meadows, M., Beatty, S. (2000) Helping drivers out of their cars Integrating transport policy and social psychology for sustainable change. <i>Transport Policy</i> . 7. 207-215	Survey of random sample of 791 drivers.	Not stated.	
Stratford, N., Christie, I. (2000). Town & country life. In Roger Jowell British Social Attitudes; the 17th Report. Focusing on diversity.	Survey.	British Social Attitudes survey.	
Sturgis, P. and Jackson, J. (2003) <i>Examining participation in sporting and cultural activities: Analysis of the UK 2000 Time Use Survey PHASE 2</i> . Department for Culture, Media and Sport	Analysis of 6500 household questionnaires, 11700 individual questionnaires, and 21000 diaries.	Private households and members. Post code sectors divided into five Government Office Region combinations, taking into account population density and social-economic group of head of household.	
Sustrans (2004) <i>The National Cycle Network route user monitoring report to end of 2004</i> . National Cycle network	Quantitative analysis.	Data from Census 2001 and the London Area Travel Survey 2001.	
Sykes, W., Hedges, A., Ward, K., Melvin, K., Bose, M. (2005). <i>Understanding the service needs of vulnerable pensioners: Disability, ill-health and access to The Pension Service</i> . Department for Work and Pensions.	Qualitative interview study of 75 older people with health problems or disabilities.		

Reference	What did study involve?	How Was Sample Selected/Recruited?	[†] Caveats - Reservations About Research?
The Oddfellows (2001). <i>The Oddfellows Transport and Social Life Survey 2001</i> . The Oddfellows	Telephone interviews with 500 people aged over 60 in England, excluding London.	MORI telephone interviews.	The report does not provide information about sample selection, and there is no indication as to the representativeness of the sample.
Thornton, P., Cordon, A. (2002). <i>Evaluating the impact of access to work: a case study approach</i> . DWP.	Survey of 199 disabled people as part of 'Access to Work' evaluation.	From Users' Views of Access to Work survey.	
Thorpe, N., Law M., Nelson, J. (2000) Raising Transport and Travel Awareness through Feedback from an Electronic Travel Diary. Economic and Social Research Council	Travel diaries completed by 40 individuals .	Volunteers from staff at Newcastle university.	
Titheridge, H. (2004). <i>Modelling the accessibility of opportunities for the young unemployed of the Forest of Dean</i> . TRANTEL Working Paper 11, The Bartlett School of Planning, UCL.	Survey of a random sample of 515 respondents aged between 16 and 24 in the Forest of Dean. Analysis modelled the accessibility to education for young people aged between 16 and 24, in Gloucestershire, based on available educational opportunities within the county along with distance by car, or distance and availability of a connecting bus service.	2001 Census.	

Tolley, R., Bickerstaff, K., Shaw, S. (2003). Beyond public health: benefits of walking on children's social development www.americawalks.org/PDF_PAPE/Tolley2.pdf	Involved 216 children from 172 households. content analysis of 23 primary school children's drawings.	Children and their parents attending Pirehill First School, Stone, Stafs during Sept 1999.	Content analysis carried out on small sample of children's drawings from a single school.
Transport & Travel Research Ltd (2002) <i>Travelling by Car: Final report.</i> Department for Transport	Focus groups with 54 individuals.	Groups structured by social and demographic characteristics which have been shown to affect people's preferences and decisions. Groups are: women up to 25 years, new, younger drivers; men up to 25 years, new younger drivers; women retirement age; men retirement age; disabled drivers of working age; women aged 35-55 years, experienced drivers; men aged 35-55 years, experienced drivers.	
Transport and Travel Research Ltd. (2004). <i>Transport Direct research project MR08: focus group report.</i> Transport Direct.	Focus groups, numbers not stated.	Area selected due to its close proximity to the regional and national motorway and trunk road network and the availability of good public transport services and connections. Focus groups carried out with both male and female respondents who either travel regularly by private car or public transport, also those with reading or writing disability.	
Transport for London (2003) <i>Congestion charging first annual report.</i> Transport for London	Survey of 2286 households in charging zone and inner London; 2132 people from outer London and beyond the M25.	On street recruitment within the charging zone.	

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

Transport Operations Research Group (2005). <i>Travel to Work Issues and Employment in South Tyneside</i> . University of Newcastle upon Tyne	Not stated.	Data taken from 2001 census.	
Transport studies group (2004) <i>Middlesbrough Household Survey, Comparative Study: 2001 and 2003-</i> Transport Studies Group. University of Westminster	Survey of 8080 residents of Middlesbrough.	Not stated.	
Tyler N., ed. (2002). <i>Accessibility and the bus system: from concepts to practice, Accessibility Research Group</i> . Thomas Telford Publishing, London.	Description of initiatives to improve bus accessibility.		
University of Brighton with Sirius Seven Software. (2004). <i>Travel to Study Patterns and Causes in London</i> . London learning and Skills Council	Analysis of 530163 student records from across London, plus a mixed-method study by the University of Brighton with Sirius Seven Software (2004) - involving 16 focus groups and a survey (albeit non-random) of 993 young people.	No information about focus groups; survey participants were recruited using a non-random approach - researcher visiting classes in participating institutions.	No information about focus group composition, survey carried out using non-random methods, study area = London so generalisability may be limited.
URS Thorburn Colquhoun. (2000) <i>Transport choices of car users in rural and urban areas</i> . DETR	Not stated.	According to life stage and income and settlement type based upon a range of urban and rural locations (Greater Manchester, Bedford, and settlements in north Suffolk and to the east of Hull).	

Wardman, M., Hine, J., Stradling, S. (2001) <i>Interchange and Travel Choice Volume 1 & Interchange and Travel Choice Volume 2</i> . Scottish Executive Central Research Unit	Based on 556 questionnaires, four focus groups, and 32 interviews.	Recruited in car park locations; on street.	Although demographics included disabled people (Vol1,p.29), these were screened from the analysis where numbers were small. Little reference is made to issues specific to those with such difficulties and no reference is made to them in the conclusions of Vol 1. However, Vol 2 includes Disabled Transport Users Focus Group.
Wardman,M and Tyler,J. (2000) Rail network accessibility and the demand for inter-urban rail travel. <i>Transport Reviews</i> . 20. 3-24	Survey of 2656 individuals.	Regional Railways North East on-train surveys of customers on their longer distance routes.	
Watts, E., Stephenson, R. (2000) Evaluating an employer transport plan: effects on travel behaviour of parking charges and associated measures introduced at the University of Sheffield. <i>Local Environment</i> 5(4) 435-450	Questionnaire survey of 500 staff (188 responses) and five focus groups.	Stratified random sample of staff at University of Sheffield.	
Weller, P., Feldman, A., Purdam K. (2001) <i>Religious discrimination in England and Wales</i> . Home Office Research	Involved 318 interviewees, and 628 questionnaire respondents.	Interviews held in four cities with individual members of religious traditions, representatives of religious organisations; representatives of secular agencies in the public, private and voluntary sectors. Questionnaire sent to religious organisations throughout England and Wales, to 20 distinct faith groups.	Low response rate.

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

Welsh Consumer Council (2004). People Without Cars. Welsh Consumer Council	Survey of 988 individuals.	Primary sampling unit is Unitary Authority. Series of sampling points within this such that minimum of 68 interviewing points throughout the Principality are selected with probability proportional to resident population.	
White, J. (2003), Barriers to eating five a day fruit and vegetables, <i>Community Practitioner</i> , 76 (10): 377-380	Interviews with seven individuals.	Group of residents living in small defined area with some existing relationships, mainly low income and single parent families.	Findings from a single focus group only.
Willitts, M., Anderson, T., Tait, C., Williams, G. (2005) . <i>Children in Britain: Findings from the 2003 Families and Children Study (FACS)</i> . Department for Work and Pensions	Analysis of the 2003 Families and Children Study, 9352 families.	Selected from Child Benefit records.	
Windle, G. (2004). Transport in rural Wales. <i>Working with older people</i> . 8(2), 32-35	Interviews with 423 people aged 70 and over living in rural Wales.	Not stated.	
Wixey, S., Jones, P., Titheridge H. and Christodoulou, G. (2003) <i>Measuring Accessibility as Experienced by Different Socially Disadvantaged Groups: Social Groups User Needs Survey Findings</i> . Transport Studies Group - University of Westminster	Involved 231 respondents, and eight focus groups.	On street interviews in different locations, with several conditions of recruitment for respondents.	

Wixey, S., Jones, P., Titheridge H., Christodoulou, G. (2004) <i>Measuring Accessibility as Experienced by Different Socially Disadvantaged Groups' Bus User Walk Access Barriers: Keighley</i> . Transport Studies Group -University of Westminster	Survey of 996 stage 1; interviews with 31 stage 2.	On-vehicle survey of bus users.	
Wixey, S., Jones, P., Titheridge H., Christodoulou, G. (2004) <i>Measuring Accessibility as Experienced by Different Socially Disadvantaged Groups' Bus /DLR/ Underground Walk Access Barriers in Tower Hamlets</i> . Transport Studies Group -University of Westminster	Survey of 326 bus users, 269 DLR users, and 252 underground users.	Questionnaires distributed by hand to local service users boarding or alighting.	
Wixey, S., Jones, P., Titheridge H., Christodoulou, G. (2005) <i>Measuring Accessibility as Experienced by Different Socially Disadvantaged Groups End of Project Summary Report</i> . University of Westminster	Summary of project involving focus groups, interviews and surveys in Keighley & Tower Hamlets.		
WS Atkins (2002). <i>Local Authority Survey</i> . Commission for Integrated Transport	Based on 139 questionnaires; 59 interviews.	Council members with a transport portfolio and officers responsible for transport planning in English local authorities in Sept 2002.	

Evidence Base Review on Mobility: Choices & Barriers for Different Social Groups

WS Atkins (2000). <i>Increasing bus use for journeys to school: a guide to best practice.</i> Department for Environment, Transport and the Regions	Evaluation of 35 schemes.	Not stated.	This is a guide with case study evidence and examples of best practice, rather than a research report.
Wu, B., Hine, J.N (2002). Report on Analysis of Databases for Impacts of Road User Charging and Work Place Parking Levy on Social Exclusion/Inclusion. University of Ulster	Quantitative analysis.	Secondary analysis of data from British Household Panel Survey (BHPS); General Household Survey (GHS); National Travel Survey; ONS Omnibus Survey.	

9. Supplementary References

Department for Transport, 2003, *What is accessibility planning?*

http://www.dft.gov.uk/stellent/groups/dft_localtrans/documents/page/dft_localtrans_023937.hcsp

Department for Work and Pensions, 2006, *A new deal for welfare: empowering people to work*,

http://www.dwp.gov.uk/aboutus/welfarereform/docs/A_new_deal_for_welfare-Empowering_people_to_work-Full_Document.pdf

Social Exclusion Unit, 2003, *Making the Connections: final report on transport and social exclusion*,

<http://www.socialexclusionunit.gov.uk/downloaddoc.asp?id=66>