UNIVERSITY OF SOUTHAMPTON

FACULTY OF SOCIAL AND HUMAN SCIENCES

School of Social Sciences

Mobile, connected and included:

**The role of information and communication technology
in supporting mobility and independence in later life**

Michelle Heward

Thesis for the degree of Doctor of Philosophy

June 2011

UNIVERSITY OF SOUTHAMPTON

ABSTRACT

FACULTY OF SOCIAL AND HUMAN SCIENCES
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MOBILE, CONNECTED AND INCLUDED:

THE ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGY
IN SUPPORTING MOBILITY AND INDEPENDENCE IN LATER LIFE

Michelle Heward

Mobility in later life can take various forms, as a result of changes in personal circumstances, such as physical impairments and driving cessation. Therefore, understanding the concept of mobility in later life is complex and challenging. Through an interdisciplinary qualitative approach, this thesis examines the role of information and communication technology in supporting mobility and independence in later life. The research highlights a gap in the theoretical understanding of the concept of mobility, and uses insights from the three thematic areas of transportation, technology and older people, as well as key concepts such as social inclusion and independence, in order to develop a new conceptual framework to study mobility in later life. Research that brings these three areas of transportation, technology and older people together, is largely absent from the study of mobility. The research methodology included two phases of data collection. Firstly, the Mobilisation and Accessibility Planning for PEople with Disabilities (MAPPED) project, which focused on the field trials of tailored handheld navigational devices by older people; and secondly, the Getting Out and About project, which involved older people participating in in-depth semi-structured interviews with hypothetical vignettes. The results highlight the importance of mobility in maintaining independence in later life, whilst recognising the heterogeneity of older people by demonstrating a variety of attitudes, experiences and perceptions towards travel behaviour and information and communication technology in later life. The thesis argues that through the facilitation of virtual mobility, such technologies can offer older people an important alternative to physical mobility, which can be further explored in the future design and implementation of policies aimed at supporting older people and improving their well-being and social inclusion.

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Declaration of Authorship

I, Michelle Heward, declare that the thesis entitled: *Mobile, connected, included: The role of information and communication technologies in supporting mobility and independence in later life*, and the work presented in the thesis are both my own, and have been generated by me as the result of my own original research. I confirm that:

- this work was done wholly or mainly while in candidature for a research degree at this University;

- where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;

- where I have consulted the published work of others, this is always clearly attributed;

- where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;

- I have acknowledged all main sources of help;

- where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;

- none of this work has been published before submission.

Signed:

Date:

Dedication

In loving memory: for my Grandpa, a truly remarkable and inspirational gentleman.

Acknowledgements

Although the intellectual content and words in this thesis are my own, it would not have been possible without many other people.

I would like to express my gratitude to the organisations and individuals who made this research achievable through their assistance with, and participation in, the two phases of empirical data collection.

Sincere thanks go to my supervisors: Professor Maria Evandrou and Mrs. Jackie Rafferty, for their support, advice and enthusiasm over the past few years.

I would like to thank Full Picture, the creative design agency that turned my pencil sketches of the conceptual framework into the computer images utilised within this thesis.

I appreciate the ongoing practical and emotional support from my family and friends. Particular thanks go to my father David Heward for the many motivational discussions and his assistance with proof-reading. Thanks also to my mother Linda Buckland, my Step-father Keith Buckland, and my brother Christopher Heward for their continued encouragement and financial support.

I am also grateful to the EPSRC for funding my doctoral studentship.

Abbreviations

ADL	Activities of Daily Living
ADSS	Association of Directors of Social Services
APPLGG	All Party Parliament Local Government Group
ASK-IT	Ambient Intelligence System of Agents for Knowledge – based on Integrated Services for mobility impaired users
CLG	Communities and Local Government
CTS	Centre for Transport and Society
DBIS	Department for Business, Innovation and Skills
DCMS	Department for Culture, Media and Sport
DEFRA	Department of the Environment, Food and Rural Affairs
DETR	Department of the Environment, Transport and the Regions
DfT	Department for Transport
DFLE	Disability-Free Life Expectancy
DIP	Digital Inclusion Panel
DoH	Department of Health
DPTAC	Disabled Persons Transport Advisory Committee.
DTLR	Department of Transport, Local Government and the Regions
DWP	Department for Work and Pensions
EPSRC	Engineering and Physical Research Council
ESRC	Economic and Social Research Council
FUTURES	Future Urban Technologies: Undertaking Research to Enhance Sustainability
GPS	Global Positioning System
HM	Her Majesty's
IADL	Instrumental Activities of Daily Living
IATBR	International Association for Travel Behaviour Research
ICT	Information and communication technology
JUC-SWEC	Joint University Council and Social Work Education Committee

LAA	Local Area Agreement
LATS	London Area Travel Survey
LGA	Local Government Association
LTP	Local Transport Plan
MAPPED	Mobilisation and Accessibility Planning for PEople with Disabilities
NIACE	National Institute of Adult Continuing Education
NSF	National Service Framework
NTS	National Travel Survey
ODI	Office for Disability Issues
ODPM	Office of the Deputy Prime Minister
OECD	Organisation for Economic Co-Operation and Development
ONS	Office for National Statistics
PA	Programme Activity
PSA	Public Service Agreement
QUEST	Quebec User Evaluation of Satisfaction with assistive Technology
SARA	Safe, Accessible, Reliable and Affordable
SPARC	Strategic Promotion of Ageing Research Capacity
SPSS	Statistical Package for Social Science
SUE	Sustainable Urban Environment
TLE	Total Life Expectancy
UK	United Kingdom
UKTRC	United Kingdom Transport Research Centre
WHO	World Health Organization

Thesis structure

This thesis examines whether information and communication technology can support mobility and independence in later, using a qualitative interdisciplinary approach. The research connects the thematic topics of transportation, technology and older people, through the intersections of social inclusion, independence and mobility. The aim is to explore older people's perspectives on travel behaviour and information and communication technology. The contribution to knowledge stems from highlighting a gap in the academic interpretations of the theoretical understanding of the concept of mobility. This research takes forward the theoretical understanding of mobility through the development of a conceptual framework for mobility in later life. The thesis is formed of ten chapters. This part of the thesis provides an overview of the contents of these ten chapters.

Chapter One provides an introduction to the thesis and the context of this research. It highlights the funding source, research agenda and academic disciplines that this research draws upon. The first chapter also introduces the thematic topics of transportation, technology and older people, and the application of the concepts of social inclusion, independence and mobility as intersections between these thematic topics. This chapter also sets out the interdisciplinary approach utilised within this study; the rationale; the policy framework; and the research aims, objectives and questions.

Chapters Two, Three and Four form the review of existing literature and policy. Chapter Two sets out the parameters of the review, as well as the literature around travel behaviour and the use of information and communication technology in later life. In accordance with the concerns of the research questions and the first research aim, this chapter provides an overview of existing travel behaviour research within the field of transportation studies, as well as a wider interdisciplinary review of travel behaviour research. There is also discussion of patterns of access and use of information and communication technology in later life. This chapter also refers to studies that draw upon the 'voices' of older people, within these areas of research.

Chapter Three reviews the literature around the conceptual intersections used within this research to connect the thematic topics of transportation, technology and older people. This chapter therefore explores the concepts of social exclusion, social inclusion, independence and mobility in later life. The gap in the academic interpretations of the theoretical understanding of the concept of mobility is discussed in detail here. This study develops a unique contribution to knowledge in the form of a conceptual framework for mobility in later life that will assist in taking forward the theoretical and practical understanding of mobility. The conceptual framework for mobility in later life based upon the findings of the literature review is included in this chapter. The conceptual framework is further developed later within the thesis (Chapter Nine) to take into account the results of the empirical data.

Chapter Four examines the areas of public policy connected to the thematic topics of transportation, technology and older people. It explores the reasoning behind the development of the first cross-government ageing strategy within the UK, alongside the associated policy debates surrounding the future of adult health and social care. As well as examining policies connected with transportation and later life; independence, well-being and choice in later life; social exclusion and inclusion in later life; and digital exclusion and inclusion in later life.

Chapters Five and Six form the methodology chapters. Chapter Five focuses on the research design and methods of data collection utilised within this study. By outlining the rationale for the chosen, interdisciplinary, qualitative, research strategy; as well as discussing the two phases of empirical data collection. Chapter Six considers the ethical issues, data analysis and dissemination strategies that were utilised during this study. It provides an overview of the ethical considerations before, during and after the empirical data collection, alongside the approach used to analyse the empirical data. This chapter offers specific details on the grounded theory approach utilised during the collection and analysis of the empirical data, together with an overview of the treatment of the data and the computer software used during the analysis. This includes how the conceptual framework was used as a tool in the analysis of the empirical data. The chapter also briefly outlines the planned approach for the dissemination of the findings.

Chapters Seven and Eight present the main findings from the two phases of empirical data collection undertaken as part of this study. Chapter Seven presents background information and data on patterns of travel behaviour in later life. This chapter explores the motivations and importance of travel-based mobility in later life. It also looks at the factors that impact upon travel-based mobility in later life. Chapter Eight provides data on the ways that information and communication technology support the travel-based mobility of older people. This chapter explores the types of information and communication technology that the participants have access to, and make use of, as well as the motivations and the barriers that impact the use of information and communication technology in later life.

Chapter Nine discusses the findings of the empirical data and the literature review in relation to the research questions. This chapter focuses on understanding travel behaviour within later life, by exploring the significance of travel-based mobility in later life. The diversity of older peoples experiences, attitudes and aspirations are also explored within this chapter. Chapter Nine also presents the conceptual framework for mobility in later life, which has been further developed to take into account the findings of the empirical data collection. This chapter examines the types of access and use the participants make of information and communication technology, in order to determine the potential for information and communication technology in supporting mobility and independence in later life.

Chapter Ten provides conclusions to the thesis, and recommendations for future research in this area. The chapter provides broad conclusions to this research, in relation to the aims and objectives; as well as outlining the value of the study to the social work discipline and the wider interdisciplinary arena. Policy recommendations are also set out within this chapter, and focus on how information and communication technology can support mobility and independence in later life. Finally, this chapter highlights areas for future research to explore, as well as the final reflections of this thesis.

Chapter 1: Introduction

This thesis utilises a qualitative interdisciplinary approach to examine whether information and communication technology (ICT) can support mobility and independence in later life. The concepts of social inclusion, independence and mobility are applied as intersections to connect the thematic topics of transportation, technology and older people. Research that brings these three areas together, is largely absent from the study of mobility, therefore the interdisciplinary approach used within this study is original and, it is hoped, will become a catalyst for future research in this area. The thesis sheds light on older people's perspectives of travel behaviour and information and communication technology, as well as highlighting a gap in the academic interpretations of the theoretical understanding of the concept of mobility. It offers a unique contribution to knowledge in the form of a conceptual framework for mobility in later life that will take forward the theoretical understanding of mobility, as well as providing a visual tool for application in work with older people. This chapter provides an introduction to the thesis as well as the context of the research, and many of the issues, concepts and ideas that are mentioned in this chapter are discussed in further detail throughout the rest of the thesis. The chapter is divided into four sections. Section 1.1, offers a brief overview of the context of the research, by establishing the funding source, research agenda and academic disciplines that it draws upon. This section also introduces the thematic topics of transportation, technology and older people explored within the study, and the interdisciplinary approach that this research adopts. Section, 1.2, considers the rationale for this research. Here the focus is on why the concepts of social inclusion, independence and mobility within later life have been used as intersections, and the societal changes within the modern Western world that make this study such a relevant and timely contribution to social theory and debate. These include the demographic changes that relate to the process of population ageing (Tomassini, 2005: 2), and the speed and scale of the development and proliferation of transportation and communication technology within modern society (Castells, 2000). In this section the significance of public policy linked to the thematic topics of transportation, technology and older people is also established. In the third section of this chapter, 1.3, the research aims, objectives and questions are outlined; whilst the final section, 1.4, provides a summary of this introductory chapter.

1.1 Context of the research

This section provides a synopsis of the context of this research. This section is divided into five sub-sections. The first sub-section, 1.1.1, looks at the overarching funding source, research agenda and academic disciplines from which this research stems. Sub-section, 1.1.2, builds upon this by providing an overview of the specific project which funded the studentship that this thesis came out of. The third sub-section, 1.1.3, summaries the interdisciplinary approach employed within this research. Sub-section, 1.1.4, introduces how the thematic topics of transportation, technology and older people, and the conceptual intersections of social inclusion, mobility and independence underpin this research. The fifth sub-section, 1.1.5, gives a brief overview of the two phases of empirical data collection that this thesis draws upon.

1.1.1 The overarching funding source, research agenda and academic disciplines

This doctoral research was funded by the Engineering and Physical Sciences Research Council (EPSRC), and forms a part of the EPSRC Sustainable Urban Environment (SUE) programme[1]. The EPSRC SUE programme (Ibid.) is concerned with improving the quality of life of citizens within the United Kingdom (UK), by supporting the "sustainable development of the economy through research carried out by several different consortia" (EPSRC SUE programme, Ibid.). This research fits into the EPSRC SUE Programme (Ibid.) transportation cluster, under the five year research agenda: EPSRC Future Urban Technologies - Undertaking Research to Enhance Sustainability (FUTURES) project[2] (details of which are discussed in the paragraph below). The EPSRC FUTURES project (Ibid.) research agenda provided a wide framework which governed the direction of the research undertaken within it. This framework was fairly flexible due to the interdisciplinary nature of the EPSRC FUTURES project (Ibid.). In terms of this thesis, the framework was used to guide the initial decisions around the direction of this research, which lead the University researcher to explore older people's perspectives of transportation and technology. Although this framework had no direct impact on the theoretical and methodological perspectives and approaches that were ultimately utilised.

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[1] See: http://www.urbansustainabilityexchange.org.uk/ISSUESSueProgramme.htm
[2] See: http://www.sue-futures.org

1.1.2 The "Future Urban Technologies: Undertaking Research to Enhance Sustainability (FUTURES)" project

The EPSRC FUTURES project (Ibid.) ran for five years, from April 2004 until June 2009. The project was formed of a consortium of leading academic and stakeholder partners across the fields of engineering, technology, environmental science and social science; and included members from central and local government, transport operators, and service providers. The academic research partners were from research centres and groups based at the University of Southampton, the University of the West of England, and the University of Leeds. Professor Michael McDonald of the Transport Research Group at the University of Southampton was the Principal Investigator with overall responsibility for the conduct and success of the EPSRC FUTURES project (Ibid.). The stakeholder partners incorporated representatives in National Government from the Department of Transport, as well as Local Government representatives, including several representatives from City and County Councils across the UK. The EPSRC FUTURES project (Ibid.) focused on the "inclusive potential of technological developments that could improve future transportation systems and services, and lead to more sustainable urban mobility" (EPSRC FUTURES project, Ibid.). The ways that people participate within society and access information and services are enhanced by successful transportation systems and services (EPSRC FUTURES project, Ibid.). The research programme was derived from "the belief that transport's capacity to support a sustainable urban environment is dependent on the need to address the interactions between and relationships concerning people, systems and vehicles" (EPSRC FUTURES project, Ibid.). The three key topic areas of people, systems and vehicles were perceived to be the crucial factors that generate the "levels and patterns of urban mobility", and in turn determine the "associated economic, social and environmental impacts" of urban mobility upon society (EPSRC FUTURES project, Ibid.).

The EPSRC FUTURES project (Ibid.) consisted of five research programme activities (PAs), as shown below in Figure 1. Programme Activity 1 focused on programme management, co-ordination and steering. Programme Activity 2 was the core research phase and included the projects: PA 2a Navigating the city - supporting the unfamiliar urban traveller; PA 2b Bespoke services for personal travel and goods movement; and PA 2c Environmental assessment of new vehicle technologies with improved confidence. Programme Activity 3 looked at the three key research topics of people, systems and vehicles and the implications for the sustainable urban environment. Programme Activity 4 was concerned with consultation and dissemination. The findings and recommendations of the EPSRC FUTURES project (Ibid.) draw conclusions as to how technological

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developments could impact upon the future of sustainable urban mobility. They will be used to "advise policymakers and those responsible for transport delivery, in order to enhance the base of research knowledge, contribute to teaching, and inform the population more widely" (EPSRC FUTURES project, Ibid.). Programme Activity 5 was the plus research phase and included the projects: PA 5a Traveller information services: assessing barriers to their use; PA 5b Teleworking - trends in and causes of location independent working; PA 5c Innovative uses of roadspace; and PA 5d Impacts of new technology on urban traffic management. This thesis is one of three doctoral research studentships associated with Programme Activity 3. The intention of these three doctoral studentships was for each study to focus on one of the three FUTURES parameters of people, systems and vehicles. Programme Activity 3 therefore provided the doctoral research students with the "potential for focusing their research within or across the research areas in PA 2 and/or PA 5" (EPSRC FUTURES project (Ibid.). There are parallels between the work in the following projects and that of this thesis, in that, they all draw upon the experiences of people and utilise qualitative data collection methods: PA 2a Navigating the city - supporting the unfamiliar urban traveller; PA 2b Bespoke services for personal travel and goods movement; PA 5a Traveller information services: assessing barriers to their use; PA 5b Teleworking - trends in and causes of location independent working. These aforementioned projects and this thesis therefore fit within the realms of the EPSRC FUTURES project (Ibid.) topic area of 'people'.

Figure 1: Framework of the EPSRC FUTURES project research programme
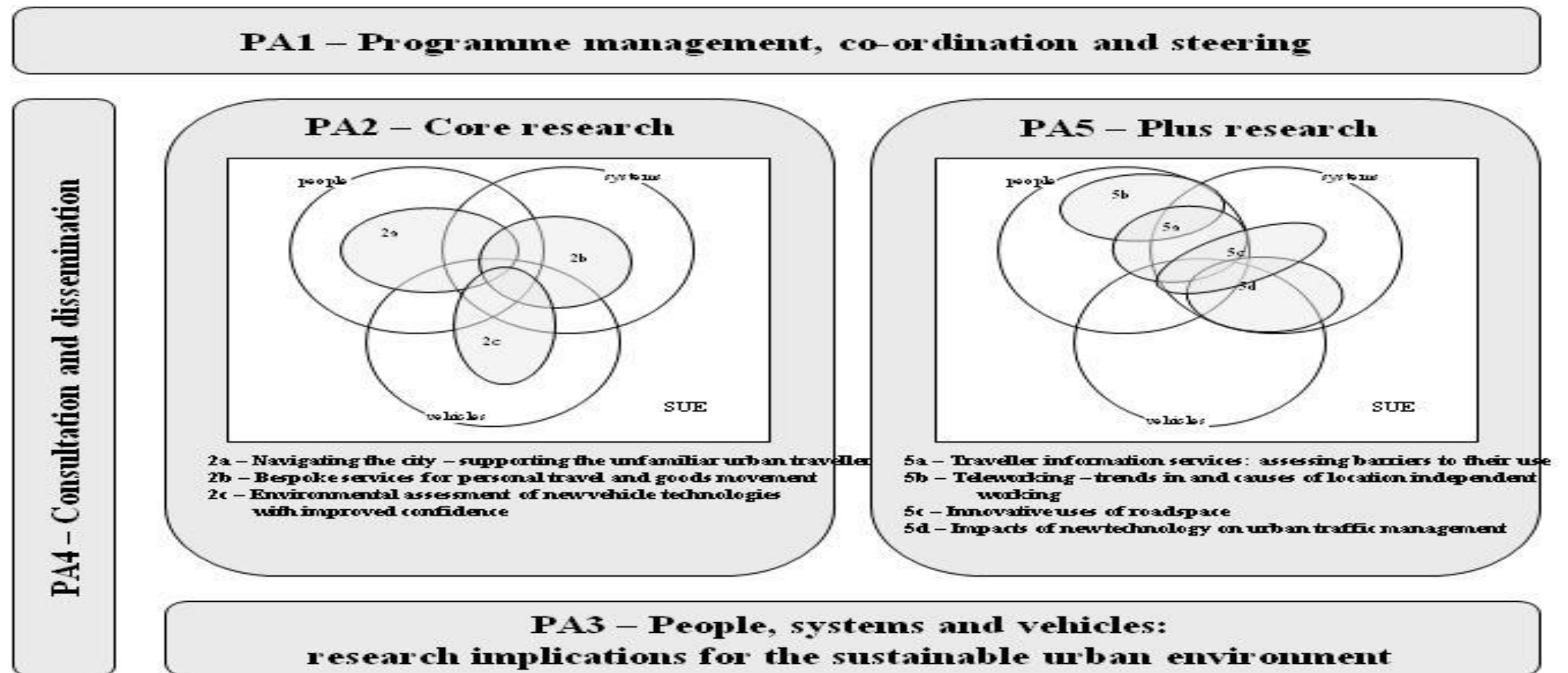
Source: Conceptual framework of the EPSRC FUTURES research programme, available at: http://www.sue-futures.org/programme.html

1.1.3 Interdisciplinarity

As an element of the EPSRC FUTURES project (Ibid.), the intention of this study was to examine how technological advances can support the future of sustainable urban mobility for older people. To facilitate this, the research undertook an interdisciplinary approach, drawing from the fields of: gerontology, social work, sociology, social policy, transportation studies, and human geography. Making sense of such a broad spectrum of disciplines is challenging, however, as this research demonstrates, such interdisciplinary linkages are essential in order to move particular fields of research forward (Nissani, 1997: 201-213). The key challenge for this research is to illustrate the intersections between the thematic topics of transportation, technology and older people, as discussed in the following sub-section.

1.1.4 The thematic topics and the conceptual intersections

This research focuses on the thematic topics of transportation, technology and older people. Transportation, technology and older people are wide research areas in their own right; therefore it is necessary to define the parameters of these thematic areas as set out within this study. As a qualitative study, this thesis explores transportation and technology through the eyes of older people. In order to narrow the focus of this study, the concepts of social inclusion, mobility and independence have been utilised as intersections between the thematic top areas of transportation, technology and older people. The different meanings given to the conceptual intersections within existing literature and policy are discussed within the literature review; however, at this point, a brief definition of these concepts, as they have been defined within this study, is useful. Social inclusion has been described as a process encouraging participation in civil society (Preston and Raje, 2007: 152). Social inclusion in later life is connected to integration within the community, neighbourhood and family, and is therefore based upon a range of factors including: decent health, decent income, the importance of the home, the importance of good relationships with family and friends, having a role, feeling useful, and being treated with respect (Social Exclusion Unit, 2006: 18). Independence in later life is about being able to do things alone, making ones own decisions, sustaining physical and mental capacity, being able to access resources, and social standing and self-esteem (Plath, 2008: 1357). Some older people maybe interdependent on support networks such as friends, family, careers; and assistive technology like wheelchairs. However, older people want to avoid complete dependence on others, by doing things for themselves. Being mobile in later life enables older people the ability to get up and move around, the desire to be free to come

and go, and the ability to have one's own space (Mitchell and Jonas-Simpson, 1995, cited in Bourret et al, 2002: 339). Mobility in later life is about more than people travelling; instead it is about the way that people "interact with each other in their social lives" (Kakihara and Sorensen, 2002: 2). The concept of mobility is becoming "multi-dimensional encompassing interrelated, physical, cognitive, emotional and social dimensions" (Rush and Ouellet, 1993: 489). Thus, the conceptions of mobility are evolving in line with the technological developments within modern Western society. Urry (2002: 12) argues that there are five now five conceptions of mobility: the movement of people, the physical movement of objects to different categories of people, the imaginative travel that results from display of images of places and people in print and visual media, virtual travel in real time that transcends geographical distance, and communicative travel via letters, messages and the telephone. This study will explore these conceptions of mobility from the perspective of later life. The rationale for using social inclusion, mobility and independence as intersections, and the way that this has been undertaken, is set in sub-section 1.2.4. This way of linking the thematic topics is original, and therefore, it is hoped that it will be a catalyst for further research in this area.

1.1.5 The empirical data collection: The 'MAPPED' project and the 'Getting Out and About' project

The empirical data collection that underpins this research was completed in two separate phases. The first phase was the Mobilisation and Accessibility Planning for People with Disabilities (MAPPED) project[3], which focused upon the field trials of tailored handheld navigational devices by sample groups of older people aged 65 years old and over, and people with disabilities aged 18 years old and over. The MAPPED project (Ibid.) took place between September 2004 and March 2008, and was co-funded under the Information Society Technologies Sixth Framework Program of the European Commission. The MAPPED project (Ibid.) was a division of the ASK-IT[4] project, also funded by the European Commission. The ASK-IT project (Ibid.) was an "integrated project that aimed to develop an ambient intelligence space for the integration of functions and services for Mobility Impaired people across various environments, to enable the personalisation of services and facilitate knowledge processing" (ASK-IT project, Ibid.). The author of this thesis had links to the MAPPED project (Op. Cit) that were established through members of the doctoral advisory team based at the University of Southampton. The advisory team had connections with the MAPPED project (Ibid.) consortium partners at a Local Government Department in the South of England. The objective of the

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[3] For more information see: http://services.txt.it/MAPPED/
[4] Ambient Intelligence System of Agents for Knowledge-based and Integrated services for Mobility Impaired Users - for further details see: http://www.ask-it.org/

MAPPED project (Ibid.) was to develop, an "intelligent system that would empower persons with disabilities to play a full role in society and to increase their autonomy" (MAPPED project, Ibid.). The second phase of data collection involved older people, aged 65 years old and over, participating in individual in-depth interviews with hypothetical vignettes. To maintain clarity throughout the thesis, the second phase will be referred to as the 'Getting Out and About' project. Both phases of data collection are examined in further detail within Chapter Five. This section has explored the context of this research; the following section examines the rationale for this research.

1.2 Rationale

In order to set out the rationale underpinning this study, this section is split into five sub-sections. The first sub-section, 1.2.1, explores the demographic changes that relate to the process of population ageing. The second sub-section, 1.2.2, illustrates why this research is such a relevant and timely contribution to social theory and debate, focusing on the speed and scale of the development and proliferation of transportation and communication technology within modern society. Sub-section 1.2.3, outlines the inclusive potential of information and communication technology in line with the demographic changes of population ageing. Sub-section, 1.2.4, affirms how the concepts of social inclusion, independence and mobility in later life have been used to connect the thematic topics of transportation, technology and older people. The final sub-section, 1.2.5, establishes the policy relevance of this research.

1.2.1 The demographic changes associated with population ageing

Within developed countries, rising life expectancy combined with declining fertility rates are resulting in demographic changes that are leading to the process of population ageing (Tomassini, 2005: 2; World Bank, 1994: iii). The process of population ageing means that increasingly, a proportionally larger segment of the total population will be made up of older individuals, and although this is not a new phenomenon, the process is starting to speed up (House of Lords, 2003: 8). As the number of older people within the population increases, so does the need for effective health and social care services, adequate financial resources, and suitable housing and transportation options. Thus, as discussed in further depth within the literature review, the ageing of the population is a critical policy issue (Grundy, 1991: 133). A population projection by the Office for National Statistics (ONS), presented in the table in Appendix 1, shows that within the UK the number of people aged 65 years old and over is projected to increase from 9.9 million in 2008, to

12.7 million in 2020, and to 22.8 million in 2066. The table in Appendix 1 also demonstrates that the projected number of people aged 65 years old and over will increase at variable rates for different age groups. The projected number of people aged 65 to 74 years old will increase more slowly, from 13.8 million in 2046 to 15 million in 2083, whereas the projected number of people aged 85 years and over will increase more rapidly, almost doubling from 5.2 million in 2046 to 10.3 million in 2083. This means that the largest projected growth is in the projected numbers of people aged 85 years old and over. The growth of the proportion of the population who are aged 65 years old and over has given rise to a debate over the societal implications of this ageing of the population (Metz, 2000: 149). At the heart of the debate is the financial concern connected to the rising number of dependents vis-à-vis those who will make a financial contribution through taxation (Johnson, 1996: 8). These economic concerns then have implications from an individual to governmental level, especially in relation to the financing and provision of health and social care, pensions, and *suitable* consumer products and services (Metz, 2000: 149: *my emphasis*).

In short, there is a concern over whether there will be sufficient funds to cater for the complex needs of the rising proportion of older people, and apprehension about the increase of poverty and social exclusion in later life. This means that the issues of poverty and social exclusion in later life are high on current research and policy agendas. The transformation of the age composition of older people within society means that, in general, more people are living longer (Tomassini, 2005: 3). However, these extra years of life are not necessarily spent in a 'disability-free state', and although disability-free life expectancy (DFLE) has increased along with total life expectancy (TLE), the figures are not always correlated (Evandrou, 2005: 40-41). It is probable that the number of people with "impaired mobility on account of age" will grow considerably, although such a trend could be affected by future trends in the health status of older people (Metz, 2000: 149). As TLE reaches an all time high, it is anticipated that more older people than before can expect to live out their later years with an age related disability, or in poor, or not good, health (Evandrou, 2005: 40-41). Though, there may also be a positive side to the increasing numbers of older people. Many older people give back to their local community through voluntary work, as carers for their partners, friends or family, and assisting their extended family, friends and neighbours by helping with tasks such as childminding, dog walking and grocery shopping (Social Exclusion Unit, 2006).

1.2.2 Ageing in the information society

The speed at which information and communication technologies have proliferated society has transformed the way in which people participate in modern society, especially the ways people communicate and access information and services (Castells, 2000: 375-394). The internet, in particular, has become an "important global resource" for both developed and developing countries (World Summit for the Information Society, 2008). However, households occupied by individuals aged 65 years old and over are the least likely to have a computer or internet access at home, and research in the UK shows that this group are the least likely to use the internet at all (Haezewindt and Christian, 2004: 59). The number of people aged 65 years old and over that are making use of the internet is steadily increasing. As is shown in Table 1, the proportion of people aged 65 years old and over that used the internet within the last three months increased from 24% in 2007 to 30% in 2009. Although, Table 1 also demonstrates that, despite this increase, the number of older people that have never used the internet still remains a high percentage of 64% in 2009. Therefore, this study focuses in to explore information and communication technology, rather than technology in broad terms.

The diffusion of information and communication technology within society is disproportional; therefore there are evident disparities in the level of both access and use of information and communication technology (Norris, 2001: 3-4). Some people are adopting new forms of technology, whilst others are left in a state of exclusion (Norris, 2001: 3-4). This phenomenon is known universally as the digital divide (Norris, 2001: 3-4). Increasing the numbers of older people that are making use of information and communication technology is a complex issue, as this type of exclusion is often problematic. Social exclusion can be experienced in a number of different ways, and so to can digital exclusion. Different cohorts may have diverse experiences, and therefore older people may have different experiences to younger people, which need to be taken into consideration (Pantazis et al, 2006[5]). For example, older people are less likely than younger people to be employed in the labour market, and as much of the literature on social exclusion in Europe focuses on participation in the labour market, it has the potential to skew results, if such factors are not given prior consideration (Patsios, 2006: 432). Those who find themselves excluded from using information and communication technology, may also be excluded on account of other characteristics such as social class, gender and ethnicity. In such circumstances people can experience multiple disadvantage; this can then make it difficult for them to access appropriate services. In terms of the relevance for this study, the speed and scale of technological advances has

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[5] For example, Pantazis et al (2006) found that older people are more likely to have fear of crime compared to younger people.

left many older people feeling alienated. Older people are less likely than younger people to have grown up using information and communication technologies, meaning that, increasingly the digital divide is being perceived as an age divide (Rafferty and Steyaert, 2007; Steyaert and Gould, 2009: 743-44), as is discussed further within the literature review (sub-section 3.5.1).

There are steps being taken to try to overcome this digital divide. The World Summit for the Information Society (2008) and World Information Society (2006) state that their commitment is "to build an Information Society that is people-centred, inclusive and development-oriented where everyone can create, access, utilize and share information and knowledge" (World Summit for the Information Society, 2008; and World Information Society, 2006). To turn the "digital divide into a digital opportunity for all", that will provide access to information and communication technology infrastructure and services that are "universal, ubiquitous, equitable and affordable" (World Summit for the Information Society, 2008; and World Information Society, 2006). This will "enable individuals, communities and peoples to achieve their full potential in promoting their sustainable development and improving their quality of life" (World Summit for the Information Society, 2008; and World Information Society, 2006). However, it should also be noted that disparities in the levels of access and use of information and communication technology that are widely evident today (Norris, 2001: 3-4), may or may not figure in the makeup of future societies, depending on the speed and nature of technological innovations in the future. Younger generations that have utilised information and communication technology across their life course could be more adapt to cope with such technology in later life, or they could get left behind by future advances in information and communication technology. At this point in time it is not possible to know which way advances in future technologies will impact younger cohorts when they reach later life; so it is then essential to look at the needs of the current cohorts of older people, not only to improve their lives, but to develop effective policies that may also shape the life chances of future cohorts. This sub-section has focused on ageing within the information society, demonstrating the importance of understanding what types of information and communication technologies older people make use of, and have access to, before determining its inclusive or exclusive potential.

Table 1: Table showing when UK adults last used the Internet between 2007 and 2009 (in percent)

		Within the last 3 months			More than 3 months			Never used		
		2007	**2008**	**2009**	**2007**	**2008**	**2009**	**2007**	**2008**	**2009**
	16-24	90	93	96	6	..	..	4	..	..
	25-44	80	87	92	6	5	3	13	8	5
Age groups	45-54	75	78	81	6	..	..	19	17	16
	55-64	59	63	72	5	..	4	35	33	24
	65+	**24**	**26**	**30**	**5**	**5**	**5**	**71**	**70**	**64**

Base: UK adults

Source: ONS, available at: https://spreadsheets.google.com/ccc?key=0AonYZs4MzlZbd
HFPSFRGY1RyeVdkdDkxT2FmWVAzN2c&hl=en#gid=4

1.2.3 Population ageing and the inclusive potential of information and communication technology

These demographic changes are important when considering the transportation and travel needs of the ageing population. Developments in assistive technology and information and communication technology already support many older people to remain independent for longer, by living in their own homes for as long as possible, and improving quality of life by assisting with Activities of Daily Living (ADL) (Cowan and Turner-Smith, 1999: 75), as explored further in the literature review (section 2.5). It is common for health and social careers to support older people with Activities of Daily Living (ADL), such as bathing, dressing, and feeding; and Instrumental Activities of Daily Living (IADL), such as using the telephone, preparing meals, shopping for groceries, housework and laundry. Further development of information and communication technologies that can support older people to remain living independently, by assisting them with ADL and IADL could help to reduce the financial cost of health and social care in the future, particularly as the number of older people within society grows. Therefore, the scope of this thesis, and future studies that focus on the inclusive potential of information and communication technology, is nonetheless as important at the present time, as it is significant for future generations.

Advances in information and communication technology are transforming the way that people live their lives, creating an information society (Castells, 2000). Advanced communications and computing technologies, information, and knowledge are the fundamental elements that make up the information society (Webster, 2000: 70). The proliferation of information and communication technologies has resulted in a "digital revolution which has created the platform for a free flow of information, ideas and knowledge across the globe" (World Summit for the Information Society, 2008: 1). These technological advancements have filtered through processes such as deindustrialisation and globalisation, resulting in alterations of the meanings of notions such as time and space within modernity (Castells, 2000; Giddens, 1991). If technological innovations continue to transform the ways in which people live their lives, it is important to better understand what impact this has on the experience of ageing, both for current and future generations. The next sub-section will focus on the experience of ageing in the information society. Despite the increase in the number of older people using information and communication technology, many are still unable, or unwilling, to participate; as will be discussed below. Inclusive design has been defined as, "the design of mainstream products and/or services that are accessible to, and usable by, as many people as reasonably possible.....without the need for special adaptation or specialised design" (British Standards Institute, 2005). Future technological systems and services need

careful consideration so that they are better designed with an ageing population in mind. This could be facilitated by combining the principle of inclusive design, with the involvement of older people themselves across the whole design process, through methods such as focus groups.

1.2.4 Establishing the transportation connections: The conceptual intersections of social inclusion, independence and mobility in later life

> *"People with inadequate access to motorised or personal mobility can find that they are unable to participate in the civic, economic, political and social life of the community, because their access to opportunities, social networks, goods and services is reduced by their lack of mobility".*

Kenyon, 2006: 1

The travel behaviour, needs and expectations of older people vary in accordance with changes in later life personal circumstances, such as physical impairments and driving cessation. It is not uncommon for older people to experience feelings of depression, loneliness, and exclusion as their level of physical mobility is curtailed with age (Crawford and Walker, 2006: 29). However, poor access to transportation and a lack of financial resources also limit mobility in later life (Barnes et al, 2004: 61). This thesis therefore argues that mobility is a multi-faceted concept underpinned by social, cultural, economic and political factors. This research explores the forms of mobility through the development of a conceptual framework for mobility in later life, the rationale for developing this is explored in further detail in Chapter Three (section 3.6). The main focus of this study lies on the facilitation of mobility through transportation systems and technological developments. More specifically the analysis of the empirical data examines the factors that impact upon the travel-based mobility of older people, as well as the ways in which information and communication could support the mobility and independence of older people. In this sense transportation is viewed, like the terms social inclusion and social exclusion, as two sides of the same coin. Transportation on the one hand can reinforce social exclusion: spatially, physically and financially (DETR, 2000a); and on the other is a tool for social inclusion through easing access to everyday essential places, such as healthcare practitioners and food shops (Social Exclusion Unit, 2003). Thus, by increasing access to opportunities and civic participation (Kenyon, 2006: 1), transportation is seen to have the potential to build a more inclusive society (Lyons and Urry, 2006: 2).

Research within the transportation field must consider technological advances in accordance with the "social, behavioural and motivational dimensions" of the field (Lyons

and Urry, 2006: 3). Although, this is a philosophy which is missing from many mainstream transportation studies; the sociological perspectives of transportation are beginning to be recognised in some research (see for example, Kenyon et al, 2002; Lyons et al, 2008; Marsden et al, 2008; Glaister, 2002; Metz, 2000 and 2003; Alsnih and Hensher, 2003; Hine and Mitchell, 2002; and Grieco, 2009). The recent development of research that explores the sociological perspectives of transportation is highlighted through the creation of the United Kingdom Transport Research Centre (UKTRC[6]). UKTRC (Ibid.) is a recent collaboration between the Economic and Social Research Council (ESRC), the Department for Transport (DfT), and the Scottish Government. It aims to, "encourage greater social science involvement in addressing transport challenges and thereby building the supporting evidence base for effective transport policy making, both nationally and locally" (UKTRC (Ibid.). Research undertaken in the Centre for Transport and Society (CTS), at the University of the West of England, also provides an example of projects that examine the sociological aspects of transportation. Studies undertaken by the CTS have evolved and amalgamated into a number of projects, which bolster the person-centred shift within transportation research through the employment of qualitative methods of data collection. Under the EPSRC FUTURES project (Op. Cit.) a number of studies that reflect a social science lens over the field of transportation are worth mentioning here. Lyons and Everett (2004) have looked at approaches to supporting the needs of unfamiliar travellers navigating the city, which was followed up by a study by Lyons and Farag (2006) that assessed the barriers that stop people making use of traveller information services. Lyons and Haddad (2004) have also explored at the current trend in tele-working, which shows an increment in the amount of people working from home for most or part of the week.

For the field of transportation studies to progress the number of qualitative studies needs to grow (Lazendorf, 2003). Within the field of transportation studies, it has been argued that, "qualitative research techniques can complement traditional quantitative approaches, but also stand as a legitimate mode of inquiry in their own right" (Clifton and Handy, 2001: 4). With this in mind, the intention of this study is to use a qualitative approach to take steps forward within the field of transportation studies. People need to be informed about transportation, about the services that exist, timetable information, and how to make use of the available services (Social Exclusion Unit, 2003). Thus, increasingly the information required is personalised or specific to the individual. Policy debate around the 'personalisation' of services for older people reflects the diversity of the population (see, Wanless, 2002) (as discussed in Chapter Four, sub-section 4.4.2). This research looks at the potential for advances within the fields of transportation and technology to come together to meet these individual needs. For example, mobile technologies, such as

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[6] Based at Imperial College; University College London; and the University of Leeds.

laptop computers, mobile telephones, and global positioning systems (GPS), have the "potential to deliver personalised information tailored to individual needs and abilities" (Fischer and Sullivan, 2002). This is why this thesis draws upon data from the MAPPED project (Op. Cit.) which explored a particular type of mobile technology, a handheld navigational device, from the perspectives of older people and people with disabilities. The following sub-section explores the relevance of public policy to this research.

1.2.5 Policy relevance

In order to understand the relevance and timeliness of this research, it is important for this study to discuss the debates and issues that have been prioritised within recent public policy. Recent public policy agendas, within England, reflect the concerns linked to the demographic changes of population ageing. These are epitomised by the publication of the first two cross-government 'Ageing Strategies' (DWP, 2005; HM Government, 2009), which outlined measures to prepare for the demographic changes of population ageing (Audit Commission, 2004a). There are a number of policy areas, issues and debates that are connected to the thematic topics of transportation, technology and older people. These policy areas are: social exclusion/inclusion in later life; transportation in later life; the ageing strategy; independence, well-being and choice in later life; adult health and social care; and digital exclusion/inclusion in later life. These policy areas are discussed in detail in Chapter Four. In this section, the rationale for this study has been defined; the following section outlines the research aims, objectives and questions.

1.3 Research aims, objectives and questions

In this section the research aims, objectives and questions are explained. The overarching aim of this study is to consider whether information and communication technology can increase independence in later life, by providing an alternative to physical mobility through the facilitation of virtual mobility. The research aims, objectives and questions have been developed in order to explore this overarching aim. This section is divided into three sub-sections, the first, 1.3.1, outlines the research aims. The second, 1.3.2, focuses on the research objectives; whilst the third sub-section, 1.3.3, sets out the research questions. Each sub-section also specifies the intended means for achieving these research goals.

1.3.1 Research aims

This research aims to:

1. Examine the literature that exists around travel behaviour and the use of information and communication technology in later life, and ascertain the extent to which the 'voices' of older people are included.

2. Explore the intersections between the thematic topics of transportation, technology and older people.

3. Consider the value of qualitative insights within the field of transportation studies.

This research has three aims. The first aim is to review the literature and policy around the thematic topics of transportation, technology and older people, in order to determine whether the 'voices' of older people are included in this type of research. As will be discussed more fully within the literature review, there is a plethora of areas of research connected to the thematic topics of transportation, technology and older people, examples include research into assistive technology and driving in later life. However, it is not possible to explore all such literature within the confines of this thesis; therefore the purpose of the research aims and objectives is to narrow the focus and define key areas of literature that should be included within this review. The first aim therefore, looks specifically at the knowledge that exists around travel behaviour, and the use of information and communication technology in later life, and is addressed within Chapter Three. The second aim is to explore the intersections between the thematic topics of transportation, technology and older people, and is discussed throughout the literature review chapters. The third aim considers the value of qualitative insights in the field of transportation studies, which has traditionally given precedence to quantitative methods

and approaches. It is noted within the literature review that, increasingly scholars are utilising qualitative methods and approaches within the field of transportation studies (for example, Clifton and Handy, 2003; Marsden et al, 2008; Poulenez-Donovan and Ulberg, 1994). The third aim takes this a step further, by considering the value of qualitative methods and approaches in light of the actual insights that were generated through the use of such methods. This third aim uses the results of the qualitative empirical data collected during this study to expand the knowledge in this area, as is considered in Chapter Nine (section 9.5).

1.3.2 Research objectives

The research objectives of this study are to:

1. Examine the factors that impact travel-based mobility and the use of information and communication technology in later life, by undertaking a review of literature and policy, and through the 'voices' of older people obtained during primary qualitative empirical data collection.

2. Explore the possibility of developing a conceptual framework for mobility in later life, and the contribution this would make to social theory, practice and debate, such as the 'mobilities' paradigm.

This study has two research objectives, which are implemented through the literature review and the empirical data collection. However, the nature of what is uncovered during the literature review and the data collection will determine how these objectives are accomplished. The first objective is to examine the factors that impact travel-based mobility, and the use of information and communication technology in later life. This will be completed through a review of literature and policy in these areas, and via primary qualitative empirical data which will enable the 'voices' of older people to be heard. This study moves away from existing research that often takes a one sided view of the barriers that impact travel and use of information and communication technology in later life, by focusing on the facilitators and barriers that impact mobility in later life. It examines the experiences of older people, alongside the existing literature and policy, to present a holistic overview of the facilitators and barriers that impact these aspects of later life. There are gaps in the academic interpretations of the theoretical understanding of the concept of mobility, and understanding the meaning of mobility to older people, as discussed in Chapter Three (section 3.3.). Therefore, the second objective is concerned with the exploration of the possibility of developing a conceptual framework for mobility in later life, and the contribution this would make to social theory and debate, social work

practice, policy and planning and older people themselves. This is examined in Chapter Three (section 3.6) and Chapter Nine (section 9.2).

1.3.3 Research questions

The research aims and objectives are integrated into the research questions, which explore travel behaviour and the use of information and communication technology in later life. The research questions are outlined in this sub-section, as the context is discussed within the following literature review chapters. Details of how the study engages with these research questions and a definition of travel-based mobility can be found in the first methodology chapter (sub-section 5.1.2).

1) What patterns of travel behaviour are associated with later life?

    1a) What motivates older people to undertake travel-based mobility and how important is it to them?

    1b) What factors impact upon the travel-based mobility of older people?

2) In what ways can information and communication technologies support the travel-based mobility of older people, and what are the limitations?

    2a) To what extent does accessible travel information assist older people in getting out and about?

    2b) Would the provision of tailored handheld navigational devices support older people in getting out and about further and more often?

    2c) Do older people substitute physical with virtual journeys, and if so, how do they feel about it?

1.4 Summary

This chapter has introduced the background to the research, including the aims, objectives and research questions. It has also outlined the current societal changes that make this study a relevant and timely contribution to social theory and debate concerned with the mobility of the ageing population, including the process of population ageing and the proliferation of information and communication technology. This research draws together various discipline areas, and focuses on the complex intersection between gerontology, technology and transportation, both of these lenses making an original contribution to knowledge. This research contributes directly to the knowledge base on the mobility and independence of the ageing population. It is also intended to contribute to

knowledge by filling a gap in knowledge by advancing the concept of mobility through the development of a conceptual framework. The conceptual framework will be the first of its kind to visually show the factors that influence mobility in later life. It is intended as a tool that will help to develop the theoretical understanding of the concept of mobility, as well as have a practical application for health and social care practitioners, volunteer organisations working with older people, and in policy and planning development. It is also hoped that future studies exploring mobility in later life, and research within the 'mobilities' paradigm (Urry, 2007), will draw upon the ideas presented here, and where possible develop them further. The following three chapters make up the literature review, focusing on the existing empirical research, key concepts, theories, and the public policy that underpins this research. Chapter Two and Three review the literature connected to the thematic topics of transportation, technology and older people, and the conceptual intersections of social inclusion, independence and mobility. Chapter Two focuses on the literature around travel behaviour and information and communication technology in later life. Chapter Three looks at the conceptual intersections of social inclusion, independence and mobility in later life. Chapter Four has a slightly different focus, providing an overview of the relevant social policy debates. In order to answer the research questions set out within this chapter (section 1.3), this research explores the potential of the combination of suitable technological innovations with adequate transportation systems and services, for maintaining independence in later life. Within this study, methodological and theoretical approaches and perspectives from the social sciences are applied to the field of transportation studies (similar to: Lyons and Urry, 2006; and Pickup and Town, 1983), as outlined in the methodology chapters, Five and Six. Chapters Seven and Eight present the main findings of the empirical data collection, whilst Chapter Nine discusses these findings in relation to the existing literature and policy in this area. Chapter Ten is the final chapter which presents the conclusions of the study, alongside providing recommendations for policy and future research in this area.

Chapter 2: Literature Review – Parameters and Thematic Topic Areas

The interdisciplinary nature of this study meant that it proved particularly challenging to find an appropriate way forward for the review of the literature and policy. This process was complicated further by the hope that the path chosen would be original, and a possible catalyst for future research in this area to draw and expand upon. Thus, it is necessary to outline the parameters and scope of this literature review before presenting its findings. The purpose of this literature review is to describe and evaluate the relevant literature and policy around the thematic topics of transportation, technology and older people, in order to ground the thesis in the appropriate academic and government debates. The literature review revealed that social inclusion, independence and mobility are key conceptual areas that intersect between the thematic topics of transportation, technology and older people. It also provides an exploration of the theoretical underpinnings and the meanings that older people give to the concepts of social inclusion, independence and mobility, as well as the relationships that connect them. As shown in Figure 2, the thematic topics and the conceptual intersections are inter-related to one another. These connects will be discussed throughout the literature review; briefly they are linked to older people's notions of quality of life and well-being in later life, through recognition of individual differences and the avoidance of isolation and dependence in later life.

Figure 2: Figure to show the inter-relationships between the thematic topics and the conceptual intersections.
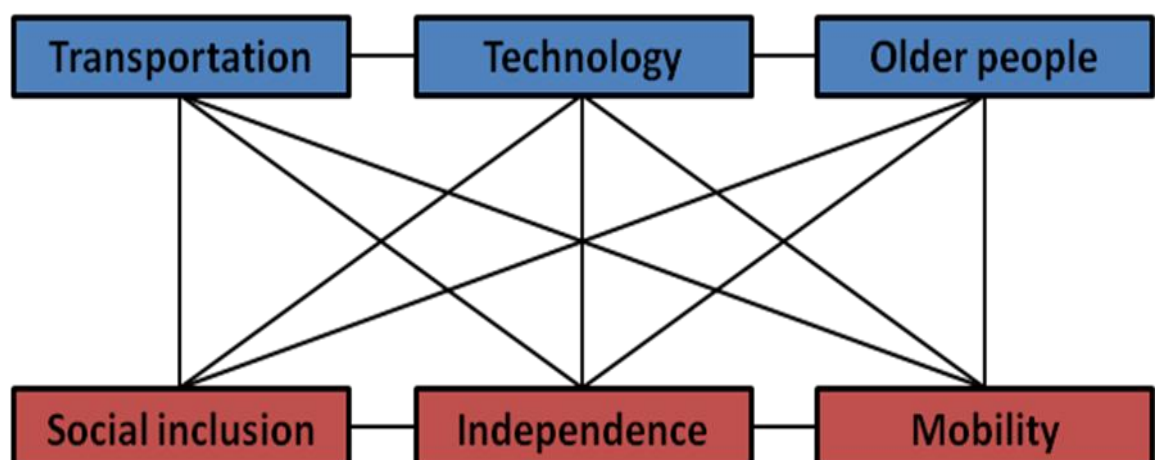
Key: Thematic topics; Conceptual intersections

The review of literature and policy is split across three chapters, and is structured in accordance with the research aims, objectives and questions. This is the first of the three literature review chapters, which begins by outlining the parameters of the whole literature review. The focus of the rest of this chapter then shifts in order to examine the academic literature and debates around the thematic topic areas of transportation, technology and older people. In line with the research aims, objectives and questions the emphasis here lies upon travel behaviour and information and communication technology in later life. In Chapter Three the literature review continues by exploring the intersecting concepts of social inclusion, independence and mobility, focusing on the theoretical underpinnings, the meanings that older people give to the concepts, and the connections between them. The final literature review chapter, Chapter Four, determines the policy framework that underpins this research. This chapter is divided into six sections. The first section of this chapter, 2.1, outlines the parameters of the literature review, including the key words, sources and date restrictions used during the search for literature and policy. The second section, 2.2, explains the reasons for pragmatically defining older people as 65 years old and over within this study. Section, 2.3, examines the field of travel behaviour research and the developments that are leading to the use of qualitative, as well as more traditional quantitative methodologies. The fourth section, 2.4, focuses what existing research reveals about patterns of travel behaviour in later life, alongside exploring the existing literature around the transportation needs, expectations and requirements of older people. The fifth section, 2.5, provides more detail on the knowledge about information and communication technology in later life. The final section, 2.6, provides a summary of the key points of this literature review chapter.

2.1 The literature review: key word searches and general parameters

The initial literature search revealed a multitude of existing sources of policy and literature that could potentially connect the thematic topics of transportation, technology and older people. This literature review therefore, narrowly focuses on the main literature sources, empirical data, and government policy reports and developments connected to both the topic areas of transportation, technology and older people, and the intersections of social inclusion, independence and mobility. The approach taken during this literature review is interdisciplinary, meaning that the knowledge presented comes from a number of disciplines, and reflects the breadth of associated topics (Nissani, 1997). This interdisciplinary approach uncovered a wealth of literature and data around the thematic topics and conceptual intersections, which ultimately meant that it was necessary to set parameters about what could be discussed within this literature review. Given that the thesis draws upon empirical data from a qualitative study with participants aged 65 years old and over, it was considered essential for the literature cited in this thesis to present the existing perspectives or 'voices' of older people. The literature discussed was also restricted to the Western world, given the cultural differences in terms of the social norms, philosophy, ethical values, political systems and some technologies, when compared with the Eastern world. The first literature search using the three key words 'transportation', 'technology' and 'older people', provided a wide range of results[7]. However, many were considered too wide of the research area of mobility in later life, and so a joint key word search using: 'transportation and technology', 'technology and older people', and 'older people and transportation', was also undertaken. The results of this search proved more successful, in that they had defined links to the research area, and included examples of qualitative research that integrated the perspectives and 'voices' of older people. Reading the literature and policy documents that resulted from the initial key word and joint key word searches, lead to a final set of key words being determined. These final key words were: 'independence', 'social inclusion', 'social exclusion', 'mobility', 'later life', 'older people', 'travel behaviour', 'transportation technology', 'information and communication technology', 'travel', 'transport', 'inclusive design', 'design for all', 'digital divide', 'digital exclusion', 'digital inclusion' and 'virtual mobility'. Further policy and literature searches were then conducted using various compositions of these final key words.

The key word searches were conducted in a number of relevant academic journal databases including: AgeInfo; Science Direct; Jstor; Emerald; and Web of Knowledge.

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[7] For example a search in web of knowledge using the terms 'transport*', AND 'technology', AND 'age*' revealed 8644 results.

The majority of the results were from journal articles published between 1996 and the time of writing in 2009. However, there were several references to journal articles published before 1996; these have only been included in this review if considered relevant in the development of a particular field or topic. Searches for books, edited collections and conference papers were also undertaken over the internet through various websites including the British Library; Southampton University Library; and Google books and scholar. Site visits to Southampton University Library and Southampton City Library were also undertaken, and interlibrary loans were requested from the British Library catalogue. The results ranged from 1990 to 2009. A few references were evident before 1990, and again these have only been included in this review if relevant to the progression of a discipline or topic. A range of government department websites were also searched for policy documents, these included: the Cabinet Office; Department for Communities and Local Government; Department for Culture, Media and Sport; Department for Environment, Food and Rural Affairs; Department for Transport; Department for Work and Pensions; Department of Health; Department of Energy and Climate Change; HM Treasury; and Office for Disability Issues. The review explores National Policy documents and reports, including Green; White; and Discussion Papers, since the previous government took office in 1997, until the time of writing this in 2009.

The remainder of this chapter explores the thematic topics of transportation, technology and older people, in accordance with the research questions, and the first research aim to 'examine the literature that exists around travel behaviour and the use of information and communication technology in later life, and ascertain whether the 'voices' of older people are included in these types of research'. As previously discussed, the initial key word search revealed many articles with links to the thematic topics that would have taken the focus too wide and been impossible to review within the confines of this thesis. Therefore, it was necessary to tighten the focus of this study by defining the thematic topics in line with the research aims, objectives and questions. The results of the joint key word searches (using the terms: 'transportation and technology', 'technology and older people', and 'older people and transportation'), revealed links between the research topic in studies which explored travel behaviour and information and communication technology in later life. These research areas also included examples of studies that integrated the perspectives and 'voices' of older people. As will be discussed throughout this and the following chapter, the literature review draws on a number of disciplines and interdisciplinary topic areas, as defined in Table 2. The intersecting concepts of social inclusion, independence and mobility in later life are discussed in the following chapter.

Table 2: Table showing the disciplines that the literature review draws upon, and the interdisciplinary topic areas which are discussed throughout the literature review.

Disciplines that the literature review draws upon:	Interdisciplinary topic areas that are discussed in the literature review:
- Gerontology - Human Geography - Social Work - Sociology - Social Policy - Transportation studies	- Travel behaviour in later life - Information and communication technology in later life - Social exclusion and inclusion in later life - Digital exclusion and inclusion in later life - Independence, choice and control in later life - Assistive technology - Gerontechnology - Mobility in later life

2.2 The relevance and timeliness of research into later life

This section outlines the relevance and timeliness of research that focuses on later life, in line with the current demographic changes of population ageing. There are two sub-sections, the first, 2.2.1, provides a definition of 'old age' and specifies the rationale for classifying older people as aged 65 years old and over within this study. The second sub-section, 2.2.2, looks at the macro and micro level implications of the process of population ageing.

2.2.1 Defining 'old age'

Ageing is a continuous process and does not start at a given age (Grundy, 1991: 133). Age structuring means that every society defines age and the roles that are in some way age-linked differently (Kertzer, 1989: 5). The conventional Gerontological terminology for 'older' people includes all those aged 65 years old and over (Grundy, 1991: 133). In terms of defining changes in the life cycle, there are also occasional references to those aged 75 years old and over as the 'older old'; and to those aged 65-74 years old as the 'younger old' (Grundy, 1991: 133). This research pragmatically defines older people as aged 65 years old and over. In Western modernity, the life course perspective defines life as a set of phases that relate to the three key stages of education and training, work, and retirement (Settersten and Mayer, 1997: 248-249). However, it has been argued that,

scientific treatment of the life course must allow for the "heterogeneity, discontinuity, and contingency that exists in present-day societies" (Settersten and Mayer, 1997: 234). If age and age-related roles within contemporary society lack clarity, there are clearly criticisms of using retirement as a measure of 'old age' (Settersten and Mayer, 1997: 234-249). As is applicable to the current patterns of retirement within the UK, in which both voluntarily and involuntarily retirement is happening over a range of ages (Settersten and Mayer, 1997: 234-249). Although the statutory retirement age within the UK is currently 60 years for a female and 65 years for a male, it will be harmonised to 65 years for both sexes between 2010 and 2020; and between 2024 and 2046 this will gradually increase for both sexes from 65 to 68 years old[8]. Thus, although retirement is considered a heterogeneous experience that many people will experience in different ways, there are some experiences during the process that are similar, or that perhaps some people aged below the thresholds are yet to encounter, such as the decision to remain in employment or not. Therefore, the statutory retirement age is considered a pertinent stage in the life course and defines the choice of the age group of 65 years old and over within this research. As this study is also concerned with the policy implications of an ageing population, the choice of age group also reflects the definition of 'older people' used in the Ageing Strategies set out by the previous government (DWP, 2005; and HM Government, 2009), which are discussed in more detail within Chapter Four.

2.2.2 The macro and micro level societal implications of population ageing

The demographic changes of population ageing have both macro and micro level societal implications: on a wider scale there is concern over the provision of the resources needed to care for an increasingly ageing population; and at an individual level refer to maintaining independence in later life for as long as possible. This research is concerned with the implications of population ageing at the micro or individual level, with a primary focus on increasing or maintaining independence in later life, for as long as possible, through innovations in the fields of transportation and technology. The aim is not to focus on the later years of life when disabilities and poor health are often most prevalent, it is to look at the ways that innovations within the field of transportation and technology are able to join together to assist older people as a heterogeneous group with varying attitudes, experiences and degrees of health status. However, it is essential to recognise here that the implications of population ageing and the increase in TLE, on older people and society as a whole, are both relevant. It is therefore impossible to consider the micro without at least considering the macro. Within this study it is argued that, in actively exploring new

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[8] See:http://www.direct.gov.uk/en/Pensionsandretirementplanning/StatePension/DG_4017919

ways of increasing or maintaining independence in later life, within the fields of transportation and technology, there are also associated macro level benefits to society as a whole. These benefits start with the potential financial savings that innovations within the fields of transportation and technology could produce in the future. For example, assistive technology and other innovations have the potential to lessen the total labour force required to support the increasingly ageing population of the future, by decreasing the amount of health and social care required by older people (i.e. bed sensors lesson the need for a career to check that an older person is up and out of bed in the morning).

Although, it was not a straightforward process identifying a form of technology that combined transportation and technological innovation to assist mobility and independence in later life. Perhaps so challenging as older people are considered the most likely group to make use of public transportation (Help the Aged, 2007a), as well as the group with the slowest uptake of technological innovations (Shepherd and Bryson, 2007). It was therefore decided to explore older people's attitudes towards innovations in the field of transportation and technology, as this was considered to be a robust test of the potential impact that they may have upon other groups within society, including people with disabilities, other vulnerable groups, and the population in general. The principle of inclusive design encompasses "the design of mainstream products and/or services that are accessible to, and usable by, as many people as reasonably possible....without the need for special adaptation or specialised design" (British Standards Institute, 2005), as discussed in the introductory chapter (sub-section 1.2.2). This means that transportation and technological products and services designed using this principle should be equally as accessible to people of all age groups with disabilities and mobility problems, as well as applicable for the population more generally. This way of thinking however makes independence the optimum state. Examples of other ways of living promote independence along with community and companionship, for example communal living or social networking could develop in response to the demographic changes of population ageing to combat loneliness and isolation in later life. Though this is outside of the parameters of this study, it is worth considering that independence is a political economic option as well as a choice, and therefore is positioned between the individual and society. The following section looks at the types of research that explore travel behaviour.

2.3 Research that explores travel behaviour

This section, which is split into three sub-sections, reviews the existing types of research that focus upon travel behaviour. Sub-section 2.3.1 focuses on the existing travel behaviour research within the field of transportation studies. The other two sub-sections provide a wider interdisciplinary review of travel behaviour research: Sub-section 2.3.2 looks at the main quantitative studies and data sets; whilst 2.3.3 highlights the key qualitative studies.

2.3.1 The development of travel behaviour research in the field of transportation studies

Travel behaviour analysis has identified itself as a significant area of scholarly research within the field of transportation studies and the social sciences, as well as being practically applicable for policy and planning departments (Mahmassini and Kitamura, 2000: 1). This is demonstrated through the development of the International Association for Travel Behaviour Research (IATBR), with a tri-annual conference to deliberate methodological and theoretical progression in the field (Lyons, 2003: 339; Mahmassini and Kitamura, 2000: 1). Professor Peter Jones of University College in London, and the Director of UKTRC (Op. Cit.), was instrumental in the development of the field concerned with understanding travel behaviour and the implications for transportation planning within the UK. Most of the existing research that explores travel behaviour within the field of transportation studies, in the UK, draws upon quantitative methods and data. As this section demonstrates, traditionally research within the field of transportation studies utilises survey data to create forecasting models which predict future patterns of travel behaviour and demand. This type of quantitative research looks at patterns in travel behaviour, although it does not explain why such travel behaviour is undertaken, which qualitative research in this area has the potential to do. In comparison to the number of quantitative studies, there is a small number of existing qualitative research studies that explore travel behaviour within the field of transportation studies (such as, DfT, 2001). Although, recently there is growing evidence of interdisciplinary research exploring travel behaviour through the use of qualitative methods and data, as discussed in sub-section 2.3.3. An article by Jones (2009) summarises the development of the underlying paradigm of the field of transportation studies over the last fifty years. The underlying paradigm of the field of transportation studies has developed in 'layers' as researchers and practitioners have continually questioned the accepted norms of the discipline (Jones, 2009: 1). The 'layers' of the transport paradigm have developed in five stages: 'vehicle-

based'; 'trip-based'; 'activity-based'; 'attitude-based'; and 'dynamics-based' (for a detailed account see, Jones, 2009). As these 'layers' have evolved they have brought new perspectives into transportation research and policy making (Jones, 2009: 1). Each 'layer' involves a range of academic disciplines, presents its own research questions, has its own data collection and analysis challenges, distinctly supports policy debate, and has different requirements for modelling and evaluation (Jones, 2009: 1). This development is discussed in further detail in the sub-section below.

2.3.1.a Quantitative forecasting models

Within the field of transportation studies forecasting models utilise quantitative survey data to predict future patterns of travel behaviour and demand. In the UK, forecasting modelling dates back to post World War II (Jones, 2002: 14). At this time the focus was on 'vehicle-based' forecasting, as the road network was developing to accommodate the increase in car use (Jones, 2002: 14). 'Vehicle-based' forecasting was concerned with predicting future traffic demands which were determined through the use of growth factor models that relied on data collected through roadside traffic counts, interviews and limited household surveys (Jones, 2009: 3). An example of 'vehicle-based' modelling is vehicle ownership forecasting (see, Tanner, 1978). 'Vehicle-based' forecasting is an "integral part of the process of decision-making in the transport sector", which is essential for the "design and evaluation of investments in the road system" (Tanner, 1978: 14). Forecasting models changed over time, "as a result of changing requirements and availability of data" (Tanner, 1978: 15). However, scholars recognised that these 'vehicle-based' methods do not "explicitly recognize the influence of economic and policy variables", such as increases in fuel costs (Tanner, 1978: 15). It was also felt that 'vehicle-based' perspectives ignored the travel behaviour of non-car drivers and those who used a mixture of modes of transportation (Jones, 2002: 14). This led to a shift in the unit of analysis of these forecasting models, from 'vehicle-based' to 'trip-based', as scholars began to consider travel as the "movement of people from origin to destination" (Jones, 2009: 4), and the "vehicle as the means to the end" (Jones, 2002: 14). 'Trip-based' analysis borrowed theory from the field of economics to develop more sophisticated models (Jones, 2009: 4). Examples of 'trip-based' modelling include trip distribution and mode choice analysis (see, Baxter and Ewing, 1981). The 'trip-based' paradigm is associated with the development of household travel surveys and the use of travel diaries (Jones, 2009: 4). However, 'trip-based' modelling has been criticised for "the continued inability of models to estimate the separate effects of various elements of travel cost" (Ewing, 1980: 1). Others also argued that it was "questionable whether 'trip-based' analysis provided an understanding of why people travel" (Jones, 2009: 5).

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This led to some travel behaviour researchers (for example, Jones et al, 1983) beginning to argue that the unit of analysis went beyond 'trip-based', and should instead be focused upon 'activity-based' travel behaviour modelling (Jones, 2002: 14). The premise of this being that in most cases people do not travel meaninglessly from one place to another, rather they do so to perform an activity (Jones, 2002: 14). The emphasis of 'activity-based' analysis was to understand travel behaviour, and has led to research that "explores daily behaviour patterns and advances in modelling" (Jones, 2009: 7). 'Activity-based' modelling (for example see, Axhausen and Garling,1992) includes time of day switching, trip/tour generation, and modelling inter-personal linkages (Jones, 2009: 14).This analysis introduced the use of 'activity-based' and time use diaries, and the collection of more detailed travel information, such as the location of facilities (Jones, 2009: 7). 'Activity-based' modelling has also led to operational 'tour-based' models which focus on the journey as a whole (Jones, 2009: 7) and have arisen, in the UK, to model, for example, the effects of road pricing charges (see, Polak et al, 1993). 'Activity-based' analysis is "conceptually rich" and has "contributed to a much broader debate about the reasons why people travel, and has provided policy makers with an enlarged set of policy instruments and perspectives" (Jones, 2009: 7). Travel behaviour can be influenced by "reducing constraints on the timing of activities" (for example, flexible working hours can spread peak traffic), or "encouraging home working and the use of tele-services" (such as, internet shopping) (Jones, 2009: 7). However, despite this policy interest in flexible working, home working, and the use of tele-services, the problem when designing surveys is that these terms "lack any agreed-upon definitions yet they are used in common parlance as if they did" (Pratt, 2000: 99). This makes it difficult to measure, "through surveys, the effectiveness of telecommuting in achieving such social objectives as reducing commute trips" (Mahmassini and Kitamura, 2000: 3).Thus, there are few surveys that collect data on this (Jones, 2009: 7), although empirical qualitative research in this area is developing (for example, Lyons and Haddad, 2004).

The 'attitude-based' perspective has involved the work of psychologists and market researchers in order to explore public opinions and attitudes related to transportation issues and services (Jones, 2009: 8-9). There are limited 'attitude-based' modelling applications, although the method has been used to model the impacts of information provision (Jones, 2009: 14). However, scholars were concerned with the "lack of attention that had been paid to changes in behaviour and attitudes over time", which led to the development of 'dynamics-based' perspectives in the field of transportation studies (Jones, 2009: 9). 'Dynamics-based' modelling provides a longitudinal approach which considers variability in travel behaviour (Jones, 2009: 9-10). An example of 'dynamic-based' modelling is dynamic model estimation (see, Kitamura, 1990). 'Dynamic-based' perspectives have encouraged the development of multi-day and multi-week travel or

activity surveys, time series data sets, and household panel surveys (Jones, 2009: 10). As has been illustrated in this section, each of these 'layers' of the transportation paradigm has led the field in a different direction and encouraged wider methodological experimentation (Jones, 2002: 15). However, although this has led to an increase in the understanding of travel behaviour, it has also enlarged the demand on forecasting models, (Jones, 2002: 15). Transport models have been criticised in the wider policy and transport planning environment for being too simplistic in their assumptions and too complex for non-professionals to understand (Jones, 2002: 16). In order to tackle the emerging transport planning and policy issues, like the shift towards an integrated transportation policy that promotes sustainability through greener travel options such as walking, cycling and car sharing, there is now, more than ever, a need to understand travel behaviour (Jones, 2002: 4). The existing modelling and evaluation frameworks are insufficient in understanding "what motivates people to travel" (Jones, 2002: 4). For example, economic theory and modelling applications assume that all travellers have access to accurate travel information when making decisions (Jones, 2002: 9). This is not always the case as often travellers have access to inadequate, limited or no travel information when they are making choices (Jones, 2002: 9). Therefore, it is felt that the use of qualitative methods alongside modelling applications will reinforce knowledge in this and other key transportation policy and planning areas (Jones, 2002: 9), as explored in sub-section 2.3.3. The following sub-section however, provides some background information on the interdisciplinary development of the field of travel behaviour.

2.3.2 Interdisciplinary quantitative travel behaviour studies and data sets

The National Travel Survey (NTS) collects information on personal travel in Great Britain, linking different types of travel with the demographic characteristics of individuals and their families. The NTS is conducted annually and is based on a representative sample of around eight thousand households[9] which are made up of around nineteen thousand individuals. Data for the NTS is collected through two sources, the first are structured interviews mainly consisting of closed ended questions with participants in their own homes. The second is a travel diary in which each participant records seven days of travel behaviour, including the mode of travel, purpose and length of the journey, and time of travel; as well as demographic information such as age, gender and driving license holding. The NTS, which began in 1988, is designed to identify long-term rather than short-term travel trends. The NTS is the only national survey of its kind to focus specifically on personal travel in Great Britain. However, social statistics are collected by all government departments and a range of other organisations; thus there are other large

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[9] This was increased in 2002 from around three thousand households sampled in previous years.

scale datasets that include specific questions about transport and travel behaviour, for example, the Census which asks respondents questions such as, 'is there a car in the household?' This data is often displayed in publications which highlight trends and changes within society, for instance Social Trends (most recent addition: Hughes, Church and Zealey, 2009), which is produced annually by the Office for National Statistics. The NTS and these other quantitative data sets do not collect qualitative data on later life experiences. Rather demographic information is collected which means that it is possible to determine patterns in travel behaviour that can be differentiated by age. Quantitative methods and data sets have traditionally been used to measure trends and monitor changes in travel behaviour. This research demonstrates that despite the usefulness of these statistics, it proves difficult to determine the whole picture without asking older people about their individual experiences.

The traditional approach of transportation research focuses upon a supply and demand model that maps current patterns of travel behaviour, and these are then used to predict and plan the future use of transportation systems and services (Metz, 2000: 150). This is a rather static measure of who goes from place to place and by which mode of transport (Metz, 2000: 150). The emphasis of research work in the travel behaviour arena is still on the formulation and calibration of quantitative models, thus using quantitative methods (Burnett, 2007: 183). This then makes the analysis of travel behaviour about categorising people into specific ways of travelling. According to Lavery et al (1996: 181), despite the complexity of the topic of travel, "it can be subdivided into three broad components: the person; the vehicle; and the built environment" (Lavery et al, 1996: 181). This complexity of travel behaviour makes it difficult to predict, especially as it can be affected as a result of wider societal changes, such as petrol shortages; technological innovations; and government policy (for example, concessionary fares on public transport). This has meant that much attention has been given to the 'bad' aspects of transport within society, which includes the financial cost (Metz, 2000: 150). Meaning that the 'good' aspects of transport have been given very little consideration within traditional transportation research; of particular relevance in later life are the psychological benefits and links to community involvement (Metz, 2000: 150). Qualitative research is therefore "vital to understanding the complexity of transportation behaviour, which rests upon the subjective beliefs and behaviours of the individual person" (Poulenez-Donovan and Ulberg, 1994: 1). Travel is a topic that cuts across disciplines and therefore, "only an interdisciplinary approach can reduce barriers and increase mobility" (Lavery et al, 1996: 181). It is important to explore the emergence of interdisciplinary qualitative studies that look at travel behaviour, as the next sub-section does.

2.3.3 Interdisciplinary qualitative travel behaviour studies and insights

Qualitative methods have been utilised to understand the motivations, attitudes and decision making processes that underpin travel behaviour. Over the past fifty years travel behaviour research has progressed, revealing "critical insights into the choices that individuals and households make about their daily travel" (Clifton and Handy, 2003: 283). As has been discussed above, these "insights have contributed to the development of increasingly sophisticated models to forecast travel behaviour and predict changes in behaviour in response to changes in the transportation system" (Clifton and Handy, 2003: 283). However, as the complexity of travel behaviour is clarified, new issues begin to surface, and scholars realise that the more that is understood about travel behaviour, the more it becomes apparent, the amount that is left to comprehend (Clifton and Handy, 2003: 283). The use of qualitative methods and the triangulation of quantitative and qualitative methods can help to uncover more about travel behaviour (Clifton and Handy, 2003: 283). There is growing evidence of travel behaviour researchers using qualitative methods (Burnett, 2007: 183). Amongst those who advocate the use of qualitative methods in travel behaviour research are: Burnett (2007); Clifton and Handy (2003); Goulias (2001); Jones et al (1983); Kenyon et al (2003); Lazendorf (2003); Lyons and Urry (2006); and Weston (2004). In this sub-section, a number of studies that use qualitative methods are reviewed in order to highlight the types of travel behaviour research using qualitative methods. The discussion focuses on three qualitative methods: individual interviews, focus groups, and the ethnographic method of participant observation. One of the first examples of using qualitative techniques in travel behaviour research is the study 'Understanding Travel Behaviour' (Jones et al, 1983), which contributed towards the development of activity-based analysis. In this study, individual interviews allowed the researchers to test the applicability of a theoretical framework for understanding travel behaviour (Jones et al, 1983). In order to understand the meanings that people give to travel behaviour, the study conducted a number of qualitative interviews before administering a quantitative survey to a larger sample (Jones et al, 1983). This study created a new method for collecting travel and activity data in which the "interdependent structured quantitative" method collected information on what people do and the "unstructured qualitative" method on why people behave as they do (Jones et al, 1983: 8). It has been argued that the qualitative elements of this work seem to have largely been forgotten within the field of travel behaviour research recently (Clifton and Handy, 2003: 290); although as shown below, there are other examples of qualitative research that explores travel behaviour.

Through the use of a travel survey questionnaire and semi-structured interviews, Poulenez-Donovan and Ulberg (1994), uncovered the decision making processes that people undertake in order to decide whether to use an employer based travel scheme. Amongst the issues explored during the individual interviews were personal travel patterns, existence of other transport and travel choices, and attitudes about the employer based travel scheme (Poulenez-Donovan and Ulberg, 1994). The study demonstrates that qualitative insights can be different to quantitative findings, as a number of personal, social and economic reasons that influence travel choice were evident from the interviews which were not visible from the survey data (Poulenez-Donovan and Ulberg, 1994). In another study that identified the mobility constraints of low-income households, Clifton (2001), combined semi-structured interviews with travel diaries. This provided rich data on the participant's daily lives including: resource demands, financial obligations and travel or activity preferences (Clifton, 2001). The findings showed significant differences between the travel behaviour of the low-income household's vis-à-vis those with more financial resources (Clifton, 2001). According the Clifton (2001) the use of both of these methodologies together, highlighted the potential breadth and depth that transportation research can cover. In Handy and Clifton's (2001) study, focus groups were utilised after a quantitative survey to explore travel behaviour and the implications of travel choices for the household. The focus groups demonstrated how people think about their travel choices (Handy and Clifton, 2001). This study also highlights the differences between qualitative and quantitative insights, as the findings of the focus groups corresponded with the survey data, but also identified factors that explained travel choices that were not evident from the survey (Handy and Clifton, 2001).

To explore the challenges facing older drivers, Rosenbloom (2001) used focus groups. The focus groups highlighted the fact that it was important for older people to continue to drive as it impacted upon their quality of life, and the strategies that some drivers utilise in order to be able to continue driving for as long as possible (Rosenbloom, 2001). Niemeier (cited in, Clifton and Handy, 2003: 292) used participant observation methods to study the travel patterns of mothers receiving welfare benefits. The use of participation observation uncovered the need for these women to be flexible in their day to day lives, which they stated was important when their travel behaviour could change from one hour to the next, particularly in line with the unpredictability of childcare arrangements. The author argued that, "we can't possibly capture the subtleties and complexities [of their lives] if we don't even know enough to ask about them" (Niemeier, cited in, Clifton and Handy, 2003: 293). This use of qualitative methods has also spread to policy related research. For example, in 2008 the Department for Transport commissioned a study that utilised individual interviews to explore the travel behaviour, experiences and aspirations of disabled people (DfT, 2008). So far this chapter has explored the development of the types of research,

and the methods utilised within existing travel behaviour research. It is apparent that much of the existing travel behaviour literature and empirical data cited within this section does not focus specifically on the period of later life. Thus, the following section discusses what the existing research around travel behaviour in later life reveals.

2.4 Key insights from existing research that examines travel behaviour in later life

This section provides an overview of the existing travel behaviour research that focuses specifically on later life. Older people, like the population in general, use a variety of private and public modes of transportation. However, as this section will discuss, the onset of physical impairments and driving cessation during later life are correlated with visible shifts and patterns in the modes of transportation chosen and utilised by older people. As older people age, the general trend is towards reliance upon modes of public transportation (Help the Aged, 2007a). With increasing age there is also a decline in the average number and the length of physical journeys that older people undertake (Soule, 2005: 85). Therefore, the journeys that are made by older people, as they age, can increasingly become for essential purposes. For example, shopping for groceries may, for some, begin to take precedence over a trip to the cinema. It is then vital that the modes of transportation used by older people adequately meet their varying needs, expectations and requirements. This section is split into six sub-sections, each presenting the key insights into travel behaviour in later life, that were discovered during this review. The first sub-section, 2.4.1, explains the types of journeys that older people undertake and the reasons for them. Sub-section 2.4.2 explores the individuality and complexity of travel in later life. The third sub-section 2.4.3 determines the modes of transportation utilised by older people. The fourth sub-section, 2.4.4, looks at the barriers to travelling in later life. Sub-section 2.4.5 focuses on the transportation needs, expectations and requirements of older people, highlighting the requirement for safe, accessible, reliable and affordable (SARA) transportation in later life, as outlined by the Help the Aged (1998) campaign. The sixth sub-section 2.4.6 focuses on the desire to travel in later life, alongside the role of accessible travel information and emerging technological developments in enhancing travel in later life.

2.4.1 The types of journeys that older people undertake and the reasons for them

On average, older people undertake shorter journeys than their younger counterparts (Su and Bell, 2009: 48). Data from the National Travel Survey (NTS) in 2006 suggests that, from the age of fifty years old, there is a decline in the average number of journeys[10] undertaken by both men and women as they age. The main reason why the numbers of

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[10] Within the literature on travel behaviour the phrases 'journey' and 'trip' are used interchangeably, however, for continuity within this thesis only the term 'journey' is used.

journeys made by both males and females starts to decrease naturally around retirement age, is due to the fact that older people are no longer required to make commuter journeys to a place of work (Soule, 2005: 86). The 2006 data reveals that, on average commuting men travelled 10 miles per trip, whilst women travelled 6 miles (Broadley et al, 2001: 29). Those aged 21 to 49 years old travelled the furthest around 9 miles, whereas younger and older people did not travel as far (Broadley et al, 2001: 29). As is shown in Figure 3, in 2006 the average number of journeys, per person, per year, undertaken by women between the age of fifty and fifty nine was 1133, and the figure for men of the same age was 1123 (DfT, 2008). Between the age of sixty and sixty nine years old there is a visible decrease in the average number of journeys, per person, per year (DfT, 2008). This is applicable to both sexes and makes the total number for women 975 and for men 1090 (DfT, 2008). This data therefore shows that from the age of sixty years old, men start to undertake more journeys than women for the first time during the life course (DfT, 2008). One explanation for this trend could be that generally the women in these cohorts would have retired at the age of sixty, whilst the men would keep working and undertaking commuter journeys until the age of sixty five (DfT, 2008). Although for this to be a plausible reason, it would be expected that the figures even up as retirement ages for both sexes met, and that they would match from then onwards into retirement. However, the data shows that they do not, as in 2006, the average number of journeys, per person, per year, undertaken at the age of seventy plus is 643 for women and 889 for men (DfT, 2008). There are other reasons why men undertake significantly more journeys per person, per year, than women; including that once they retire, men undertake more journeys for leisure purposes. Car drivers, on average, undertake more journeys, per person, per year, than non car drivers, as is discussed in more detail later in this chapter. Thus, as it is also more likely for men to be car drivers, or have retained their driving licence during later life, than women, in these cohorts (Stanley, 1995: 110), this may explain these differences.

Figure 3: The average number of journeys* undertaken per person per year, by age and gender, within Great Britain in 2006.
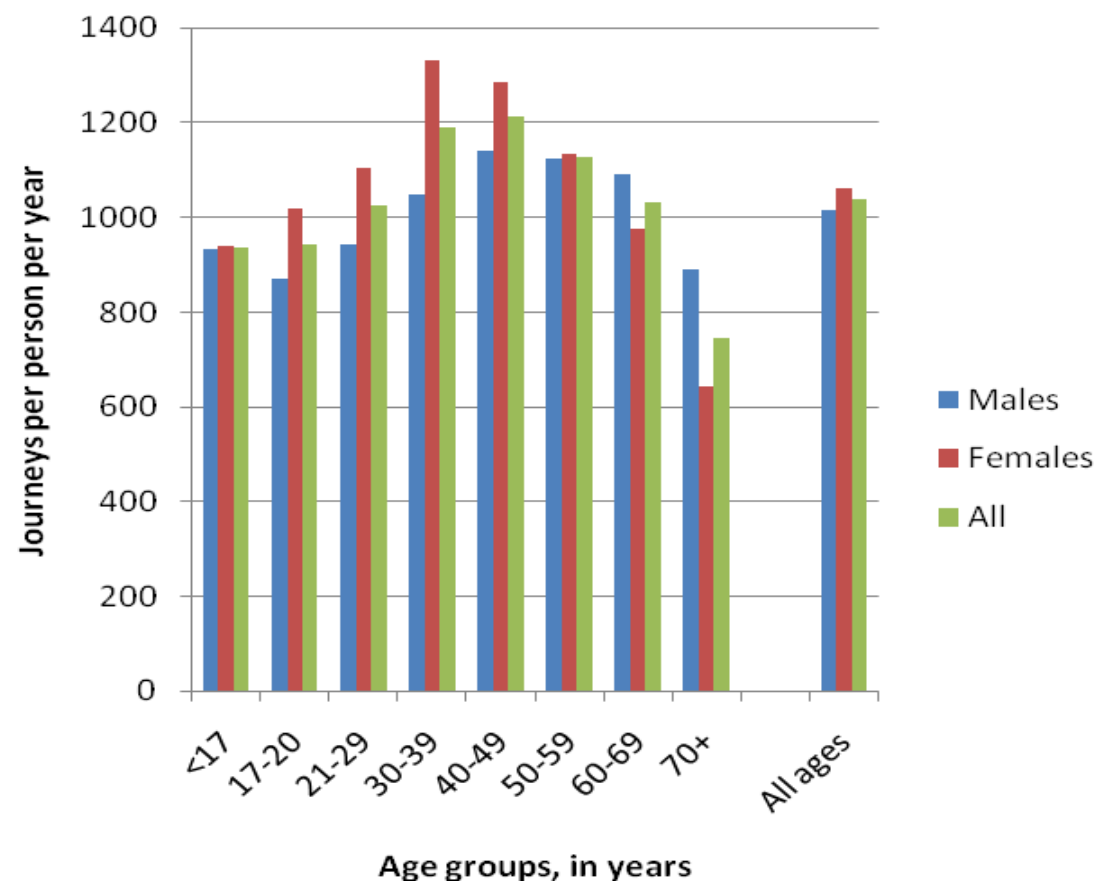
* A journey is defined as a one-way course of travel having a single main purpose.

Source: Department for Transport (DfT, 2008)

A report on personal travel that presents the results of the 1998/2000 NTS (see, DTLR, 2001) highlights a number of relevant statistics connected to patterns of personal travel in later life. As older people age, there is a decrease in the amount of trips made by driving a car, and an increase in the amount of trips walked and by bus (DTLR, 2001: 18/19). The distance older people travel also decreases with age, and this is visible in almost all modes of transportation, including cars (DTLR, 2001: 20). The exceptions are the distance older people travel by bus, taxis and other public transportation modes, which increases as people age (DTLR, 2001: 20). A number of studies have looked at the reasons why older people undertake journeys (for example, DTLR, 2001; and Soule, 2005). Most of the research that explores the reasons why older people undertake journeys, acknowledges health status and cognitive ability as having an effect upon the travel patterns of older people (for example see, Soule, 2005: 86). Although, it fails to explore the differences between age groups, instead focusing on 'all' older people aged 65 years old and over (for example see, Soule, 2005: 86). The main reasons that older people undertake travel have similarly been identified in a number of studies as: shopping; visiting friends at private homes; personal business; and leisure activities (DTLR, 2001: 27; Soule, 2005: 86). These reasons are not dissimilar to the working age group within the population, as those aged from 17 to 59 years old also suggested the same reasons as to why they undertook journeys, the only difference being that they cited commuting to work as a significant reason for undertaking a trip (DTLR, 2001: 27). Whatever the purpose of a trip though, the average trip length was shown to decrease with age (DTLR, 2001: 29). This available quantitative data provides general trends and average numbers of journeys (such as, the NTS data discussed above), although it does not give qualitative insights from the older persons perspective.

The nature of descriptive quantitative analysis (such as that used by Soule, 2005) means that it does not provide a detailed account of the individual reasons that older people undertake travel. As is discussed in the paragraph below, there are individual differences in the reasons why older people undertake journeys, as well as variations linked to particular cohorts, such as to attend school or a place of paid employment. For instance, as a percentage, the older old are more likely than the younger old to travel for health purposes, such as appointments at the Doctor's Surgery or Hospital. It is also worth noting here that many older people are also involved within the voluntary sector and so will also undertake travel for such purposes as getting to and from a particular voluntary organisation (Help the Aged, 2008a). In order to assist transport planners, policy makers, and providers to better meet the individual needs of older people, there is a need for a qualitative understanding of the reasons why older people undertake journeys, and the types of journeys that older people make, and where possible these should outline distinctions between age groups. The Department for Transport report (DfT, 2001)

focused on the transport needs and requirements of older people, however despite the use of triangulated methods, it reveals very little about the types of journeys older people undertake and the reasons why. According to the focus group findings presented within the report, it was clear that "travel is very important and the ability to travel serves a number of functions" which were linked to entertainment, participation, independence and social interaction (DfT, 2001: 34). In order to take these insights further, this study explores the travel behaviour of older people through the perspectives and 'voices' of older people themselves. Therefore, as a small scale qualitative study, this research makes a contribution to finding out the different reasons that older people themselves give for undertaking journeys, and determining the types of journeys which are made throughout later life. There are however, individual differences in the reasons that older people undertake journeys, as the following sub-section explains this can complicate travel patterns in later life.

2.4.2. Individuality and the complexity of travel in later life

Existing research within the field of transportation studies does explore the complexity of journeys. Such research measures the "logistical efficiency" of travel demand through its focus on trip chaining (Su and Bell, 2009: 46). Trip chaining research explores the different tasks that people undertake during each journey. For example, one might go out to visit a friend but during that journey one may also go to the bank to pay a bill, and go to the supermarket to purchase some groceries. This therefore complicates the journey, as it contains several stops rather than just a beginning and an end destination. A study undertaken by Su and Bell (2009) focuses on trip chaining, and looks at the travel behaviour of older people in comparison to the rest of the population. This mixed method study utilises survey data from the London Area Travel Survey (LATS) in 2001, which draws from a sample of nine thousand one hundred and nine older people aged 65 years old and over spread across London, as well as focus group data. The research provides some insight into travel behaviour in later life, however, the article focuses on the quantitative findings with little explanation or reference to the qualitative focus groups undertaken. The authors found that, in general, the sample of older people made more stops per journey on average, thus making more complex trips than the younger samples of participants (Su and Bell, 2009: 48). Interestingly the results also showed that the use of a car led to more complex journeys being undertaken by the sample of older people (Su and Bell, 2009: 48). As defined at the beginning of this chapter, older people can also be considered as younger old (65-74 years old) and older old (75 years old and over) (Grundy, 1991: 133). The older old are more likely than the younger old to experience age related impairments (Evandrou, 2005: 40-41). If the younger old are therefore more likely

to have access to a car and less likely to experience age related impairments than the older old, this could explain why the sample of younger old made more complex journeys than the sample of older-old (Su and Bell, 2009: 48-50).

Transportation planners and policy makers have traditionally viewed travel as a means of access to desired activities, rather than for its own sake (Mokhtarian et al, 2001: 355). This derived demand for travel "pervades modern transportation planning approaches" and is often "accepted with little question" (Mokhtarian and Salomon, 2001: 696). However, a number of scholars have commented on the desire to travel for its own sake (for examples see, Mokhtarian et al, 2001: 356-359; and Metz, 2000: 150). Distinctions between directed travel, where the destination is of primary importance, and undirected travel, where the travel itself is primarily significant, have been made (for example see, Mokhtarian and Salomon, 2001: 697). The authors illustrate this distinction with the examples: 'going for a walk' after dinner as undirected travel; and walking to the grocery store to purchase food as directed travel (Mokhtarian and Salomon, 2001: 697). Mokhtarian et al (2001) collected data from one thousand and nine hundred respondents on a range of travel and demographic variables including: travel liking, attitudes, personality, lifestyle, and mobility constraints. The findings revealed that, "far from being completely determined by demographically based needs, the amount of travel demanded is heavily influenced by one's attitudes toward travel" (Mokhtarian et al, 2001: 377). Thus, the terms directed and undirected prove useful when discussing travel behaviour. Although it should also be noted that, whether directed or undirected, travel behaviour will vary from one person to another depending on their individual circumstances, wants and needs. The empirical data collected during this study will provide some additional qualitative understanding around the topic of travel behaviour in later life. In order to better equip society to deal with the rising number of older people linked to the demographic changes of population ageing; an understanding of travel behaviour in later life, and the identification of qualitative data on the complexity of journeys, is relevant to policy makers, transport planners, academics, the media and the population in general. The following sub-section defines the modes of transportation utilised by older people.

2.4.3 The modes of transportation utilised by older people

"Older people have told us clearly that they value flexible, individualised transport services which can allow them to retain their independence within their local community".

Social Exclusion Unit, 2006: 93.

Similar to the general population, older people utilise various public and private modes of transportation, depending on their individual circumstances. These are discussed in this sub-section, which is split into four parts. The first sub-section 2.4.3.a, explores the private car and its connections to independence in later life. The second sub-section, 2.4.3.b, looks at driving cessation in later life. The third sub-section, 2.4.3.c, focuses on public transportation and demand responsive transportation. The last sub-section, 2.4.3.d, looks at walking and cycling in later life.

2.4.3.a The private car and independence in later life

Within the contemporary Western world the private car has become the most utilised and relied upon form of transportation for people of all ages (Social Exclusion Unit, 2006: 88). The role of the private car in the lives of older people is an area that has been well researched (for example, see: Davey, 2007; Eisenhandler, 1990; and O'Neill et al, 2000). Car ownership in later life is complicated by the onset of impairments that often lead to driving cessation (Social Exclusion Unit, 2006: 88). This sub-section therefore highlights the importance of the car in older people's notions of independence; parallel to this, the following sub-section outlines links between driving cessation, the lack of access to a car, and a sense of dependence in later life. According to the DTLR (2001: 38) report, "access to a car is the single most important factor affecting travel patterns, all members of car owning households travel more than people in non-car owning households". For example, individuals with access to a car have the opportunity to shop further a field and to carry heavier loads (DTLR, 2001: 43). Therefore, "lack of a car can be a factor in lack of social integration" (DTLR, 2001: 37). The lowest level of car ownership was amongst single pensioner households and single parent families, although the proportion of these types of households with a car had slowly increased over the decade prior to the survey (DTLR, 2001: 39-41). The Disabled Persons Transport Advisory Committee report (DPTAC, 2002: 5) explored the attitudes of disabled people to public transport in England and Wales, through qualitative focus groups and a quantitative survey completed by nine hundred and eighty nine respondents found that: "In common with the general public, for single most frequently used mode of transport for all disabled people is the car as a passenger". Despite the fact that, most of the participants did not have access to a car within their

households, they felt that the car played "a central role in independent mobility" (DPTAC, 2002: 35). Many of the participants felt that the private car is the only form of transportation that is "convenient and accessible", as they "can often be adapted to the individual needs of users, including wheelchair users and drivers or passengers with other mobility needs" (DPTAC, 2002: 28).

There is a direct correlation between the variables of gender and age group, with later life travel behaviour and patterns of car ownership and driving in later life. According to a report by the Social Exclusion Unit (2006: 88), the proportions of men and women with access to a car are similar at age 50-54; however, they vary considerably after the age of 75. This decline in car ownership that increases with age, and is more prevalent among older women (Social Exclusion Unit, 2006: 87), is also correlated with the decrease in income many older people experience once receiving their pension, and driving cessation on account of health (Metz, 2003: 380). However, this may be a cohort effect as the number of people, particularly women, that are obtaining driving licences is starting to increase (Soule, 2005: 86). Current patterns of driving licence holding suggest that: younger women are more likely than older women to hold a driving licence, and older men are more likely than older women to hold a driving licence (Broadley et al, 2001: 8). Ultimately, this will lead to an increase in the amount of older people that hold driving licences in the future, especially the number of women (Broadley et al, 2001: 8). Older people without use of a car or a van are more excluded than older people as a whole; this "demonstrates the strong relationship between transport and quality of life" (The Social Exclusion Unit, 2006: 88). Thus, reliance on public transportation, and in particular the bus service, increases as people age (Help the Aged, 2007a), especially individuals over state pension age (Social Exclusion Unit, 2006: 87).

In a study that explored the impact of health on driving cessation and mobility amongst a sample of two hundred and eighty patients aged 65 years old and over, O'Neill et al (2000: 50) found that the frequency of car use amongst the sample was variable; some participants drove daily, whilst others drove less frequently. The participants cited shopping, access to healthcare, religious services, and the collection of their pensions as the "most significant daily activities associated with driving" (O'Neill, 2000: 50). The study therefore confirms that older people frequently utilise the car to access services (O'Neill, 2000: 51). The results also highlight the interdependency of older women upon partners, family or friends who drove (O'Neill, 2000: 50). In another study, Eisenhandler (1990: 1) discusses how the "possession of the driver's licence, and consequently the prerogative of driving, equips elderly people with an asphalt identikit that allows them to maintain a non-age related hence nonstigmatized identity." This study draws from interview data from fifty

older people, in order to explore the role of the practical activity of driving in the way that older people identify themselves (Eisenhandler, 1990: 1). The study argues that within Western contemporary society a driving licence is an indication of "competency, adulthood and mainstream cultural membership", which brings with it a range of benefits including, "independence, convenience, comfort and access to a myriad of social roles" (Eisenhandler, 1990: 2). Several participants held the view that: "I am not old, I can drive", which connects the driving licence, and the act of driving, in later life, with a sense of control and independence (Eisenhandler, 1990: 6). The reliance on the car as a primary mode of transportation for older people was also evident from the findings of this study (Eisenhandler, 1990: 5). Although the participants did recognise the impact of the ageing process upon their ability to drive, it was clear that they preferred to amend their behaviour rather than give up driving altogether: "The participants did acknowledge that physical deficits impeded their skill behind the wheel, and they imposed their own limits on driving"; for example limited driving to "daytime, good weather and short trips" (Eisenhandler, 1990: 7).

2.4.3.b Driving cessation in later life

Driving cessation is the process of giving up driving. Driving cessation in later life can be a voluntary, or involuntary, decision that an older person takes due to a number of possible reasons, including: declining eyesight, and not being able to afford the financial cost of maintaining a vehicle. In later life, driving cessation is often perceived to be a traumatic event in the life cycle (Gilhooly et al, 2002: 15). This can mean that discussing driving cessation with older people themselves can be a complex, difficult task. As Freund (2003: 68) has noted:

> "Anyone who has attempted to discuss driving cessation with an older person knows how painful, awkward, difficult, embarrassing, upsetting, sad, frustrating, tearful, and sometimes ugly the experience can be, for everyone involved. This is because a discussion about driving is almost always a direct threat to fundamental mobility and therefore to being alive."

The relationship between the car owner and the car is intertwined, and "conforms to the defining features of a territory, being an important and enduring object that many drivers decorate with personal items and that they protect against invasion by other roads users" (Freund, 2003: 68). The car itself is therefore as important as the access that it provides to mobility (Freund, 2003: 68). It is only when this duality is recognised that "mobility as embodied in the personal automobile" can be separated from the "emotions it evokes" (Freund, 2003: 69). If both of these parts are "recognized, validated, and addressed" then

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older people may be empowered rather than depressed about driving cessation (Freund, 2003: 69). Similarly, it has been noted that the process of driving cessation in later life is not always a negative experience (Gilhooly et al, 2002: 15). In a project that aimed to examine the public and private transport needs of older people, in relation to quality of life in old age, Gilhooly et al (2002) stated that: "Our study revealed that ex-drivers reported more positive views about having given up driving than drivers anticipated having (although not in relation to saving money)" (Gilhooly et al, 2002: 15). These studies therefore reveal the relationship that older people who are giving up driving have with their cars, both in terms of the practicality of driving and having access to a car, alongside the emotional attachment, comfort and security that the car offers. The reasons for driving cessation in later life are individual to each person; this makes the experience difficult to discuss in broad terms. However, gendered differences have been noted, for example, in the ways that older males felt about driving in comparison to older females. Male drivers associated driving with quality of life, a significant difference to how female drivers felt about driving (Gilhooly et al, 2002: 13).

In a study that used psychometric testing on two hundred and eighty patients aged 65 years and over to explore the impact of health on driver cessation and mobility, O'Neill (2000: 47) identified that the main reasons for giving up driving in later life were connected to health and finance. Poor health, in terms of age-related health issues, such as hypertension, declining eyesight and mobility limitations, and the use of prescribed medication to treat them, were found to have the most significant and severe impact upon the ability to continue driving in later life (O'Neill 2000: 51). They also found that individuals that had never driven made more use of public transportation than ex-drivers, who stated that the reasons for low levels of use of public transportation were based around "fears about security, difficulties with carrying shopping and access to public transport vehicles" (O'Neill, 2000: 51-52). Studies have debated the role of transportation on quality of life in later life. A multi method study which focused on transportation and ageing conducted by Gilhooly et al (2002: 7) found that driving and travel by private car "may be a source of improved quality of life in old age", however, this does not "fit with government policy to get people off the roads and on to public transport". The participants without a car "expressed mixed views about whether or not having a car might have affected their quality of life, however, almost all those with a car in the household thought that having a car had improved their quality of life" (Gilhooly et al, 2002: 15). The main reasons that the participants felt having a car had improved their quality of life were "convenience, extra pleasurable activities (days out, contact with extended family and friends), a sense of freedom, and work opportunities" (Gilhooly et al, 2002: 15).

The impact of a lack of transportation on quality of life, in later life, was explored by Davey (2007: 49) in semi-structured interviews with seventy one older couples and single people. The participants discussed their experiences of "coping without a car", and were asked about how this "affected their lifestyle and quality of life, and how they met their transport needs" (Davey, 2007: 49). When discussing the process of giving up driving, males were more likely than females to express negative emotions (Davey, 2007: 54). Males were more likely than females to place a higher value "on owning and driving a private vehicle, and more frequently associated vehicle ownership and use with individuality, independence and the status of being competent" (Davey, 2007: 55). However, despite this gendered difference, several of the participants "became quite emotional when they talked about how their life had been changed" (Davey, 2007: 54). The participants cited a range of ways for coping well without a car, including: being able to walk; being able to use public transportation; a person's outlook on life and the extent that they are dependent on others (Davey, 2007: 55). It was also noted that personal attitude influenced the "extent to which people are willing to consider alternative and new forms of transport, such as mobility scooters" (Davey, 2007: 55). The participants felt that there were a range of activities that generated a need for transportation, including: food shopping; other types of shopping; medical appointments; and seeing family and friends" (Davey, 2007: 57). A number of serious transportation needs were also highlighted, for example, medical emergencies and visiting sick friends (Davey, 2007: 58).

As this thesis advocates, this study suggested that there are other ways of meeting these transportation needs, without physically going out to acquire transportation (Davey, 2007: 59). One example being the delivery of groceries or prepared meals to an older person's home from a supermarket or by friends and family. However, as a solution this meant that although their needs were met, they "missed the social contacts and stimulation when people leave their homes" (Davey, 2007: 59). Another strategy that the older participants utilised was "to avoid 'being beholden to people', many adopted ways to make some recompense, such as offering petrol money and making gifts to people who provided transport" (Davey, 2007: 61). Accepting a lift from a member of their family or a friend did though challenge their sense of independence, in response some of the participants "kept their cars; others simply curtailed their activities, potentially creating social isolation" (Davey, 2007: 61). The study found that "losing mobility through lack of private transport can mean not only disruption to older people's everyday lives, but may also threaten their quality of life and independence" (Davey, 2007: 60). It also highlighted a "new finding, only hinted at in previous literature, is the differential influence of 'serious' and 'discretionary' travel on the well-being of older people without private transport" (Davey, 2007: 59). For example, serious travel is being able to attend a doctor's appointment or pick up groceries, and discretionary travel is meaning to visit friends and family or to attend work

as a volunteer. This shows a gap between the public transportation services available to older people which are "orientated towards 'serious' travel needs, and the policies that "aim to improve the age group's quality of life, community involvement and independence" (Davey, 2007: 62). There are other policy contradictions as well; policy that focuses on remaining independent in later life discusses the role that private transportation plays in this, whilst other policy areas determine the need for a reduction in car use (Davey, 2007: 63).

2.4.3.c Public transportation and demand responsive transportation in later life

This sub-section explores the modes of public transportation that older people use, as well as how these systems have been adapted to take into account the needs of older people. Similar to the population in general, the modes of public transportation used by older people include: buses, coaches, trains, taxis, and aeroplanes. However, as older people age, there is a trend which indicates that they tend to rely upon buses, coaches and taxis, rather than trains which are more expensive, and aeroplanes that are more often associated with longer distance journeys (Help the Aged, 2007a). Differences in modal use can also be linked to different disabilities, for example, it has been noted that "visually impaired people are more likely to be rail and Underground users and that wheelchair users are less likely to be bus users" (DPTAC, 2002: 34). The onset of physical and mental impairments in later life can mean it becomes difficult for some older people to be able to use public transportation systems and services, for example, individuals with mobility problems may be unable to walk to the nearest bus stop and so are unable to make use of the bus service. Mobility difficulties increase with age and are very high amongst those aged 85 years old and over (DTLR, 2001: 37). The government has begun to recognise this and is visible in the introduction of Demand Responsive Transportation or Community Transportation services, such as the Dial-a-ride or Cango services. Demand Responsive Transportation services are specialist bus services that cater for people with disabilities to provide a door to door service. Such services make it possible for older people with disabilities to be able to get out and about, although there are limitations of such services. For example, seats need to be pre-booked, sometimes days in advance; and the nature of this type of service can also lengthen the total journey time, as the first person to be picked up will often be the last person that is dropped off.

Under the Disability Discrimination Act 1995[11], the Public Service Vehicles Accessibility Regulations 2000 set out the requirement for all new public service vehicles to be low-floor buses from 31st December 2000[12]. Low-floor buses have no steps between one or more entrances and part or the entire passenger cabin; this improves the accessibility of the bus for older people, wheelchair users, and people with pushchairs and large luggage, as well as the general public. Writing before the regulations came into effect, Lavery et al (1996: 182) felt that the introduction of low-floor buses will remove one of the major barriers to bus travel for older people (Lavery et al, 1996: 182). However, this alone would not increase the mobility of older people significantly; rather the barriers posed by the built environment will "negate much of the advantage of this new design of bus" (Lavery et al, 1996: 182). This argument was taken further, in an article that discusses the "vital importance of street design in reducing built environment barriers to travel"; Lavery et al (1996: 182) state that built environment barriers can constrain the mobility of older people. Built environment barriers include: "walking to the bus stop which may include barriers such as: home too far from the bus stop; uneven pavement; gradients that are too steep; bus stop on the opposite side of a busy road; poor lighting; and no shelter and/or rest facilities at the bus stop" (Lavery et al, 1996: 183). The process of population ageing means that, from "both from the social 'quality of life' perspective and the economic perspective, public transport services and local and city centre streets will increasingly be required to be 'retired people friendly' to ensure that older people will be able to maximise mobility and their access to shops and other opportunities" (Lavery et al, 1996: 181). Therefore, it is essential that transportation planners are aware of the barriers that impact the travel behaviour of older people so that they can tailor street design appropriately (Lavery et al, 1996: 183).

After the regulations were introduced, these concerns were reiterated in the DPTAC (2002: 3) report which stated that: "The condition of pavement and roads caused the most concern to disabled people well ahead of dissatisfaction with public transport". The DPTAC (2002: 3) report went on to suggest that, "this reinforces DPTAC, and DTLR, advice that improvements to public transport vehicles alone are not enough". It recommended that "access improvements need to be made to all stages of the journey, including the walking environment and information provision, so people can reach and use services" (DPTAC, 2002: 3). It also found that: "Overall, disabled people's transport concerns differ little from the general public" (DPTAC, 2002: 3). Highlighting specific transport concerns as: difficulty in using public transport; frequency of public transport; unreliable buses and trains; traffic congestion; the

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[11] See: http://www.legislation.gov.uk/ukpga/1995/50/contents
[12] All new public service vehicles over 22 seats should be low floor from 31 December 2000, whilst smaller vehicles were required from 1 January 2005.

speed of motorists; shortage of car parking; traffic noise; the level of road accidents (DPTAC, 2002: 17). However, it was noted that: "For disabled people the impact of these concerns can be greater on their independent mobility and travel choices" (DPTAC, 2002: 3). The same could be argued for older people, many of whom may face the onset of physical or mental impairments as they reach later life. Some of the participants commented that if it was easier to obtain information about public transportation services they would use them more (DPTAC, 2002: 10). This is perhaps further justification for studies like the MAPPED project (Ibid.). Planning journeys in advance was not always necessary for the participants; however, many of them planned most of their journeys in advance, particularly those that were a longer distance (DPTAC, 2002: 45). Those that did plan their journeys in advance stated that they were: "Frustrated that they cannot go out at the spur of the moment" (DPTAC, 2002: 46). More than half of the participants felt that: "The people responsible for the planning and development of public transport and the pedestrian environment pay too little attention to their needs" (DPTAC, 2002: 12).

2.4.3.d Walking and cycling in later life

Walking and cycling provide alternative ways of getting from one place to another. Although, it has been argued that, walking has not been adequately recognised as a mode of transportation within transportation policy and practice (Tight et al, 2004: 1). Much of the literature around walking focuses on pedestrian problems, safety, and the factors that influence walking decisions and routes (Tight et al, 2004: 1). Age is taken into consideration, however from this perspective, it is in terms of the particular needs of older pedestrians, as their age might: "Have an impact on physical ability and cognitive skills as well as perceptions and feelings about the road environment" (Tight et al, 2004: 2). In a study that used quantitative and econometric surveys, Tight et al (2004: 5-12) discuss how the decision to walk is impacted by a wide range of factors, including: distance of journey, time available, personal safety, road traffic, the built environment, the effort required, the weather, the familiarity of the journey, and access to facilities, such as public toilets. These factors can have a singular, cumulative or combined impact on the decision to walk (Tight et al, 2004: 12). Tight et al (2004: 12) question whether these factors "assume different levels of influence when combined", and if there is causal relationship between these factors, in that what has happened before on a journey can impact future journey decisions. There are clear barriers that stop people from choosing to walk or cycle. The factors that were most important to pedestrians, in terms of influencing their decision to walk and the route taken, were identified as: pavement quality; litter and dog mess; and pavement obstructions (Tight et al, 2004: 17). These factors were the most

frequently mentioned, no matter what the age, gender, income or home location of the participant (Tight et al, 2004: 17). The negative aspects of walking and cycling in later life have been highlighted as: "the local terrain (for example, steep hills); the lack of provision of seating and shelters; difficulties in crossing busy roads, due to speeding traffic, heavy traffic volumes, lack of safe crossing points and barriers (for example, guard railing) preventing crossing at convenient points; and low levels of street lighting" (Jones and Wixey, 2005: 2). However, positive benefits of walking and cycling have also been identified: including the exercise benefits (Dora, 1999); the positive impact on psychological well-being (Hillman, 1999); and the sense of independence and freedom that it encourages (Forward, 1998). People think about walking in a different way to other forms of transport, "walking is considered less way of getting from origin to destination and more as a way of experiencing the local environment" (Tight et al, 2004: 18).

In a research report for the DfT, Dunbar et al (2004) review the literature that looks at the impact of the ageing process on pedestrian safety. Some of the findings prove useful here. Although the amount people travel generally declines with age, there is a need to ensure that declining mobility does not negatively impact quality of life in later life (Dunbar et al, 2004: 27). In Britain, people aged 70 years old and over, undertake more journeys on foot than as car drivers, with the exception of rural areas (Dunbar et al, 2004: 9). Therefore, pedestrian safety in line with the onset of impairments in later life is an area that warrants consideration. For example, the authors state that older people can experience a decline in vision which causes problems with navigation and glare as well as a lack of balance that leads to an increase in the likelihood of falls (Dunbar et al, 2000: 37-38; 48). Some of the barriers to pedestrian travel noted in the review included: distance; hills and inclines; fears about crime; isolation from other people; being hit by a car; falling; getting lost; and not being able to get across the road before the signal changes (Dunbar et al, 2000: 18). The following sub-section explores the barriers to travelling in later life in more detail.

2.4.4 Barriers to travelling in later life

The barriers that prevent older people from using transportation and getting out and about are widely evident (Help the Aged, 2007a: 2). Various studies have explored the barriers to travelling experienced within later life (including: DfT, 2001; Gilhooly et al, 2002; Help the Aged, 2007a; and Social Exclusion Unit, 2006). These studies tend to highlight similar barriers to travel in later life. The barriers that impact travel in later life can be grouped into four main categories: accessibility and availability; health and mobility constraints; fear of

crime and safety; and financial cost (Social Exclusion Unit, 2006: 88-89). The most comprehensive list of barriers to the use of public transport identified by older people is evident in the Gilhooly et al study (2002: 18). In this study, barriers were identified as 'things that put you off or stop you using public transport" (Gilhooly et al, 2002: 17). The participants suggest the following barriers to the use of public transport in later life: concerns about personal security during evenings or at night; difficulties carrying heavy loads; alternatives to public transport are available; possibility of cancellations; having to wait; public transport running late; behaviour of some passengers; difficulties of travelling where I want to go; having to be out in bad weather; difficulty of travelling when I want to go; having to change transport; difficulties in getting information about journey; concerns about being on time; difficulties accompanying other who cannot travel alone; lack of cleanliness; length of journey time compared with car; lack of public transport in my area; inaudible announcements; lack of toilet facilities; high cost of public transport; discomfort of the ride; large amount of planning; amount of walking involved; lack of grab rails; difficulties in getting on and off; hassle of buying tickets; concerns about personal security in the daytime; and risk of being in a crash on public transport (Gilhooly et al, 2002: 18). The most frequently cited barrier by the participants of this study was concern about personal security in the evening or at night (Gilhooly et al, 2002: 7). Although the participants felt it would be easy to ask for a lift, they commented on how they would rarely ask their friends, children or spouse for a lift (Gilhooly et al, 2002: 20). This reluctance that older people have in asking for lifts from family and friends, combined with the likelihood of lower car access in later life, makes it vital to identify the barriers that older people experience to using public transportation (Gilhooly et al, 2002: 20). The study also demonstrated that barriers to the use of public transportation can exist on an individual, couple or group level, for example barriers for spouses would also be barriers for the participants themselves when they were accessing public transportation together (Gilhooly et al, 2002: 21).

Age related impairments can mean that older people experience difficulties getting to, and on, existing public transportation systems such as buses and trains. A number of initiatives, such as low floor bus services and demand responsive transport, have been implemented within the UK to counter these age related impairments (as previously discussed in this chapter). This has helped some older people, and people with disabilities, to be able to travel, and has made a big difference in their lives (DfT, 2001). The transport requirements and needs of older people are comparable to those of people with disabilities, people with small children and/or pushchairs and even those carrying large amounts of luggage. Thus, introducing good design is better for the whole population as it makes transport more accessible for all. In April 2008, the government introduced free national bus travel for people aged 60 years and over, and people with

disabilities within the UK. This initiative has been created by mixed reviews though. The 'good intentions' of the initiative have quickly been submerged by criticism. Local Authorities are not being given enough funding from the government to run the initiative which is, in some areas, leading to cuts in services (Goulder, 2007: 2). Others have criticised the discriminatory nature of the initiative, which fails to provide an alternative for individuals who are unable to use the bus service (Help the Aged, 2007b). Older people have reported concerns about crime and youth culture, which they state has prevented them from using public transportation, including feelings of intimidation on buses, and unlit bus stops and stations (Social Exclusion Unit, 2006: 89).

In 2001, the Department for Transport produced the report, 'Older people: Their transport needs and requirements', which investigated the transport requirements of older people, given the increasing relevance in line with the demographic changes of population ageing. The report (DfT, 2001) draws upon a literature review, six qualitative focus groups with older people aged 60 years and over from Camden, Surrey and Wales, a face-to-face quantitative household interview which was carried out with one thousand four hundred and forty five people aged 60 years and over throughout England and Wales in May 2000, and discussions with an Advisory Group made up of representatives from DETR, transport providers, charities and others with expertise in the area. Barriers to travelling in later life are explored within the report, in terms of the difficulties experienced by older people with age related impairments (DfT, 2001: 23-25). This account provides a summary of the difficulties experienced by older people, however, the types of barriers discussed are specific to certain individuals (for example, one of the barriers noted was that problems with vision can lead to difficulties reading timetables) and were therefore not applicable to older people as a whole (DfT, 2001: 24). Therefore, despite the rich data that this report provides (DfT, 2001); there are other accounts of the barriers to travelling in later life that provide a much broader picture. This includes the Strategic Promotion of Ageing Research Capacity (SPARC) project, which explored the benefits from science and technology for older people (see, Marsden et al, 2008; and Musselwhite and Haddad, 2008). One of the research projects under the SPARC programme brought together transport and public health research with older people to consider how services could be more responsive to older people's needs (Marsden et al, 2008). This research found that an older person's ability to get around is affected by three overriding factors; physical ability, individual characteristics, and the transport environment (Marsden et al, 2008: v). The use of participant observation in the form of guided walks, along with focus groups, helped to enrich the data within this study. It also revealed a number of barriers to travelling in later life which the older participants highlighted (Marsden et al, 2008: v). These include: the bus driver's behaviour and attitude; the bus design; the position of the bus stops; difficulties getting onto the buses; a lack of formal road crossings; uneven

surfaces or obstacles such as parked cars; personal safety concerns; other people sharing the same environment; fear of being knocked down or falling over; bad taxi experiences; and giving up driving (Marsden et al, 2008: v). The next sub-section examines the transportation needs, expectations and requirements of older people.

2.4.5 The transportation needs, expectations and requirements of older people

The previous sub-section has demonstrated that economic and health differences have produced "wide variation between older people's travel patterns" (Dunbar et al, 2004: 19). This sub-section narrows in to explore the specific transportation needs, expectations and requirements of older people. In 1998, Help the Aged outlined the need for transportation to be safe, accessible, reliable and affordable (SARA) in later life (see, Help the Aged, 1998). The ability to travel has a specific influence on the quality of life of older people (Banister and Bowling, 2004). In order to maintain a good quality of life, people need to have access to other people and places through "available, effective and affordable transportation facilities" (Metz, 2003: 375). There are multiple ways that transportation facilitates social exclusion, including spatially, physically and financially (DETR, 2000b). However, it is through easing the access to everyday essential places such as, work, educational establishments, healthcare practitioners, food shops, and, social, cultural and sporting activities, that transportation contributes to social inclusion (Social Exclusion Unit, 2003). Accessible transportation helps older people to live independently (Suen and Mitchell, 2007: 1) through maintaining choice and control in their daily lives. Having "adequate motorised or personal mobility" increases access to opportunities and civic participation (Kenyon, 2006: 1). Therefore, within the realms of transportation systems and services is the potential to build a more inclusive society (Lyons and Urry, 2006: 2). However, transportation systems and services can only be considered inclusionary if people know about them (Social Exclusion Unit, 2003). If we consider people need to know about transport, they not only need to know the services that exist, but timetable information, and also how to actually use the available services (Social Exclusion Unit, 2003).

2.4.6 The desire to travel in later life and the role of accessible travel information and mobile technology

Although older people travel less than their younger counterparts, the desire to travel is clearly visible amongst current cohorts of older people (Dunbar et al, 2004: 18). Corresponding with the population in general, older people are travelling more now than

they have in the past (Dunbar et al, 2004: 18). This, alongside the increasing numbers of older people who are "better educated and more politically involved than earlier generations", means that future cohorts will have higher expectations about remaining mobile (OECD, 2001: 7).The provision of travel information became "a key government priority in the UK following the publication of its Transport White Paper" [A New Deal for Transport: Better for Everyone, DETR, 1998] (Lyons, 2001: 217). Accessible travel information is of particular importance to individuals who regularly use or rely upon public transportation (Smith et al, 2006: 66). The field of tourist information explores the information searching behaviour and strategies of different groups of people (for example, Fodness and Murray, 1999), however this thesis is concerned with the everyday travel information required by older people, rather than the information required as a tourist. Research that focuses on ways to increase the accessibility of travel information has only fairly recently began to take into account the attitudes and opinions of various user groups (for example, Lyons and Everett, 2004; and Lyons and Farag, 2006). Emerging mobile technology has the "potential to deliver personalised information tailored to individual needs and abilities" (Fischer and Sullivan, 2002: 194). The field of tourism presents "considerable potential for the use of mobile technologies" (Brown and Chalmers, 2003: 335). And studies, such as Van Setten et al (2004: 515), have explored "context-aware mobile tourist applications" that adapt their "services to the user's needs based on both the user's interests and current context". Location information, such as "travel, shopping, entertainment and event information", is "becoming an integral part of different mobile devices" (Kaasinen, 2003: 70). The information the individual requires is, increasingly, becoming individualised both in terms of the content and the delivery. Advances within the field of transportation and technology can fulfil these individual needs. This study, for example, focuses on the capabilities of specially adapted handheld navigational devices, exploring a potential, which ultimately, has the ability to "support communities" through the "promotion of the independence" of all individuals; whatever their personal needs or level of ability (Fischer and Sullivan, 2002). The following section explores information and communication technology in later life.

2.5 Information and communication technology in later life

This section of the chapter looks at what the existing literature and empirical data reveals about information and communication technology in later life, and is split into four sub-sections. The first sub-section, 2.5.1, explores the notion of the digital divide, determining the differences between 'access to' and 'use of' information and communication technology. The view that the digital divide is becoming an age divide is examined within sub-section 2.5.1.a. The second sub-section, 2.5.2, looks at the barriers older people face when using information and communication technology. Sub-section 2.5.3 explores what existing data reveals about the types of information and communication technology that older people make use of and the reasons why. The fourth sub-section, 2.5.4, focuses on how using information and communication technology can empower older people and reinforce social inclusion.

2.5.1 The digital divide

Descriptions of the digital divide have for some time focused on the rather simplistic notion that particular groups within society are more inclined to lack access to information and communication technology than others (Servon, 2002: 1). However, as is discussed later within this section, there is a distinction between having 'access to' and 'use of' information and communication technology, thus, having one does not necessarily correlate with having the other. The digital divide is then a far more complex phenomenon than the equality of access between the "have's and have not's" or "information rich and 'information poor" (Phipps, 2000: 40-41). Those excluded by existing social divisions such as social class, gender and ethnicity are more likely to be excluded from accessing information and communication technology (Servon, 2002: 1). A more sophisticated, in-depth analysis of the digital divide, suggests that there are many dimensions to the "rise of digital technology" that have altered and complicated our understanding of the divide (O'Hara and Stevens, 2006: 285). When thinking about the digital divide the following must be considered: the diversity in the types of information and communication technology; internet access and use should not be conflated with access to information and communication technology in general; what 'access' means, as there are clearly differences in terms of quantitative and qualitative understanding; the lack of desire, need or ability to use information and communication technology makes the access problem insignificant (O'Hara and Stevens, 2006: 285-286).

2.5.1.a The digital divide: An age divide?

Pertinent to this study is the discussion around the digital divide developing into an age divide (see, Rafferty and Steyaert, 2007; Steyaert and Gould, 2009: 743-44). Despite evident increases in the numbers of older people accessing information and communication technology, older people are still the least likely group to use information and communication technology and particularly the internet (Servon, 2002: 36; Steyaert and Gould, 2009: 744). Linking back to the point in the above section about how understanding the divide is becoming more complicated, Steyaert and Gould (2009: 744) develop this thinking in their discussion over whether the divide is widening or narrowing. It is suggested that gender is no longer a strong indicator for measuring access to information and communication technology, although there remains a relationship between gender and the amount of time spent using information and communication technology, and the activities undertaken (Steyaert and Gould, 2009: 744). In Britain, the digital divide is "now primarily age-related" (Steyaert and Gould, 2009: 744-745). The reasons why people do not have a computer or internet access change according to age, and older age groups cite a lack of interest and skills as the most significant reasons for not having a computer at home (Steyaert and Gould, 2009: 744-745). Therefore, there is a distinction between "diversity and the real divide", and if older people are not interested in the latest technology does that mean we should still be able to "define this as a digital divide or an informed choice?" (Steyaert and Gould, 2009: 745). This study suggests that using or not using information and communication technology should be an informed choice of any member of the population whatever their age. The concept of rational ignorance is also significant. 'Rational ignorance' is when "many people do not feel 'the need to know', or wish to bother to do so" (Casey et al, 2009: 3). Even so "everyone should be given the chance to become informed, active and engaged in the digital world and targeted outreach is needed to encourage participation through motivation and opportunities to learn" (Casey et al, 2009: 3). Thus, it is essential to consider the age related implications of the digital divide as a façade of social exclusion, both now and in the future. As technology advances and younger cohort's age, it is a distinct possibility that older people will still be the least likely to access and use information and communication technology if designers do not take account of age related issues and difficulties, as discussed in the final section of this chapter. There are a number of existing barriers to using information and communication technology that older people may experience, and these are explored within the next sub-section.

2.5.2 Barriers to using information and communication technology in later life

Research that explores the use of information and communication technology in later life has tended to ignore the ways that older people gain access to information and communication technology. Two articles that focus on the barriers to using information and communication technology in later life are connected to a research project that focused on adult's use of information and communication technology (see, Selwyn et al, 2003; Selwyn, 2004). This research by Selwyn et al (2003; 2004) draws upon quantitative survey data from a large household survey on information and communication technology use in England and Wales, the sample of one thousand and one people, included a sub-sample of three hundred and fifty two older people aged 60 years old and over (presented in, Selwyn et al, 2003). And qualitative data from in-depth interviews with thirty five individuals aged 60 years old and over (findings in, Selwyn, 2004). A number of barriers to using information and communication technology in later life have been identified. The survey data, presented Selwyn et al (2003), reveals that the barriers to using information and communication technology in later life are connected to the practical reasons of cost, health, and lack of exposure in the workplace (Selwyn, 2004: 375). Others have noted the barriers to include: lack of experience or skills, lack of access, poor interface design or usability, technophobia or fear of computers and technology, financial cost, poor support networks, lack of interest and perceived benefits, and security or safety concerns such as identity theft and viruses (Harwood[13], 2007: 248-252).

2.5.3 Older people and their access and use of information and communication technology

Definitions of the digital divide now differentiate between having access to and use of information and communication technology, as having one does not necessarily correlate with the other (Norris, 2001: 3-4). Therefore, an individual may have access to information and communication technology within their own home but not the skills to be able to make use of it, or vice versa, an individual may have the skills to use the information and communication technology although have difficulty accessing it. There is, though, a lack of empirical data that explores this distinction. Older people are less likely to have a computer and internet access at home than any other age group (Harwood, 2007: 247-248). Perceptions of older people's computer competence tend to be very negative (Harwood, 2007: 246). However, Selwyn et al (2003: 561) found that those who did not use a computer stated that they chose not to because they did not see it as relevant in

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[13] Although the Harwood (2007) study does not include any empirical data collection, it is included here as the barriers identified are extensive.

their lives. The findings also suggest that amongst the sample of older people using a computer was a minority activity which was highly stratified by gender, age, marital status and educational background (Selwyn et al, 2003: 561). However, use of information and communication technology amongst older people aged 65 and over is steadily increasing (Harwood, 2007: 252). Academic research in this area is limited, meaning that little is known about the reasons and motivations for using information and communication technology in later life (Selwyn, 2004: 369). Data in this area is primarily statistical based quantitative accounts of the usage rates of computers and the internet by older people, such as that discussed in the introductory chapter (see, Haezewindt and Christian, 2004; and Shepherd and Bryson, 2007). There is little qualitative research and detailed explanations of how information and communication technology impacts upon the lives of older people. There is also a dearth of qualitative research which looks at the types of information and communication technology that older people use and the reasons why they use it. Therefore, this study will begin to unpick these areas by asking the participants questions around their use of information and communication technology and the reasons for it.

2.5.4 Empowering older people: Information and communication technology, social inclusion and the social work discipline

The social work discipline has started to recognise the potential of being able to exchange information and contact services via information and communication technology (Steyaert and Gould (2009: 740). However, many social work commentators are pessimistic about the potential of information and communication technology within social work practice, as they feel such advances have shifted the focus of the role from 'social' to a "database way of thinking and operating" (Parton, 2008: 253). This research, though, is not practice based and therefore aims to demonstrate, through an interdisciplinary perspective, some potential positive impacts of information and communication technology within the broader field of social work. It has been said that: "Connected citizens are getting better services, within both the private and public sector", and examples include, cheaper train tickets available online, and access to support such as counselling which is available much quicker online (Steyaert and Gould, 2009: 741-742). In this sense, if a person does not have access to information and communication technology, or the skills to use this type of technology, then they risk less "access to services as well as less choice and possibly greater costs", which may ultimately result in social exclusion (Steyaert and Gould, 2009: 742). Thus, the social exclusion agenda forms the pivotal connections between the social work discipline and the digital divide (Steyaert and Gould, 2009: 742). However, despite this, the "implications of the digital divide have received very little attention within the social work literature" (Steyaert and Gould, 2009: 742). With the exception of Parrott and

Madoc-Jones (2008) who explored the possibility of social workers using technology to address social exclusion. The article argues that the "social work profession should more actively challenge and resist the limited use made of information and communication technology, and promote the appropriate use of information and communication technology to improve social work practice and empower service users" (Parrott and Madoc-Jones, 2008: 181). This will become progressively important as information and communication technologies are being used more and more to connect families and social networks, and as information and services are increasingly accessible through mediums such as the internet.

2.6 Summary

This chapter has explored the existing knowledge around the thematic topics of transportation, technology and older people. It has specifically focusing on travel behaviour and information and communication technology in later life, in line with the research aims and objectives (as outlined in Chapter One). The parameters of the literature review, including the key words and publications that were searched were set out at the beginning of this chapter. The chapter also reviewed definitions of old age, in order to justify why this study pragmatically defines older people as aged 65 years old and over. Providing an overview of travel behaviour research in order to highlight how the field has developed from the traditional quantitative travel behaviour research within the field of transportation studies, to a wider interdisciplinary approach to travel behaviour research and the use of quantitative studies and data sets. The chapter has also presented some background information about travel behaviour in later life and information and communication technology in later life by reviewing the findings of existing research in these areas. The following two chapters continue the literature review. Chapter Three focuses on what is known about the intersecting concepts of social inclusion, independence and mobility, and introduces the conceptual framework for mobility in later life. Chapter Four determines the policy framework that underpins this thesis.

Chapter 3: Literature review - Conceptual intersections

This is the second literature review chapter, and it focuses on the literature around the conceptual intersections utilised within this research. The conceptual intersections are social inclusion, independence and mobility. Within this chapter it is suggested that there is a deficiency of empirical research that examines the embryonic dimensions of mobility, such as the virtual and imagined strands, that are developing in response to the combined advances in the fields of transportation and technology. There is also little empirical data concerned with the inclusive potential of transportation and technology, in terms of linking it to the concept of independence. Therefore, this study will address these topics with a particular focus on their pertinence in later life. The application of social inclusion, independence and mobility in later life as conceptual intersections between the thematic topics of transport, technology and older people, means that this study is original and relevant, particularly when linked to the changing structure of the ageing population. This chapter is divided into eight sections. The first three sections, in turn, explore the concepts of social inclusion, independence and mobility, each setting out the theoretical development of the concepts, as well as the meanings that older people give to the concepts. The first section, 3.1, examines social inclusion in later life. The second section, 3.2, focuses on independence in later life. The third section, 3.3, looks at mobility in later life. The fourth section, 3.4, then highlights the inter-relationships between the meanings that older people give to the concepts of social inclusion, independence and mobility in later life. The fifth section, 3.5, outlines the inter-relationships between the thematic topic and the conceptual intersections. The sixth section, 3.6, explores the development of the conceptual framework for mobility in later life, as a result of the gap in the theoretical understanding of the concept of mobility highlighted during this literature review. The seventh section, 3.7, evaluates the chosen trajectory to connecting the thematic topics of transportation, technology and older people utilised within this study. The final section, 3.8, summarises the key points of this chapter.

3.1 Social inclusion in later life

This section focuses on the concept of social inclusion and its pertinence within later life. As this section will demonstrate, in order to understand what is meant by social inclusion in later life, it is also necessary to determine what is meant by social exclusion in later life. The concepts of social exclusion and social inclusion each have a "distinct provenance and a specific institutional and political locus" (MacDonald, 2006: 1). That said, they are often viewed as the polar extremes, or reverse processes of one another (Preston and

Raje, 2007: 152), including within this research. Social exclusion is therefore, a process limiting participation in civil society, and a social inclusion is a process encouraging participation in civil society (Preston and Raje, 2007: 152). However, it is difficult to view one process in isolation from the other (Preston and Raje, 2007: 152). In many areas of study, social inclusion is "understood as a process away from exclusion, it is a process for dealing with social exclusion and integrating individuals into society" (Preston and Raje, 2007: 152). The discussion in this literature and policy review reflects the fact that the terms social exclusion and social inclusion are often used interchangeably. Where possible, distinctions that have been set out within the literature and policy are determined, although this research gives precedence to the positive inclusionary connotations of developments in transportation and technology for older people.

3.1.1 Measuring societal inequalities

In recent decades, the marginalisation of some social groups and geographical areas has intensified societal inequalities within the UK, and led to the concept of social exclusion becoming a key issue in social policy and academic debates (Scharf et al, 2000: 2). This has increased the visibility of the term social exclusion in a number of research fields, including transportation studies (Lyons, 2003: 339). The concept of social exclusion originates from contributions made by French social scientists, such as Lenoir (1974) and Lefebvre (1974), who "built on Marxist notions of socio-spatial exclusion as a necessary condition of capitalism and examined how new spaces of representation could promote new forms of empowerment" (Preston and Raje, 2007: 151). There is not the space to present a historical account of the development of social exclusion here, instead see, MacDonald (2006: 7-15) for such an account. However, since the contributions of these French social scientists there has been continual debate on what social exclusion is, which implies that there is no agreement on the meaning of the concept of social exclusion (Preston and Raje, 2007: 151). This complexity is evident in the definition outlined by the Social Exclusion Unit (2003: 146):

> *"The term 'social exclusion' refers to more than poverty or low income, but is closely related to them. It has previously been defined as 'a short-hand term for what can happen when people or areas suffer from a combination of linked problems such as unemployment, poor skills, low incomes, poor housing, high crime, bad health and family breakdown'. These problems tend to have a cumulative and reinforcing effect on each other, preventing people from fully participating in society".*

Academic debate over the definition of social exclusion draws distinctions between the distributional dimensions of poverty, otherwise perceived as a lack of material resources; and the relational focus of social exclusion, or a lack of social networks (Scharf et al, 2000: 2). It is difficult, however, to consider social exclusion without relating it to poverty (Townsend, 1979). Traditional measures of poverty, which are based upon the concept of relative wealth, do not capture the aspects of well-being that are relevant to policy, although they are visible within the multidimensional terms social exclusion and inclusion (MacDonald, 2006). As this study focuses specifically on the experiences of older people, the following section determines the experience of social exclusion and inclusion in the context of later life.

3.1.2 Understanding social exclusion and inclusion in the context of later life

A number of scholars have explored social exclusion and inclusion with particular reference to later life. When considering what social exclusion means in later life, Scharf et al (2000: 5) found that the following three areas should be explored: participation and integration, spatial segregation, and institutional disengagement. This qualitative study (Scharf et al, 2000) focused on some of the most disadvantaged urban neighbourhoods in England, drawing upon initial discussions and seven focus groups with older people. Describing participation and integration as older people's embeddedness in social networks, and the extent to which older people contribute to, or draw upon the social capital that exists in their neighbourhoods (Scharf et al, 2000: 19). Spatial segregation was defined as a key component of social exclusion in later life, which the study explored in terms of segregation of mental space, narratives of space, and economic space (Scharf et al, 2000: 20). For example, the study found that some of the participants were limiting their mental space due to concerns about crime that resulted in them avoiding certain places or situations (Scharf et al, 2000: 20). The impact of institutional disengagement, where services are withdrawn from marginal urban areas, upon older people living in deprived urban neighbourhoods was highlighted as a major concern for the participants during the focus groups discussions (Scharf et al, 2000: 20). One example of this was the absence of sub-post offices and affordable local shops which was problematic for older people with limited incomes and restricted mobility that often depend on such services (Scharf et al, 2000: 10). Institutional disengagement led to "necessitating dependence upon others and/or the use of more costly means of transport" (Scharf et al, 2000: 10).

To operationalise a definition of social exclusion in later life, Burchardt et al (1999) used longitudinal data from the British Household Panel Survey between 1991 and 1995. The study defined five types of activity that relate to an individual's participation in 'normal' social activities (Burchardt et al, 1999: 227). The five dimensions were: consumption activity (the ability to consume up to a minimum level the goods and services considered normal for society); savings activity (the accumulation of savings, pension entitlements, or property ownership); production activity (engagement in an economically or socially valued activity); political activity (engagement in some collective effort to improve or protect the immediate or wider social or physical environment); and social activity (engagement in significant social interaction with family or friends, and identifying with a cultural group or community) (Burchardt et al, 1999; Scharf et al, 2000). The results revealed strong associations between an individual's participation, or lack of participation, and the five different dimensions, as well as on each dimension over time (Burchardt et al, 1999: 227). However, few individuals were excluded on all dimensions in any one year, whilst even fewer experiencing multiple exclusion for the entire period of five years (Burchardt et al, 1999: 227). The authors suggested that the different dimensions of social exclusion should be considered separately, rather than as one homogeneous group (Burchardt et al, 1999: 227). Others have drawn similar distinctions, such as between 'individual' exclusion from services where it is unaffordable, and 'collective' exclusion from services where it is unavailable or unsuitable (Gordon et al, 2000: 56). The following sub-section looks at the role of ageing in place, the built environment and mobility related health problems in shaping experience of social exclusion and/or inclusion in later life.

3.1.3 Experiencing social exclusion and inclusion in later life: Ageing in place, the built environment and mobility related health problems

There is a trend within the modern Western world for older people to age in place. Ageing in place means that older people live in their own homes for as long as is possible, where necessary this can be supported with the aid of technological and/or mechanical support, such as assistive technology (OECD, 2001: 4). This tendency is encouraged, within the UK, through a number of policies that foster strategies to promote older people remaining in their own homes for as long as possible into later life (as explored in Chapter Four). Critical gerontology (such as Phillipson, 1982) acknowledges that the experiences of older people are structured by their location in the class structure as well as in the life course, however "little attention has been paid in the recent debates on general social exclusion to the situation of older people" (Abbott and Sapsford, 2005: 29). Within modern society, old age and poverty no longer have a synonymous relationship to one another; despite the fact that in 1998 sixty percent of the people of pensionable age were in the bottom forty percent of the income distribution (Howarth et al, 1998: 4). Those who rely solely on their

state pension, approx 1.5 million people in 1998, are the most vulnerable, as for example, they will spend much less on food than their peers with additional incomes (Howarth et al, 1998: 5). In 1998, there were approx 4 million older people whose lives are restricted by longstanding illness or disability, and the number of people from unskilled manual backgrounds in this group is disproportionately represented (Howarth, 1998: 5). Therefore, it is vital that debates around social exclusion do not ignore the circumstances of older people. Abbott and Sapsford (2005) discuss the role of geographical place in shaping the lives of older people, in terms of their experience of social exclusion. Instead of focusing on the individual, the geography of exclusion concentrates on geographical areas, asking what it is like to live in a socially excluded (impoverished) area (Abbott and Sapsford, 2005: 30). *Areas* are seen as having *problems*, rather than *residents* as being problems" (Abbott and Sapsford, 2005: 30; *original emphasis*). The study draws upon quantitative and qualitative data from a survey, workshops, and participant observation involving participants from one of the most deprived Local Authorities in England (Abbott and Sapsford, 2005: 32). The study found that the place where an older person resides impacts what services and information are available to them, this together with their individual personal circumstances, such as income and dis(ability), can influence their experience of social exclusion (Abbott and Sapsford, 2005: 33-34).

According to the 'Sure start to later life: Ending inequalities for older people' report by the Social Exclusion Unit in 2006, older people living in urban environments are increasingly likely to experience difficulties in accessing goods and services (Social Exclusion Unit, 2006: 90). The combination of the growth of out of town shopping centres, the demise of local shops, and the closure of local post offices are instrumental in this (Social Exclusion Unit, 2006: 90). They have lead to a "decline in social contact, as older people feel that the hub of their local area has been lost" (Social Exclusion Unit, 2006: 90). Therefore, for many older people living in urban environments, the need for adequate transportation services and links is fundamental and is often a vital lifeline that can be overlooked (Social Exclusion Unit, 2006: 22; 90). Policy in this area therefore builds upon the previous government policy agenda of improving access and bringing together services in order to empower older people and improve their quality of life (Social Exclusion Unit, 2006: 9). In the main, older people either want, or need, to travel shorter distances as they age, therefore, it is crucial for essential places and services, such as food shops and healthcare practitioners, to be located close to where older people live (Social Exclusion Unit, 2006). However, it must also be recognised that the built environment itself can also impact the amount that older people get out and about (Su and Bell, 2009: 46). If older people do not feel at ease within their physical environment, it is more likely to have a

negative impact upon their travel behaviour, creating a barrier which may mean they get out and about less often (Su and Bell, 2009: 46).

Older people are also more likely to have mobility related health problems which can cause difficulties in being able to get out and about easily (Lavery et al, 1996: 81; and Schlag et al, 1996). Mobility related health problems take account of: blindness/partial sightedness; hearing problems; inability or difficulty walking and bending limbs including wheelchair users; and medical problems affecting balance and stamina (Lavery et al, 1996: 182). This wide range of functional impairments means that it is not necessarily obvious or visible if someone has a mobility related health problem, especially as only around two to three percent of disabled people use wheelchairs (Lavery et al, 1996: 182). There is also reluctance from people with mobility related health problems to disclose themselves as disabled (Lavery et al, 1996: 182), which could mean there is a hidden population of people with disabilities. According to Lavery et al (1996: 183) a journey is formed of three intertwined components: the person; the vehicle; and the built environment. Transportation providers have influence over the vehicle, whilst transportation planners deal with the built environment (Lavery et al, 1996: 183). A number of transportation initiatives were introduced by the previous government in order to tackle the lack of adequate transport provision for people with mobility constraints in England. This included the wider development and outreach of existing Demand Responsive Transportation or Community Transportation services[14]. Yet despite the best intentions of these initiatives, other research continues to report on the existence of mobility and accessibility issues as barriers to travelling in later life (see, the Travel Token Campaign by Help the Aged (2007b). In order for the government to address the mobility needs of older people it is vital that policy makers and planners, as well as stakeholders and the general public, are well informed of the transport needs and expectations of older people (OECD, 2001: 8) Alongside this, it is important to recognise that the mobility needs and requirements older people have may change throughout the period of later life, in line with the ageing process and the onset of physical and mental impairments (OECD, 2001: 8). It is also important to remember that during this time older people's expectations will adjust in line with these changes. However, this may happen at a slower rate than the changes themselves, meaning there could be a time lag where expectations are higher than capabilities. Therefore, policy and planning departments as well as service providers must be adaptable in their approach to meeting the needs, expectations and requirements of older people. The meaning that older people give to social inclusion in later life is associated with quality of life and well-being, as the following sub-section demonstrates.

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[14] Such as, Dial-a-ride and Cango.

3.1.4 The meanings that older people give to social exclusion and inclusion in later life

Several studies have explored the meanings that older people themselves give to social exclusion and inclusion. In order to determine what exclusion in later life is, the Social Exclusion Unit (2006: 18) connected it with the concept of quality of life, by asking a sample of older people about what matters for their quality of life. The participants discussed a range of factors, including: decent health; decent income; the importance of their home; the importance of good relationships with family and friends; having a role; feeling useful; and being treated with respect (Social Exclusion Unit, 2006: 18). The Social Exclusion Unit asked older people to determine the barriers that prevent them from achieving a good quality of life (Social Exclusion Unit, 2005: 14). The participants described the following barriers: social isolation; bureaucracy; lack of access to leisure facilities; poor health and health inequalities; poverty; age discrimination; fear of crime; lack of social participation and loneliness; lack of accessible transport; and inappropriate services, with particular reference to the lack of lower level services; services not responsive to users; services not joined up; and a lack of information about services (Social Exclusion Unit, 2005: 14). Although social exclusion can be experienced at any age (Social Exclusion Unit, 2006: 8), it has been noted that the "boundaries of exclusion are essentially fluid rather than rigid", meaning that it is possible for people to get out of poverty (Scharf et al, 2000: 7). However, exclusion can be "particularly acute in later life for three reasons: people who are excluded in mid-life are rarely able to break the cycle of exclusion in later life, indeed it can often become more acute; the impact of key life events, such as bereavement, can lead people to become excluded in later life; and the impact of age discrimination on both the aspirations of individuals and the environment within which they operate can lead to exclusion" (Social Exclusion Unit, 2006: 8). Therefore, for many older people "the experience of being excluded may be maintained on a longer term basis than is the case with other groups" (Scharf et al, 2000: 7). Ultimately, this "may change the way in which exclusion is experienced" by older people, compared with other groups (Scharf et al, 2000: 7). Others have noted the role of independence in leading to a good quality of life and social inclusion in later life. According to Scharf et al (2005: 4) older people reported a good quality of life if they had the "ability to remain independent despite the challenges of daily life", through, for example, being able to "manage on a modest income or being able to live alone despite deteriorating health." They also identified their financial situation and poor family and social relationships as negative influences on well-being, for example "weaknesses in such relationships overlapped with physical and mental ill health and led participants to question the meaning of their lives" (Scharf et al, 2005: 4). This sub-section has focused

on the conceptual intersection of social inclusion, whilst the following sub-section will examine the conceptual intersection of independence.

3.2 Independence in later life

This section focuses on the concept of independence and its pertinence within later life. In order to understand what is meant by independence, it is also necessary to determine what is meant by dependence in later life. In this section, the developments in the ways that older people have been construed within both social policy and the social world, since the latter part of the twentieth century, are explained. Within this timeframe the construction of 'old age' has undergone a transformation, as changes in attitudes have began to shift from viewing older people as dependent to independent citizens. This is evident through the development of recent government policy, on an international scale, where the promotion of independence in later life is becoming a key theme (Plath, 2008: 1353), as will be explored in more detail within Chapter Four. However, the scope of the promotion of independence in later life has gone beyond policy makers, per se, and now engages both social workers as well as older people themselves (Plath, 2008: 1353). Yet there is still confusion over the meanings given to the terms independence and dependence, as they are often "varied, complex, often vague and at times contradictory" (Plath, 2008: 1353). This section is split into two parts: sub-section 3.2.1 explores theoretical approaches to understanding the notions of independence and dependence in later life; whilst sub-section 3.2.2, focuses on the meanings that older people themselves give to independence and dependence in later life.

3.2.1 Understanding independence and dependence in later life

In this sub-section the theoretical approaches to understanding independence and dependence in later life are discussed. This sub-section is split into three: the first part, 3.2.1.a, provides some historical context of how the social and economic position of older people has transformed from dependent to independent; the second part, 3.2.1.b, explores the life course approach; and the third part, 3.2.1.c, introduces the socially inclusive interpretation of independence.

3.2.1.a Historical context: From 'structured dependency' to 'independence' in later life

During the latter part of the twentieth century, within developed countries, "the social and economic position of older people was considered dependent" (Townsend, 1981: 5) Therefore, "counteractive governmental strategies were played out in the form of universal

retirement benefits" which, for instance, meant that early retirement was, for many, a given not a choice (Townsend, 2006: 161). Older people at the tail end of the twentieth century were "perceived and treated" in a particular way; they were considered, "more dependent than they really were or needed to be" (Townsend, 1981: 5; 2006: 161). This way of seeing older people as dependent had emerged as "a result of the constraints placed on scientific research into old age after the Second World War" (Townsend, 1981: 5). The social constructionist perspective that has come to be associated with structured dependency theory (see, Walker, 1980; Townsend, 1981; Phillipson, 1982) is one distinct position within contemporary gerontology concerning the limiting conditions of physical ageing (Gilleard and Higgs, 1998). The theory of structured dependency "privileges the contribution of social policy to the structuring of old age, both as social category and as lived experience" (Gilleard and Higgs, 1998: 17). Old age is connected to other "social categories of indigence and lack", where the "physical impact of age confers solidarity with others 'outed' by an unnatural society" (Gilleard and Higgs, 1998: 13). Structured dependency theory therefore provides an explanation of the way that the dependent position of older people within society became embedded through the economic and social policy of the period (Gilleard and Higgs, 2000: 13). It has been argued that, "if we interpret independence as the ability to make and implement choices", the theory of structured dependency presupposes "there are many areas where older people in our society have very little independence" (Wilson, 1993: 47).

In this type of environment older people are often "excluded, marginalized or rendered powerless", and age discrimination is easier accepted than challenged (Gilleard and Higgs, 2000: 13). Thus, the seminal argument of Townsend's (1981) earlier work lay in the twist which underpinned his "critique of structured dependency" (Phillipson, 1998: 2). This critique on the one hand provided an innate snapshot of "the representation of older people at a particular point in history", and on the other, was "a timely acknowledgement of the agency of older people" (Phillipson, 1998: 2). Laying the foundations to change the ways in which older people were considered within society, which went from "dependent to independent citizens" (Phillipson, 1998: 2). This change is also linked to "the transformation of institutions linked to the welfare state during the 1990's", which transformed the meaning of old age, "including the fact that retirement was no longer synonymous with old age as patterns of redundancy and early retirement spread within Western Society" (Gilleard and Higgs, 2000: 18). Gradually then, the societal meaning of 'old age' was changing, and increasingly "older people were beginning to be considered a heterogeneous group with a diversity of backgrounds and experiences" (Phillipson, 1998: 10). However, some "older people still continue to classify themselves as dependent citizens", this then can "exacerbate the negative aspects of structured dependency, and means that even to this day there is some way to go in the fight against negative age

discrimination, social exclusion and feelings of dependency in later life" (Townsend, 2006: 161). However, "realizing the full possibilities of social citizenship" can result in policy changes that enable older people to overcome some of the difficulties they face (Gilleard and Higgs, 2000:13).

3.2.1.b The Life Course Approach

The life course approach is a theoretical approach that regards "life transitions and changes in work status and family relations as a life process, rather than an isolated state or segment of human experience" (Hareven and Adams, 1982: xiii). The life course approach accentuates the connections between phases of the life course, offering a framework for assessing the variety of influences which factor in the life experience of different groups of individuals throughout their lives (Arber and Evandrou, 1993: 9). Particular cohorts of people are then located in a specific time period where experience is created through different historical forces (Hareven and Adams, 1982: 2). The life course approach does not consider older people to be a homogenous group; instead they are seen as "age cohorts moving through history, each with his or her distinct life experiences, influenced by the historical circumstances encountered earlier in life" (Hareven and Adams, 1982: 2). For example, current cohorts of older people have life experiences that are very different to their peers within contemporary society (Arber and Evandrou, 1993: 10). In the context of this study, cohorts of older people have, within their own lifetimes, grown up whilst information and communication technology has developed, thus the oldest old have had less opportunity to use such technology during their lives. Whilst some of the youngest old may have had experience of using such technology, their experience differs again when compared with cohorts of young people for whom such technology may be considered part of their everyday life. The life course approach means that the differences between cohort experiences are recognised, this is particularly useful given the onset of the digital age.

In developing an understanding of the concept of independence, the framework of the life course approach proves useful. At an individual level, the financial and material resources available to a person during the middle stages of life, have an influence over their perception of need and resources accessible during later life (Arber and Evandrou, 1993: 10). An example of this is housing, where the experience and range of options available in later life is "shaped by the tenure and quality of their earlier housing status" (Arber and Evandrou, 1993: 10) give. Thus, living in council owned property during mid life will often result in similar circumstances throughout later life, when the older person might be perceived as 'dependent' on such resources and the state, and vice versa, those with their

own homes may be identified as 'independent' and more likely to have access to personal resources. On a societal and historical level the introduction of a state pension in 1908 "marked the public and institutional formulation of old age as a distinct stage of life". Old age started to be considered as a "social problem" when a "fixed age for retirement socially created dependency" (Arber and Evandrou, 1993: 12) (examined in more depth in sub-section 3.2.1.a). This notion of structured dependency has until recently been the background to the lives of the current cohorts of older people as they have aged. Have these stereotypical views of older people as a burden upon society been reinforced within these cohorts themselves? Has this impacted upon their idea of independence? The life course approach enables the "diverse biographies, *which are* affected by gender, class position during adult life and ethnic background," (Arber and Evandrou, 1993: 10; *my emphasis*) of older people to be considered in line with the distinct historical circumstances experienced by different cohorts.

3.2.1.c Socially inclusive independence

In contrast to the view of independence as doing things alone, older people have considered independence in terms of social standing and self-esteem (Plath, 2008: 1365). Plath (2008: 1365) has defined this as socially inclusive interpretation of independence which recognises the "role of family, friends, communities, social institutions and government provision in contributing to experiences of well-being and a sense of being valued and respected by others". Socially inclusive independence "questions whether it is enough for older people to be *managing* alone" (Plath, 2008: 1365; *original emphasis*). In opposition to the theory of structured dependency, socially inclusive independence promotes later life as a time of engagement (Plath, 2008: 1365). Although, in order to fully understand what is meant by independence in later life, it is here argued that it is essential to understand what independence means to the individuals within ageing cohorts.

3.2.2 The meanings that older people give to independence in later life

In this sub-section the meanings that older people give to independence in later life are discussed. This sub-section is split into four parts. The first sub-section, 3.2.2.a, explores the importance of maintaining independence, interdependence and autonomy in later life. The second sub-section, 3.2.2.b, examines the desire to remain independent and living in ones own home in later life. The third sub-section, 3.2.2.c, looks at how older people avoid dependency and social isolation by remaining active in later life. The fourth sub-section, 3.2.2.d, focuses on the role of purposeful activities in independence in later life.

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3.2.2.a Maintaining independence, interdependence and autonomy in later life

Throughout the life course the meanings that are ascribed to the notion of independence, and hence, the definition of independence, undergo a number of transformations. Thus, independence in adolescence has a vastly different connotation to that of later life (Atchley, 1980: 244). Independence in later life has been described as having four dimensions: financial resources, housing and home, physical health (functional) resources, and social, emotional and sexual interdependences (Arber and Evandrou, 1993: 20-25). In another study, Sixsmith's (1986b) qualitative study of the meaning and experience of home in later life, independence was a significant and recurrent theme in data. Three dimensions of independence were identified: physical independence, being able to look after oneself, not being dependent on others for domestic, physical or personal care; autonomy, capacity for self-direction, being free to choose what to do, free from interference and free from being told what to do; reciprocity or interdependence, not being under obligation to anyone, and not having to rely on charity, independence is not threatened if support is based on this (Sixsmith, 1986b: 341). When thinking about dependence and independence in later life, they "should not be seen as dichotomies, but as part of a spectrum which involves interdependence and reciprocity" (Arber and Evandrou, 1993: 19). Data on the meanings that older people ascribe to quality of life was collected by Gabriel and Bowling (2004) in an empirical study using both qualitative and quantitative methods. The study involved a quantitative semi-structured survey that was completed by nine hundred and ninety nine people aged 65 and over (Gabriel and Bowling, 2004: 675). Eighty of the respondents completed follow-up qualitative individual interviews which took place one and two years after the baseline interview (Gabriel and Bowling, 2004: 675). The results from the qualitative strand found that older people themselves felt their "independence was threatened by poor health, impaired mobility, and a lack of transport" (Gabriel and Bowling, 2004: 688). Therefore, this demonstrates a link between transportation and mobility and older people's perspectives of independence.

According to the Audit Commission (2004a: 7-8) there are seven dimensions to independence in later life, these relate to housing and home; neighbourhood; social activities; social networks, keeping busy; getting out and about; income; information; health and healthy living. If social inclusion is concerned with encouraging participation in civil society (Preston and Raje, 2007: 152), then there is a correlation between the seven dimensions of independence and the aspects of social inclusion in later life. Social inclusion implies participation in processes and activities such as employment, social networks and social services (MacDonald, 2006: 16). Older people value the choice and

control over their own lives that being independent brings them (Audit Commission, 2004a: 3). The authority of the 'voices' of older people, particularly in research and advocacy settings, has been strengthened by the shift that sees older people increasingly considered as independent citizens. Choice and control in this sense is linked to the avoidance of dependency, an example of which is older people often wishing to remain in their own homes for as long as possible into later life (Audit Commission, 2004a: 3). Assistive technology is an example of a positive, unobtrusive way of assisting older people and people with disabilities to live independently. Something simple, such as a fridge alarm which bleeps if the door is left open for too long, can help to enhance the choices that older people have within their lifestyles, this ultimately means that potentially older people have more control over the direction of their lives and whether they remain in their own home (Audit Commission, 2004a: 19).

3.2.2.b The desire to remain independent and at home in later life

In a qualitative study designed to understand independence in later life, in-depth interviews with twenty nine older people aged 65 years old and over were undertaken (Plath, 2008: 1356). During the analysis of the transcripts, Plath (2008: 1357) identified the following five discourses of independence: doing things alone; making one's own decisions; physical and mental capacity; having resources; and social standing and self-esteem (Plath, 2008: 1357). Interestingly, the study described how these discourses of independence are interrelated and often intertwined in discussions about independence (Plath, 2008: 1357). Both the positive and negative experiences of these discourses of independence in later life were highlighted by the participants of this study (Plath, 2008: 1362). For example, doing things alone resulted in the sample of older people experiencing a sense of satisfaction, although they also reported that it could lead to them going without things they needed and being isolated (Plath, 2008: 1362). A number of studies have focused on the role of housing and the home, "both symbolically and instrumentally, in affording independent life" in later life (Sixsmith, 1986a: 339). In a qualitative study with thirty older households from urban and rural localities, Langon et al (1996: 2), describe how the importance of housing and the home for older people, is connected to the desire to maintain independence in later life. The participants described 'home' as a place where "they could express their individuality and their need to retain their sense of autonomy and control over their lives" (Langon et al, 1996: 8). The meaning of independence for the majority of the participants was clearly connected with their desire to remain independent in later life (Langon et al, 1996: 8). Three themes emerged from the participants discussions around remaining independent in later life: "the importance of activities and social networks outside the home; the importance of routine; and the strong

desire to avoid becoming dependent upon others" (Langon et al, 1996: 8). The importance of a varied lifestyle outside of the home which gave them "self esteem and enthusiasm for life" was central to the participant's discussions of the importance of the home (Langon et al, 1996: 8-9). Facilitation of these activities and social networks outside of the home relied upon access to transportation (Langon et al, 1996: 9). The participants emphasised the importance of structuring their day through routine, this included their interests and hobbies as well as activities such as shopping and laundry; the reasons for this were linked to health, enjoyment and as a coping strategy to avoid loneliness (Langon et al, 1996: 9-10). None of the participants wanted to be dependent upon others and this included their children, friends and social services; however this sense of dependence on others was alleviated somewhat if the help received was in the form of a reciprocal relationship or interdependence (Langon et al, 1996: 10-11). A qualitative study conducted by Sixsmith (1986a: 339), suggests that the home is an integral part of understanding independence in later life (Sixsmith, 1986a: 344). This study, in which sixty older people living in their own homes were interviewed, unpicked the meanings of independence in later life. The social care and service perspectives of authorities generally define independence as the opposite of dependence, in terms of later life this is often depicted as an older person being able to do things for themselves and not reliant on others (Sixsmith, 1986a: 340). However, this study argues that the meaning of independence in later life, from older people's perspectives, does not construct independence and dependence as opposites (Sixsmith, 1986a: 340). Interestingly, the participants of this study described independence as: not being dependent on others; a process which they defined as self-directed; and an obligation or responsibility that they had to themselves as well as society (Sixsmith, 1986a: 342).

3.2.2.c Avoiding dependence and social isolation in later life by remaining active

In a qualitative study (see, McKie, 1999) involving one hundred and fifty two older people aged 75 years old and over from rural and urban localities in Scotland, semi-structured interviews were conducted to discuss the participant's dietary beliefs and practices. The participants stated that "food was perceived as a contributing factor to keeping bodies going and limiting the potential for dependence on others" (McKie, 1999: 528). The importance of living in their own homes and communities and wishing to avoid going into hospital or in a nursing home as this would result in a potential loss of independence was also discussed (McKie, 1999: 530). Retaining or improving their own level of independence was also significant, and in order to achieve this, the participants stressed the importance of "remaining active" (McKie, 1999: 530). The study highlighted the need

for physical, psychological and social activity in later life in order to avoid dependence and isolation (McKie, 1999: 530). Some of the participants described the strategies that they had developed in order to evade dependence and isolation in later life (McKie, 1999: 531). For example: going to the shops on a daily basis just to see people and "hear local gossip; and being involved in "social eating" through going to local cafes/lunch clubs (McKie, 1999: 531). The study found that these strategies were "underpinned by keeping contact with families regardless of distances involved" (McKie, 1999: 531). The participants adopted a strategic approach to tackling social isolation by developing and keeping social networks (McKie, 1999: 531). Although effective for this particular sample, these strategies required a certain level of mobility and the financial income to be able to participate (McKie, 1999: 531).

This study also highlighted the role of grocery shopping as a "key dimension of what older people define as independent living" (McKie, 1999: 535). The need and importance of local shops in later life, particularly for older people with limited mobility and incomes, has been outlined in several studies (including: Leighton and Seaman, 1997; and McKie, 1999). Large out of town shopping centres are an advantage to consumers in that they have brought with them competitive prices and one–stop shopping experiences, however, they have also lead to a decline in local shopping facilities (Leighton and Seaman, 1997: 363. Local shops "are an important resource for older people in terms of social contact and a focus within the community" (Leighton and Seaman, 1997: 363). Some older people, particularly those on a low income, or that are not able to travel far enough to "gain a choice in their shopping" are disadvantaged in that they are dependent upon local shops (Leighton and Seaman, 1997: 363). McKie (1999: 533) found that the participant's proximity to shops and supermarkets increased their food choices. This gave the participants with mobility problems the ability to manage their grocery shopping by dividing it up over several hours or days (McKie, 1999: 533). The participants also described other strategies to assist them in their grocery shopping; one person stated that they hired a car once every six to eight weeks in order to overcome the difficulty of carrying heavy items (McKie, 1999: 533). Using taxis, buses and family/neighbours cars allowed the participants to avoid steep gradients, even on short distances (McKie, 1999: 535). Despite commenting on their dislike for convenience food, "a number of participants, especially those with mobility problems, did buy ready made meals, to avoid the problem of carrying 'bulkies and heavies' and reduce the effort of preparation" (McKie, 1999: 532). However, the participants felt that social service assistance with grocery shopping could be problematic, as "home carers were required to use local shops, which are more expensive then supermarkets" (McKie, 1999: 534).

In a quantitative survey completed by sixty three respondents aged 60 years old and over, Leighton and Seaman (1997: 363) found that "income, location, transport and the supermarket environment are all potential factors that can contribute to the disadvantage of older people". The respondents cited convenience as the main reason for the choice of their regular grocery store (Leighton and Seaman, 1997: 367). This notion of convenience was also linked to the mode of transportation that was utilised to get to the store, as those who walked or travelled by bus to reach the shop reported much higher limitations than those who had access to a car (Leighton and Seaman, 1997: 367). The main difficulties within the store were described as: reaching the highest and lowest shelves; carrying baskets; and reading price displays (Leighton and Seaman, 1997: 368). Most of the respondents were describing their grocery shopping experience at a supermarket, although this was often facilitated through access to a car or vehicle or others who would give them a lift to the supermarket (Leighton and Seaman, 1997: 368). This demonstrates how some older people may rely upon their social and community networks, and that these patterns might be different if they had no-one to drive them (Leighton and Seaman, 1997: 368). The authors commented that "for many the involvement in social networks through shopping and food activities was of positive benefit to their well being" (McKie, 1999: 533). The use of "routines" gave meaning and purpose to their daily activity (McKie, 1999: 534).

3.2.2.d Purposeful activities in later life

Valued occupations are defined as, "the purposeful use of time, energy, interest and attention in self care, work or leisure", which is central to "the human experience contributing to health, and influencing the meaning of life of individuals" (Stanley, 1995: 101). In a study that investigated how a sample of older people spent their time, and the amount of time in "valued occupations" (Stanley, 1995: 100), "age was significantly correlated with time spent alone; as age increases time spent alone also increases" (Stanley, 1995: 109). The study, which utilised the time budget methodology in which seventy four older people aged between 70 and 89 years old recorded all of the activities that they engaged in over a forty-eight hour period (Stanley, 1995: 102-103). The results indicate that However, time spent alone was not connected to life satisfaction (Stanley, 1995: 109). Lack of finances and social support was not significantly associated in affecting activity involvement (Stanley, 1995: 110). Possession of a driving licence was a significant predictor of life satisfaction in this study, possibly as the "ability to drive a car is an important factor in maintaining independent community mobility (Stanley, 1995: 111). There were variations in the quality of the data, where some activities were under reported, travel for example was noted "to have occurred but not recorded, or the outward

and homeward journey have considerable differences in the time taken" (Stanley, 1995: 111). The participants were asked to report all of the activities that they undertook, including when they did more than one at a time, however none of them reported doing more than one at a time (Stanley, 1995: 112). The Nottingham Longitudinal Study of Activity and Ageing (NLSAA), is an eight year survey of activity, health and well-being with a sample representative of England and Wales, the baseline survey was conducted in 1985 with follow up surveys in 1989 (re-interview rate of n=690) and 1993 (re-interview rate of n=410) (Bath and Morgan, 1998: 30). This longitudinal study is based on a sample of one thousand and forty two people aged 65 years old and over, randomly sampled from general practitioner lists in Nottingham (Bath and Morgan, 1998: 29). The NLSAA study shows that older people's participation in some activities, such as walking, are independent of levels participation in other activities, such as housework and gardening (Bath and Morgan, 1998: 29). It reveals that older people are not active or inactive in general, "but appear instead to be selectively active or inactive within certain task-specific domains" (Bath and Morgan, 1998: 29). The results indicate that "if physical activities are longitudinally predictive of compromised health status, it is reasonable to anticipate higher levels of health and social service engagement among the least active" (Bath and Morgan, 1998: 32). Higher levels of activity and personal fitness were associated with longevity and maintained independence (Bath and Morgan, 1998: 34).

3.3 Mobility in later life

This section looks specifically at the concept of mobility and its pertinence in later life. The rapid growth of transportation and communication technology within western modernity is aligned, and explored, in relation to the development of the concept of mobility. As will be discussed within this section, this is leading to mobility becoming a multi-disciplinary, multi-dimensional concept, one that lacks a comprehensive academic interpretation and understanding, and therefore warrants further research and exploration which will underpin its theoretical development. This section is separated into six sub-sections. The first sub-section 3.3.1 explores how mobility has developed within western modernity. The speed and scale of the diffusion of information and communication technology is changing the notion of mobility. The concept of mobility is becoming multi-disciplinary and multi-dimensional, as this sub-section explores. These transformations mean that the concept of mobility is evolving rapidly, yet academic understanding of mobility remains limited. Sub-section 3.3.2 focuses upon the existing theoretical interpretations of concept of mobility. The main focus of this sub-section is on Urry's (2007) argument that the social sciences are undergoing a paradigm shift in which it is becoming less about the social and more about the mobile. This, Urry (2007), terms the 'mobilities' paradigm. The third sub-section 3.3.3 explores the emerging virtual and imaginative dimensions of mobility. Sub-section 3.3.4 looks at defining the gap in academic understanding of the concept of mobility. What questions need to be asked about mobility? What methods can be used to explore the pertinence of mobility in later life? This sub-section also signals how this study will develop a conceptual framework for mobility, from the existing literature and the findings of the empirical data collection, in order to begin to bridge this gap. The fifth sub-section 3.3.5 describes the complexities of understanding mobility in later life. Later life is a time when people are increasingly likely to experience physical or mental impairments. Thus, it is argued within this sub-section that focusing on mobility in later life means that the findings are also applicable to other groups such as people with disabilities, as well as the population in general. The final sub-section 3.3.6 explores how the conceptual framework for mobility has been developed within this research.

3.3.1 Mobility: A multi-disciplinary, multi-dimensional concept

"Mobility defines us. That is how basic it is."

Freund, 2003: 68

The concept of mobility has been explored in different ways by a number of disciplines. In the social sciences this includes social and spatial perspectives (Rush and Ouellet, 1993:

486). An example of this is mobility research within the field of sociology which has traditionally focused on aspects of class stratification. This type of research often focuses on social mobility, or the degree of upward or downward mobility of individual or group social status throughout the life course, for example, Goldthorpe, Llewellyn and Payne (1987). In other fields the traditional emphasis has been upon physical mobility. In human geography and demography, scholars have focused on physical movement in terms of patterns of migration and settlement, developing models and theories to explain population migration, for example, Lee (1966) 'Theory of Migration'. In transportation studies the main focus has been around modelling travel behaviour, in order to predict future trends and demands, as discussed in Chapter Three, (section 3.2). Furthermore, in the field of health and gerontology, scholars have applied a functional approach to "assess the ability of older individuals to move within their environment" (Rush and Ouellet, 1993: 487), such as, Hogue's (1984) model used to organise information on the mobility of older people. However, as will be discussed within this chapter, mobility is no longer just about these traditional social and physical dimensions (Rush and Ouellet, 1993). A wider set of issues linked to the speed and scale of developments in transportation and communication are impacting upon mobility within western society (Castells, 2000). Mobility as a concept is then becoming both multi-disciplinary and multi-dimensional, thus complicating interpretations of its meaning. The following section clarifies the interpretation of mobility within western modernity.

3.3.2 Western modernity and mobility

Mobility in western modernity is heavily connected to technological mobility; this is linked with particular inventions, such as the car and the aeroplane, which enable individuals to travel further, and at a faster rate, than has been achieved before (Cresswell, 2006: 15; Urry, 2007: 18). This has also led to radical transformations in the meanings of time and space within modern society (Castells, 2000; Giddens, 1991) which have "functionalised and rationalised everyday life" (Cresswell, 2006:16). Thus, modern lifestyle choices and technological advances are impacting upon the interpretations of mobility. The concept of mobility is becoming "multi-dimensional encompassing interrelated, physical, cognitive, emotional and social dimensions" (Rush and Ouellet, 1993: 489). The sociologist John Urry is pivotal in developing this argument for the dimensions of mobility (Urry, 1999: 1). Urry (1999: 49) notes that these "diverse mobilities", such as imaginative and virtual travel, are "constitutive of the structures of social life…it is in these mobilities that social life and cultural identity are recursively formed and reformed". Therefore, the complex "interdependencies and social consequences" of the diverse mobilities of "people, objects, images, information and wastes" cannot be ignored by the social sciences (Urry, 1999: 1).

3.3.3 Theoretical interpretations of the concept of mobility

Scholars are aware that the concept of mobility lacks theoretical development within academic literature. This is most explicit in the work of: Rush and Ouellet (1993); Urry (1999; 2007); Cresswell (2006); Metz (2000; 2003); and Kakihara and Sorensen (2002). The lack of theoretical development of the concept of mobility is highlighted by Rush and Ouellet (1993) in their paper, 'Mobility: a concept analysis'. Mobility is at the centre of nursing practice, even though its "theoretical basis is yet to be defined" (Rush and Ouellet, 1993: 486). The article explores usage of the concept of mobility within different disciplines, and the meaning within nursing practice, as a step towards achieving a definition of mobility for clinical practice (Rush and Ouellet, 1993). They describe their analysis of the concept of mobility as a "starting point for the development of relevant theory" (Rush and Ouellet, 1993: 486). The outcome of mobility is: psychological and physical well-being; satisfaction derived from goal achievement; greater self-awareness; and sense of control (Rush and Ouellet, 1993: 490). Mobility, in terms of free movement, means that one is in control of their environment and this increases an individual's feelings of independence and autonomy (Rush and Ouellet, 1993: 490). The analysis shows the need for further investigation, which meant they were unable to operationalise the concept of mobility (Rush and Ouellet, 1993: 490). The "abstract nature of the concept and its broad usage make it difficult to give it a focus that will be useful for nursing practice" (Rush and Ouellet, 1993: 490). Further qualitative research is needed to empirically validate the "defining attributes" of mobility, and that such research should consider all perspectives including service users and professionals (Rush and Ouellet, 1993: 490-491). The authors state that:

> *"Mobility is not a static state or condition but one that is continuously fluctuating as people grow, mature, age and face new demands and other changes that occur in their lives".*

> Rush and Ouellet, 1993: 489

Mobility, in this sense, is susceptible to the changes individuals experience in their day to day lives, a life course approach. Increasingly, 'being mobile' means more than people travelling; instead it is about the way that people "interact with each other in their social lives" (Kakihara and Sorensen, 2002: 2). Therefore, mobility should not just be linked to human travel but also human interaction, and existing debates around mobility are insufficient in capturing the significance of the mobilization of our social lives (Kakihara and Sorensen, 2002: 5). The domestication of information and communication technology into everyday life has facilitated the mobilization of human interaction (Kakihara and

Sorensen, 2002: 5). This fluid interaction is characterised by the "three interrelated dimensions of human interaction; spatial, temporal and contextual mobility" (Kakihara and Sorensen, 2002: 2). The increment in the use of information and communication technologies has meant that these three dimensions of human interaction have been "dramatically mobilized" (Kakihara and Sorensen, 2002: 2). This extended theoretical perspective of the concept of mobility is developed in a paper by Kakihara and Sorensen (2002).The paper considers how to extend the concept of mobility, arguing that to understand the emerging debates on mobility, scholars must go beyond functional understanding of mobility to capture the various "dimensions of mobilization of our social interaction" (Kakihara and Sorensen, 2002: 8-9). The importance of rethinking our understanding of information and communication technologies, particularly mobile technologies, calling for a need to "appreciate the dynamic interactivity between humans and technologies" which is "continuously reshaping and further fluiditizing our interactional patterns" is also emphasised (Kakihara and Sorensen, 2002: 8). However, this dual relationship between people and technology, in Kakihara and Sorensen's (2002) account of the concept of mobilization, gives it a very different meaning to the concept of mobility explored within this study. In this research however, mobility and technology are seen as separate, mobility is an individual experience, whilst technology has a separate 'facilitating role' which may or may not be made use of by the individual.

Despite these efforts to interpret the concept of mobility, there is still a lack of theoretical understanding of the concept of mobility, which scholars have acknowledged. It has been suggested that:

> *"Mobility, then, is more central to both the world and our understanding of it than ever before. And yet mobility itself, and what it means, remains unspecified".*

<div align="right">Cresswell, 2006: 2</div>

There is a need to operationalise the concept of mobility in order to enhance understanding (Metz, 2000: 150). Applying the concept of mobility to real world circumstances and lives will assist in filling the gap in academic understanding and the theoretical development of the concept of mobility (Metz, 2000: 150). Therefore, this research will take steps towards permeating this gap, through the 'eyes' of older people themselves, with the development of a conceptual framework for mobility, as discussed in more detail later within this chapter.

3.3.4 The emerging dimensions of mobility: Virtual and imaginative mobility

In this sub-section two emerging dimensions of mobility, virtual and imaginative mobility, are discussed. The rapid diffusion of information and communication technologies within society means that virtual methods of mobility are becoming an alternative to physical mobility[15]. Virtual mobility means that a physical journey is supplemented or substituted with some form of virtual one, examples of which are face-to-face communication replaced with email, and shopping replaced with online shopping. Virtual mobility is, though, a relatively recent theoretical concept, and thus there is a limited amount of empirical research and data to draw upon. However, the idea of telecommunications changing travel has been explored for a number of years (for example, Mokhtarian, 1990; Salomon, 1986) and studies focusing on phenomenon such as tele-working ("flexible working" coined by Nilles, 1975) and tele-shopping (Hepworth and Ducatel, 1992). More recently, Lyons et al (2008) have explored the substitution of communication for travel. In this book chapter, Lyons et al (2008), reinforce the relevance of being able to substitute communications for travel within modern society. Travel, they suggest, has wider macro level concerns, and travel behaviour can be influenced by government policy, so for example road pricing may influence levels of internet shopping (Lyons et al, 2008: 214). According to Lyons et al (2008: 215):

> *"One of the major challenges in this rapidly evolving 'information age' is for empirical evidence to be gathered and research to be conducted to monitor and understand what is happening in terms of the nature and scale of the influence of information and communication technology on access and mobility".*

Leading the way in thinking about virtual mobility as a tool to address social exclusion is research by Susan Kenyon[16]. In the journal article, 'Transport and social exclusion: investigating the possibility of promoting inclusion through virtual mobility', Kenyon et al (2002: 207) state that information and communication technology, in particular the internet, "could help to provide accessibility without recourse to physical travel, and this could alleviate some experience of exclusion within many of the dimensions of exclusion". Therefore, the "potential of virtual mobility to alleviate mobility-related exclusion" is vast, although there are limitations of virtual mobility, which include the barriers that stop people from accessing the internet in general (Kenyon et al, 2002: 207). This study will look at how virtual mobility could impact the later years of life, and whether this type of mobility is

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[15] See: http://www.virtual-mobility.com/
[16] Originally explored in her doctoral thesis.

appropriate for older people? It is felt that by focusing on the potential of virtual mobility this will assist with the advancement of the concept of mobility more generally. Imaginative mobility has been described by Urry (1999: 66-70; 2007: 169-180) "as 'travel' elsewhere through memories, photos, travel guides and writing, postcards, radio, film and television" (Urry: 2007: 169). Imaginative mobility means that events, personalities and happenings are brought into and transform everyday life (Urry, 1999: 69). This results in the sharing of these events, personalities and happenings with many others who comprise a community (Urry, 1999: 69). For example, many imaginatively travelled and attended Princess Diana's funeral through their television screens (Urry, 1999: 67). Imaginative mobility could also be facilitated through information and communication technology such as the internet. Although Urry (1999: 69) only hints at the crossover between the trajectories of virtual and imaginative mobility, there is clearly a link. There is yet, no evidence of any empirical research or data that explores the imaginative dimension of mobility. Therefore any empirical data collection that begins to explore these emerging dimensions of mobility will prove insightful. This research will explore the notions of virtual and imaginative mobility with the sample of older people in the Getting Out and About project. As the chapter goes on to discuss, this will improve academic understanding and the theoretical development of the concept of mobility.

3.3.5 The meanings that older people give to mobility in later life

Few studies have attempted to explore perceptions of mobility and thus there is a dearth of literature on the meaning of mobility (Bourret et al, 2002: 339). The desire to be mobile does not disappear as people age; however the onset of physical and mental impairments in later life can mean that older people have to adapt or change the ways that they travel, for example, driving a personal car may be replaced by walking or catching a bus (Freund, 2003: 68). From the perspectives of institutionalised older people living in care homes, Mitchell and Jonas-Simpson (1995, cited in Bourret et al, 2002: 339), discuss mobility as central to being able to care for oneself, even though they relied on others for other parts of their care. Being mobile also enabled them: the ability to get up and move around; the desire to be free to come and go; and ability to have one's own space (Mitchell and Jonas-Simpson, 1995, cited in Bourret et al, 2002: 339). The participant's mobility and the freedom it gave them to move around were significant influences on their quality of life (Mitchell and Jonas-Simpson, 1995, cited in Bourret et al, 2002: 339). Similarly, Bourret et al (2002: 341), found that older people residing in a care home associated mobility with "independent performance of physical tasks and activities of daily living, as well as the ability to get out of bed and get around the institution on one's own". The participants of these qualitative interviews viewed restricted mobility negatively with a lack of freedom

and control. (Bourret et al, 2002: 341). The participants associated independence in the form of being able to care for one's self by, for example, being able to make a cup of tea, and being mobile enough to get around the house and local community without the help of others, with feelings of self-worth and freedom (Bourret et al, 2002: 341). Rather than admitting their dependency, the participants without the ability to move independently would simply avoid taking part in particular activities (Bourret et al, 2002: 341). This section has explored the concept of mobility. The following section examines the inter-relationships between the meanings that older people assign to the conceptual intersections.

3.4 The inter-relationships between the meanings that older people give to the concepts of social inclusion, independence and mobility in later life

This section will explore the similarities and differences between the meanings that older people give to the conceptual intersections of social inclusion, independence and mobility in later life. Throughout this chapter there have been visible overlaps between the sections discussing the meanings that older people give to these conceptual intersections. There is a connection between being mobile and independence in later life, for example, Bourret (2002: 341) describes the negative impact that restricted mobility has on independence. In studies that have explored the conceptual intersections in later life, there is also a clear, shared use of terms quality of life, well-being and social isolation, this demonstrates the inter-relationship between the conceptual intersections. For example, in exploring social inclusion in later life, Scharf et al (2005:4) found that the participants, who had reported a good quality of life, were those that stated they had remained independent in later life. This relationship between being mobile and independent, and quality of life and well-being in later life is explored in sub-section 3.4.1. The avoidance of social isolation and loneliness in later life is another area that links the conceptual intersections, as discussed in sub-section 3.4.2. The final sub-section, 3.4.3, focuses on the individual differences of older people which may impact the meanings that they give to the conceptual intersections. Older people relate to the concepts of independence and mobility, although it seems that social inclusion is a more theoretical based concept that links academic and policy discussions of independence and mobility in later life.

3.4.1 Being mobile and independence in later life: the correlation with quality of life and well-being in later life

Within the modern western world, as the literature has shown, older people want to avoid being dependent on others, and remain in control of their lifestyle choices. To achieve this it is important for older people to remain active and to retain independence in later life (McKie, 1999: 531). Mobility is a fundamental part of being able to take care of one's self (Mitchell and Jonas-Simpson, cited in Bourret et al, 2002: 339). Therefore, older people associate being mobile with independence in later life (Bourret et al, 2002: 341). Studies have made connections between transportation and quality of life in later life (see, Gilhooly et al, 2002). Links between mobility and quality of life in later life have also been determined (for example, see Metz, 2000: 149). These have been described in discussions around loss of mobility in later life, which can result "in a substantial diminution of well-being" (Metz, 2000: 149). Examples of this have been cited as, the loss of mobility "when a person can no longer safely drive a car or when physical movement is significantly hindered through age-associated disability" (Metz, 2000: 149). Other studies have noted the connection between being mobile and independent, and quality of life in later life, despite the possibility a decline in mobility as people age (for example, see Tacken, 1998: 379).

A number of factors have been identified as central to quality of life in later life: having good social relationships, help and support; living in a home and neighbourhood that is perceived to give pleasure, feels safe, is neighbourly and has access to local facilities and services including transport; engaging in hobbies and leisure activities (solo) as well as maintaining social activities and retaining a role in society; having a positive psychological outlook and acceptance of circumstances which cannot be changed; having good health and mobility; and having enough money to meet basic needs, to participate in society, to enjoy life and to retain one's independence and control over life (Gabriel and Bowling, 2004: 675). Many of the eighty participants in this study stressed the importance of being able to walk and having good mobility, in retaining their independence, and for their quality of life (Gabriel and Bowling, 2004: 687). Continuing to be able to do things for themselves, such as grocery shopping and household chores, and avoiding dependence on others was also important to the participants of this study (Gabriel and Bowling, 2004: 687). Immobility was associated with boredom, monotony and confinement indoors, whilst mobility and independence were connected to getting outdoors, enjoying life, meeting other people and avoiding dependence on others (Gabriel and Bowling, 2004: 687). Access to a car was linked to independence and quality of life as it meant they did not have to rely on public transport, although those without access to a car felt that this

decreased their independence and therefore detracted from their quality of life (Gabriel and Bowling, 2004: 688). Those who were reliant on public transport reported poor or infrequent services which resulted in them being unable to do the things, or see the people, they would like to (Gabriel and Bowling, 2004: 688). Some of the female participants regretted never learning to drive, others were prevented from continuing to drive due to poor health, and they commented on their reliance upon their husbands for lifts (Gabriel and Bowling, 2004: 688). This interdependence was important in the female participants quality of life; those who's partners that had driven and were now deceased discussed how they were now themselves unable to drive, and missed going out in the car and the associated activities felt this had a negative impact on their quality of life (Gabriel and Bowling, 2004: 688). Generally the participants described independence in later life as enhanced by good health, adequate income and access to a car, whereas it was under threat from poor health, poor mobility and a lack of transport (Gabriel and Bowling, 2004: 688). The study also highlighted how psychological well-being and outlook can impact quality of life (Gabriel and Bowling, 2004: 683). Almost all of the participants felt that their personalities and experiences contributed to their overall quality of life, this involved "personal philosophies about life and the way in which events and circumstances were interpreted by them", for example, with either an optimistic or a pessimistic perspective (Gabriel and Bowling, 2004: 683).

Later life has been described as a time of engagement, where the role of social and community networks in contributing to experiences of well-being and sense of being valued and respected by others has also been recognised as a socially inclusive interpretation of independence (as outlined by Plath, 2008:1365). Social capital has been described as, the "public resources available to individuals through their engagement in various community and social structures that can be drawn upon to produce some beneficial outcome" (Locher et al, 2005: 2). Older people can become isolated, experiencing loneliness and social exclusion if they have poor social and community networks and poor access to services (Cattan, 2001). Participation and interaction with others is an "essential feature of social capital" (Locher, 2005: 2). However, participation and integration in later life can differ to other times in the life course where institutions such as school and work influence social networks. Participation and integration in later life has been described as the extent to which older people contribute to, or draw upon, the social capital that exists in their neighbourhoods, and their embeddedness in social networks (Scharf et al, 2000: 19). Social media and technology provide ways of enhancing social capital and social networks, for example Networked Neighbourhoods which aim "to create citizen run digital platforms which can act as catalysts to increase neighbourhood social capital, grow democratic engagement and support effective collaboration between residents in their neighbourhoods and between citizens and public service

agencies"[17].Thus, social and community networks are particularly significant in later life, they can have a dual purpose in that they can provide older people with a reason to go out, for example to meet a friend for lunch, as well as assistance when they are unable to do so, for example a friend bringing round some groceries. The individual may not have any control over factors such as social capital in their local area (e.g. the number of volunteers), however they may have choice in participating in local activities which foster social networks (e.g. attend a local day centre). Choice may be constrained by factors such as transport or other commitments, such as a caring for a spouse or partner, so find they are unable to socialise outside of their home and have limited social and community networks to draw upon. Thus, social capital, community and social networks can have a positive or negative impact on mobility in later life.

3.4.2 Avoiding social isolation and loneliness in later life

The British Gas Help the Aged Partnership funded a study that explored social isolation and loneliness in later life (Cattan, 2002). The study included interviews and focus group discussions with one hundred and seventy older people, twenty three project staff, and a survey of one hundred and thirty nine projects and services in the north of England. To ascertain what older people need to overcome isolation and loneliness and whether services set up to help them are actually meeting those needs (Cattan, 2002: 1). It found that older people want to remain independent, and make their own choices about what constitutes an acceptable quality of life (Cattan, 2002: 2). Mobility problems in later life meant that older people became isolated and needed flexible services and support to help them overcome their particular difficulties (Cattan, 2002: 2). The participants wanted to maintain long term friendships and social contacts, and felt that "services need to support those social networks rather than replacing them with new activities that are not necessarily desirable or appropriate" (Cattan, 2002: 2). Social isolation and loneliness are different experiences and therefore require different approaches: those who are isolated usually requiring practical help and resources; and those who are lonely may need social support and extended social networks (Cattan, 2002: 2). The study made connections between avoiding social isolation and loneliness in later life, and the "availability of accessible and appropriate transport….as access to services and activities often depends on private transport," particularly in rural areas (Cattan, 2002: 4). Transportation offers individuals the physically ability to get from point a, to point b, this enables "individuals to more fully participate in an active community life" (Locher et al, 2005: 4). In a study that explored the underutilization of adult day care, Cohen-Mansfield et al (1994: 31) found that transportation problems were the main external reason that the participants cited for

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[17] For further information see: http://networkedneighbourhoods.com

not choosing adult day care. The study also found that some of the participants did not chose day care as they had found another suitable alternative, such as a placement in a nursing home, hiring paid help or informal help from friends and family (Cohen-Mansfield et al, 1994: 31). Another study by Clark et al (2002: 501) also found that poor access to transportation was a key factor in older people not completing cardiac rehabilitation programmes. Where possible, it was recommended that more transport or local provision could be offered to older people so that they are able to complete the cardiac rehabilitation programmes (Clark et al, 2002: 501). Alternatives were also suggested, including home-based rehabilitation which is an economical and effective alternative (Clark et al, 2002: 501).

3.4.3 The individual differences of older people

In terms of the differences between the meanings that older people give to the conceptual intersections, there is a noticeable distinction between the discussion of independence and mobility, against social inclusion in later life. Older people themselves talked about the terms independence and mobility, whereas the discussions around social inclusion, from the older person's perspective, were focusing on quality of life and social isolation. This highlights the theoretical nature of the concept of social inclusion in later life. As the next chapter demonstrates social policies have been developed upon particular meanings of independence and social inclusion that focus upon economic and social integration and active participation within society. However these social policy meanings of the concepts of independence and social inclusion fail to acknowledge the individual differences of older people. These individual differences of older people also imply that the meanings that older people give to the conceptual intersections may differ, depending on the personal circumstances of an individual. For example, an older person living alone in a rural area with access to a car may have a different idea of what independence means, in comparison to an older disabled person that uses a wheelchair and who lives with a partner in an urban area and relies upon public transport. It is therefore vital to recognise that older people are a "heterogeneous group whose diverse needs ought to be taken into account in this regard" (Locher et al, 2005: 12). It is important to "understanding this diversity matters when deciding how to prioritise policies that might affect different groups of older people" (Becker and Boreham, 2009: 7).

3.5 The inter-relationships between the thematic topics and conceptual intersections

Given that the discussion in this chapter has been concerned with research that focuses on the perspectives of older people or later life, it is already clear how the concepts of social inclusion, independence and mobility connect to the thematic topic of older people. However, as this section will explore, it would also be useful to distinguish how the concepts of social inclusion, independence and mobility relate to the thematic topics of transportation and technology. This section is divided into two sub-sections. The first sub-section, 3.5.1, examines transportation as a facilitator of social inclusion, independence and mobility in later life. The second sub-section, 3.5.2, looks at information and communication technology as a facilitator of social inclusion, independence and mobility in later life.

3.5.1 Transportation as a facilitator of social inclusion, independence and mobility in later life

This section explores the existing connections between transportation, social inclusion, independence and mobility in later life. Transportation plays a significant role in the well-being of people, "both as an enabler of access to goods and services and in terms of the negative social and health impacts it can have on people's lives" (Lucas, 2004: 2). Within modern societies, transport facilitates physical access to amenities, goods and services, and is thus, a means for individuals to be able to participate fully within a particular community (MacDonald, 2006: 16; Lucas, 2004: 2). Transportation and mobility are therefore a "stimulant to economic and social life", and as such, unavoidably, have an impact upon an individual's quality of life (Lucas, 2004: 10). However, the links between poor transportation and the "economic, social and environmental problems experienced by people living on low incomes", have only began to be documented fairly recently (Lucas, 2004: 1). Thus, the development of policies and programmes in this area is at a relatively early stage, as is explored further in Chapter Four (Lucas, 2004: 1). Amongst a number of concepts that are used interchangeably in the recent discussions in this area are: 'transportation-related social inclusion', 'transportation-related social exclusion', 'transportation poverty', and 'transportation disadvantage' (MacDonald, 2006: 1). Although each of these concepts has a "distinct provenance and a specific institutional and political locus, they share the perception that there are aspects of well-being that are of relevance to public policy and that are not adequately captured by traditional measures of poverty, which are largely based on concept of relative wealth" (MacDonald, 2006:1). Therefore, there is a need to explore the use of these terms within existing literature and empirical

data, as this sub-section does. The development of policy in this area is explored later in the thesis in Chapter Four (section 4.5).

The term 'transport poverty' or 'transport disadvantage' refers, in broad terms, to the "cumulative effect of poor public transport services, poor provision for walking and cycling (including access to public transport) and low levels of car ownership, particularly affecting; women, the poor, the disabled, dwellers in rural areas and other classically disadvantaged groups" (MacDonald, 2006: 17). Despite the lack of a common definition, the term has been used increasingly within recent academic writing (for example, Social Exclusion Unit, 1998). Of late, the concept of social exclusion has been recognised within the field of transportation studies and is increasingly becoming a "priority in *transportation* planning, policy and research" (Lyons, 2003: 339; *my emphasis*). Arguably, transportation and technological developments, such as the car, the television and the internet, have lead to the emergence of individualised lifestyles that have increased the risk of social exclusion upon the individual (Lyons, 2003: 399; and Preston and Raje, 2007: 152). Although, rather than addressing all of the dimensions of social exclusion, transportation-related social exclusion focuses on the mobility-related dimension (Lyons, 2003: 340). Transport-related social exclusion is not about income-based deprivation, as individuals with a high level of income can still be considered excluded by other dimensions of social exclusion (Preston and Raje, 2007: 152). Participation in society is partly "determined by access to work, education, healthcare, shops, leisure facilities, welfare, finance and housing", and "personal contacts, based on familial, kinship and organisational ties". These may or may not have a transportation dimension (Preston and Raje, 2007: 152), and can often depend on wider socio-economic factors, as well as the individual and situation itself.

Therefore, transportation-related social exclusion and inclusion focuses on two key elements: the inadequacies in transportation provision, and the transportation system itself (Macdonald, 2006: 1). Inadequacies in transportation provision can mean in terms of "access to the system itself or the level of service provided by the system", this "may create barriers limiting certain individuals and groups from fully participating in the normal range of actives, including key activities such as employment, education, health care and shopping" (Macdonald, 2006: 1). This highlights the connections between "transport provision and activity participation and the role of accessibility", the "issues that have long been the focus of activity-based transport analysis" (Macdonald, 2006: 1). The transport system itself may generate unequal environmental and social conditions that may impact "disproportionately on certain individuals and groups" (Macdonald, 2006: 1). This is about

the transport system itself, and the reinforcement or reduction of societal inequality. The emphasis in research around transportation and social exclusion has remained on "accessibility to 'key' services", where "accessibility has been an integrating framework for much work in the UK on social exclusion and inclusion" (for example see, Preston and Raje, 2007) (Stanley and Vella-Brodrick, 2009: 93). Few studies have gone further than this, and so there is a gap in ascertaining "why or how such access improvements might increase the well-being of those involved" (Stanley and Vella-Brodrick, 2009: 93). This means that "improved accessibility effectively becomes the outcome to be achieved, rather than relating this to specific social goals" (Stanley and Vella-Brodrick, 2009: 93). Therefore, transportation-related social exclusion and inclusion, and the resulting level of transport provision, can, potentially, play an important role in influencing individual outcomes of social exclusion or social inclusion (MacDonald, 2006: 16). However, there is a lack of a clear definition or methodology that depicts, "how transport provision influences social exclusion or promotes social inclusion" (MacDonald, 2006: 5).

A report published by the Social Exclusion Unit in 2003 (see, Social Exclusion Unit, 2003) heavily influenced the development of research that linked the areas of transportation and social exclusion (Stanley and Vella-Brodrick, 2009: 92). Drawing connections between the "exclusion of people who do not have access to a car and their needs for education, employment, access to health and other services, food shopping, as well as to sporting, leisure and cultural activities" (Stanley and Vella-Brodrick, 2009: 92). Barriers to accessibility were defined as "centering around: the availability and physical accessibility of transport; the cost of transport; services located in inaccessible places; safety and security, fear of crime; travel horizons, people on low incomes were found to be less willing to travel to access work than those on higher incomes" (Stanley and Vella-Brodrick, 2009: 92). The report (Social Exclusion Unit, 2003) stated that "to remove these barriers and reduce social exclusion through transport improvements, there is a need to understand how people access key activities and link this with Accessibility Planning" (Stanley and Vella-Brodrick, 2009: 93). Alongside, "undertaking key strategic policy initiatives, such as reviewing the regulations governing provision of bus services; integration of transport planning into planning for services provision (e.g. education); a range of initiatives to make transport more accessible, such as reducing cost and addressing the fear of crime associated with public transport; the formation of partnerships between transport providers, local authorities and local service providers, such as education and health; and work on transport solutions" (Stanley and Vella-Brodrick, 2009: 93). Subsequently, other studies have explored the connections between transportation and social exclusion (for example, see: Hine and Mitchell, 2003). Much of the research in this area covers similar ground to the Social Exclusion Unit who "largely define social exclusion in a transport context in terms of a loss of ability of people to connect with

services such as health facilities, local job markets and leisure activities" (Stanley and Vella-Brodrick, 2009: 93).

In a study that explored social exclusion and transportation in London, Church et al (2000) identified seven dimensions of transportation-related social exclusion: physical; geographical; exclusion from facilities; economic; time-based; fear-based; and space. Physical exclusion was based on physical, cognitive or linguistic barriers; and geographical exclusion was based on shortcomings in spatial coverage of transport provision. Exclusion from facilities was based on the location and/or nature of the facilities themselves; and economic exclusion was based on the cost of transport services. Time-based exclusion was based on scheduling conflicts and incompatibilities between the schedules of transport services and the temporal; whilst fear-based exclusion was based on concerns regarding personal safety and security associated with the use of transport services; and space exclusion was based on inappropriate design of transport interchanges and related public spaces. Similar categories have been defined within other studies. Five broad dimensions of transportation-related social exclusion were proposed by Graffron et al (2001), and Hine and Mitchell (2001). The five dimensions were physical, physically being able to handle the available means of getting there; economic, affording to get there; temporal, getting there at the appropriate time; spatial, being able to get there at all; and psychological, mentally being able to handle the available means of getting there.

Social inclusion is a "relatively new term in UK policy debates, but one that is closely related to the more well-established term, social exclusion" (MacDonald, 2006: 1). Transportation-related social inclusion focuses on participation in civil society which is determined by "access to work, education, healthcare, shops, leisure facilities, welfare and housing", as well as through social networks such as "familial, kinship and organisational ties" (Preston and Raje, 2007: 152). All of these factors may or may not have a transportation dimension, as the chapter has already discussed. However, it is through the facilitation of access to participation that social inclusion becomes transportation-related social inclusion (Preston and Raje, 2007: 152). Within transportation literature, the significance of transportation for facilitating access to amenities, goods and service is progressively being accepted (Lucas, 2004: 10). Reliance upon transportation systems has been reinforced by a decline in the number of health and education services and shops that can be accessed within acceptable walking distances from peoples homes (as discussed in, Elkin et al, 1991: 68-69). This has lead to the growth of policies that focus on the importance of providing all citizens adequate access to transportation (such as, DETR, 1998; as discussed further in Chapter Four). Much of the literature that

explores transportation-related social inclusion, focuses on policies and programmes that have been developed in order to enhance the inclusive potential of transportation, through mediums like Accessibility Planning and community responsive transport (as is discussed in Chapter Four).

Others have focused on the role of transportation in facilitating social inclusion. Social capital and connections with the community have been determined as two of the factors underpinning feelings of inclusion and well-being (Stanley and Stanley, 2007). Social capital has been described as a network between people, involving mutual exchange and trust (Putnam, 2000). Networks and links with family, friends, community members, organisational and government structures are central to well-being (Stanley and Vella-Brodrick, 2009: 94). Providing adequate public transport so that individuals can access employment and get to work, such as the arguments in favour of accessibility to key services as set out within Social Exclusion Unit (2003), is one way that transportation can facilitate social inclusion through the development of social capital (Stanley and Vella-Brodrick, 2009: 94). However, transportation may also provide the "means to enable people to form associations or relationships and engage with other people and groups, a common way of creating employment opportunities" (Stanley and Vella-Brodrick, 2009: 94). Although, these areas have been recognised within transportation research, there has been limited exploration of social capital and well-being in transportation studies (Stanley and Vella-Brodrick, 2009: 94). If social inclusion is about "being able to enjoy life, leisure and relationships", then it is vital to explore the role of transportation in facilitating this (Stanley and Vella-Brodrick, 2009: 94). As in the case of this study, when adding the context of later life and its underlying variety of physical ability, understanding the role of transportation in facilitating social inclusion, well-being and quality of life is complicated further. The relationship between transportation and social inclusion in later life can however work in various ways. Transportation not only facilitates journeys from point a, to point b; it also provides other ways for older people to remain independent. For example, schemes such as those that deliver weekly portions of frozen meals to older people, "not only directly improve nutrition, but directly impact on health, quality of life, and potentially enable older adults the means to maintain independence within the community" (Locher et al, 2005: 13). In a similar vain, information and communication technology can also ease social inclusion, independence and mobility in later life, as discussed in the following sub-section.

3.5.2 Information and communication technology as a facilitator of social inclusion, independence and (virtual) mobility in later life

Information and communication technology can support socially inclusive policy by contributing to the economic, social and political dimensions of inclusion (Van Winden, 2001: 861). However, the take up and application of information and communication technology, and the alliance with other social inclusion policies, is pivotal for this to be a success (Van Winden, 2001: 861). Email and the internet provide people with opportunities for social interaction, which many feel will improve social relations for excluded individuals (Van Winden, 2001: 863). It has been stated that, information and communication technology can reduce social isolation and loneliness in later life, for example a webcam may enable an older person to communicate more easily with other people and therefore reduce their sense of loneliness (Van Winden, 2001: 864). The same information and communication technology can also offer care-providers a non-intrusive way of monitoring an older person (Van Winden, 2001: 864). This section explores information and communication technology as a facilitator of social inclusion, independence and (virtual) mobility in later life; it is split into two sub-sections. The first sub-section, 3.3.1, looks at how older people, and people with disabilities, are increasingly making use of assistive technology to live independently in their own homes for as long as possible. Developments within the field of assistive technology are beginning to encompass information and communication technology, and have even spread as far as pervasive technology where the environment monitors itself. The second sub-section 3.3.2 examines these technological advances in the form of Gerontechnology and inclusive design principles.

3.5.2.a The development of assistive technology

The primary aim of the National Health Service and Community Care Act 1990 was to "enable people to live an independent and dignified life in the community" (Cowan and Turner-Smith, 1999: 75). However, the onset of physical impairments can mean that sustaining independence in later life is problematic (Schlag et al, 1996). The origins of the field of assistive technology were to create appropriate products and services to assist people with disabilities (Phillips and Zhao, 1993: 36). Over time, in line with the demographic changes of population ageing, assistive technology has also been developed to assist older people (Haggblom Kronlof and Sonn, 1999: 161). Some forms of assistive technology are then designed with a particular group in mind, such as wrist fall sensors worn by older people. Whilst other forms target specific categories of disability, which may or may not be associated with later life, an example of this is unlit gas sensors

for people with mild dementia. The development of assistive technology, such as powered wheelchairs and hoists, has helped people with disabilities and older people to maintain a level of independence, and this often enables them to live independently and remain in their own homes for as long as possible. For example, Brandt (2004: 70) suggested that, older people may adopt strategies to help them combat the onset of physical impairments such as restricted movement and limited walking ability, assistive technology is one of those strategies. In this study, the participants themselves stated how the powered wheelchairs were important as they "gave them independence" (Brandt, 2004: 70). They suggested that the reason they used the powered wheelchairs most frequently in the summer was for going for a ride, and in the winter was for grocery shopping (Brandt, 2004: 70). Assistive technology therefore has the potential to improve the quality of life of the user and carer by assisting them with activities of daily living (ADL) (Cowan and Turner-Smith, 1999: 75). Developments in assistive technology, such as tele-care and tele-services have increased the ways that individuals can access care, services and information, and this has promoted independence in other areas of peoples' lives. This has increased the range of products. For example, there are distinctions between assistive health technologies, such as heart pacemakers and social assistive technologies that promote independence, like fridge alarms.

Increasingly, users are gaining more control over the direction of the development of products. The Enabled by Design website is an example of this. Developed by Denise Stephens, following her diagnosis of Multiple Sclerosis, the website is a forum for people to review and share new and existing ideas with the aim of improving future assistive technology. It reflects the increasing visibility of users stating: "it's all about people-powered products: we are a community of people passionate about well designed everyday products, by sharing our loves, hates and ideas, we can challenge the one-size-fits-all approach to assistive equipment through the use of clever modern design"[18]. From the older persons perspective, there is a body of empirical research that evaluates the older user's level of satisfaction with assistive technology (for example see: Demers et al, 1996; and Phillips and Zhao, 1993), and more recently attitudes towards this technology (such as, Demiris et al, 2004; and McCreadie and Tinker, 2005). Measuring user satisfaction is fundamental to the development of this type of product in the future (Brickfield, 1983: 31-38; Phillips and Zhao, 1993). In 1996, Demer et al (1996: 3-5) developed the Quebec User Evaluation of Satisfaction with Assistive Technology or shorthand the QUEST clinical instrument, which was "designed to evaluate user satisfaction with assistive devices". QUEST has since been developed further by the same authors (see, Demers et al, 2002), and is now an internationally recognised tool

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[18] See: http://enabledbydesign.org/#comments-open

used by many other scholars to measure user satisfaction with assistive devices (for example, Goodacre and Turner 2005; and Wressle and Samuelsson, 2004). It was noted that "satisfaction is a very complex and subjective concept that is difficult to define", and were the first to suggest that "satisfaction is a multidimensional phenomenon that embodies a broad range of variables most likely to influence the degree of user satisfaction with assistive technology" (Demers et al, 1996: 5). Conversely, others stated that to improve the efficiency of assistive technology, a better appreciation of "how and why users decide to accept or reject a specific device" is crucial (Phillips and Zhao, 1993: 36). In a study, Phillips and Zhao (1993), looked at the reasons behind the abandonment of assistive devices, and categorised them into three areas: user's personal characteristics and technology acceptance; device attributes consumers prefer; and device utilization. In terms of technological developments, this type of research is prior to advances such as social networking supporting social inclusion, and focuses on bespoke technology rather than assistive use of more common technologies. Despite the progression in user control and feedback in the field of assistive technology, there is still a mismatch between the functionality, usability and likability of many products (Phillips and Zhao, 1993). Designers can be inclined to consider older people as a homogeneous group, however for suitable technological products to be developed for older people then it is necessary to focus, as far as possible, on their individual needs (Carey, 2001: 11). The next sub-section therefore looks at the development of more specialist fields of technology for older people.

3.5.2.b Gerontechnology and inclusive design

Gerontechnology is an interdisciplinary field combining gerontology, engineering and technology for the "benefit of ageing and aged people" (Fozard et al, 2000: 332). Gerontechnology combines the scientific study of ageing and technology, with the development of technologically based products, environments and services (Fozard et al, 2000: 331).The formal development of Gerontechnology was in the Netherlands during the 1980's; the term was coined in 1989 by Jan Graafmans from Eindhoven University of Technology (Graafmans and Taipale, 1998: 3). In 1992, the first book devoted to the field, written by Bouma and Graafmans (1992), was published. The purpose of Gerontechnology is to "use technology to prevent, delay, or compensate for the perceptual, cognitive, and physical declines of aging" (Fozard et al, 2000: 331). The aim is to "use technology to support or enhance the opportunities associated with aging related to communication, leisure, learning, service, and artistic expression" (Fozard, 2000: 331). Gerontechnology is applicable to a number of areas, including: "housing, personal mobility and transportation, communication, health, work, and recreation and self-fulfillment"

(Fozard et al, 2000). Products that are suitable for one person may not be suitable for another, therefore, the field of Gerontechnology aims to provide individualised solutions to individual problems (Pinto et al, 2000: 321). However, this approach is problematic, due to the fact that it may not be financial viable, or ultimately even possible (Pinto et al, 2000: 321). Thus, inclusive design is an appropriate alternative to Gerontechnology (Pinto et al, 2000: 321).

Inclusive design is an umbrella term for the collection of approaches, methods, and practices that encompass designing inclusively, such as design for all and universal design (Keates and Clarkson, 2004: 2). Designers are often unaware of the needs of users with different capabilities, or perhaps unaware of how to incorporate these needs into the design process (Keates and Clarkson, 2004: 2). The aim inclusive design is therefore to underline these issues and reduce this exclusion (Keates and Clarkson, 2004: 2). The field of inclusive design is rapidly developing. This makes it difficult to discuss the up to the date, or the latest examples. However, a current technological example is the iPad (a large touch screen computer) which was recently released by Apple, with a touch screen and accessibility features that help people with visual impairments[19], and an illustration linked to mobility is the walking aid, the four wheeled walker[20] . There are many examples of technology helping people with Activities of Daily Living (ADL), such as bathing, dressing, and feeding. It is common for carers to provide support with Instrumental Activities of Daily Living (IADL), including using the telephone, preparing meals, shopping for groceries, housework and laundry. Although, recently the Joseph Rowntree Foundation pioneered the development of SMART homes, or interactive houses where information and communication technology is used to assist the occupants (for more information see, Gann et al, 1999). There are also numerous studies concerned with the use of assistive technology to support people with ADL's and IDAL's, such as the Anchor Trust and British Telecom Telecare project (Porteus and Brownsell, 2000). The most recent development in this field is around pervasive technology. Pervasive technology is described in two ways; the first is linked to pervasive computers with emphasis on the devices that enable it, and the second around the human aspects that are associated with it (Quantrill, 2002: 3). Pervasive technology is therefore embedded within the environment, around us in all aspects of our lives. A real life example of pervasive technology is a bed sensor which monitors movement, making sure that the individual gets out of bed by the set time in the morning. If the individual does not get out of bed the system is programmed to telephone the individual. An alarm is triggered if the individual does not answer the telephone, the alarm notifies a friend, family member or

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[19] See: http://trail.ulster.ac.uk/?s=ipad
[20] For more information see: http://enabledbydesign.org/reviews/2009/11/4-wheeled-walker.html#comments-open

carer to go round and check up on the individual. A pilot study that focused on the psychosocial impacts of monitoring technology on participants in assisted living settings, found that "monitoring technologies could provide care coordination tools that are accepted by residents and may have a positive impact on their quality of life" (Alwan et al, 2006: 192). This section has explored the inclusive potential of transportation and information and communication technology, in terms of facilitating independence and mobility in later life. The following section determines the rationale for developing a conceptual framework for mobility in later life within this thesis.

3.6 Developing a conceptual framework for mobility

This section explains the thinking behind the development of the conceptual framework for mobility in later life within this thesis. As has been discussed within this chapter, there are gaps in the academic interpretations of the theoretical understanding of the concept of mobility. This means that there is scope for the development of a conceptual framework that addresses these disparities, and thus contributes new knowledge in this area. The study primarily draws upon literature, including policy and empirical data with a specific focus on older people and their experiences during later life. Therefore, the conceptual framework developed within this study is linked to mobility in later life. However, this does not mean that the conceptual framework is not applicable to other age groups throughout the life course; it simply indicates that throughout the rest of the life course there may be other factors that impact upon mobility which have not been taken into account by this study. An example of such a factor is the role of school and physical education in influencing the mobility of children and young people. The conceptual framework is a tool that has been developed, and used, within this research to explore the range of factors that impact upon mobility in later life. In this chapter, the version of the conceptual framework for mobility in later life takes into account the findings of the literature review (as presented below in Figure 4). Later in the thesis, this version of the conceptual framework for mobility in later life is tested and adapted in line with the findings of the empirical data collected for the Getting Out and About project (shown in Chapter Nine, Figure 11). This avoids the criticism that a conceptual framework can be metaphorical, reductionist, and based on one-sided theory (Botha, 1989: 49), by presenting a holistic visual representation of the factors that impact upon mobility in later life. Further detail on the specific application, value and limitations of the conceptual framework are examined in Chapter Nine (sub-section 9.2.4). This section is divided into three sub-sections. The first sub-section, 3.6.1, explains the different layers of the conceptual framework, and the interrelationships between them. The second sub-section, 3.6.2, clarifies the rationale that underpins the development of the conceptual framework for mobility in later life. The final sub-section, 3.6.3, determines how the conceptual framework will be developed further to include the findings of the empirical data collected during the Getting Out and About project.

Figure 4: The conceptual framework for mobility in later life based upon the findings of the literature review

FACILITATORS
e.g. access to a vehicle/internet

BARRIERS
e.g. ease of pavements/roads

MACRO LEVEL FACTORS e.g. NHS, transport systems

MEZZO LEVEL FACTORS e.g. Regional, local authority, community

MICRO LEVEL FACTORS e.g. Demographic, health, socio-economic

POSITIVE/NEGATIVE IMPACT ON MOBILITY

MOBILITY

PHYSICAL

VIRTUAL

ASSISTIVE

TRAVEL-BASED

COMMUNICATIVE

IMAGINATIVE
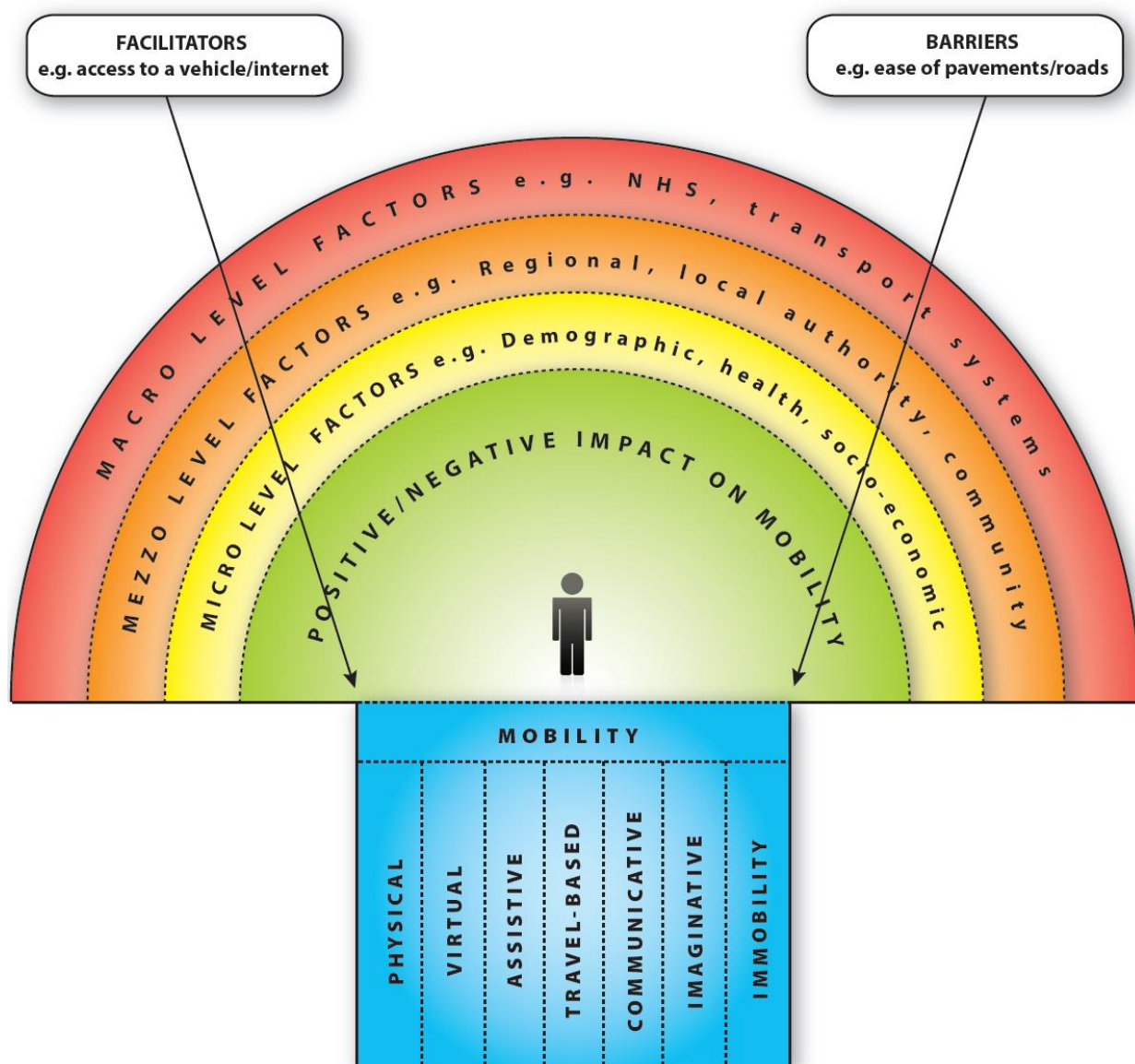
IMMOBILITY

3.6.1 The layers, and the interaction between the layers, of the conceptual framework for mobility in later life

The conceptual framework sets out the range of factors that impact mobility in later life, in order to map the relationship between the individual, their environment and their mobility. The conceptual framework is influenced by Dahlgren and Whitehead's (1991) Social Model of Health, which uses social ecological theory to describe the main determinants of health that lead to inequalities. The main determinants of health, they argue, can be "thought of as a series of layers, one on top of the other"; the individual is placed at the centre, surrounded by social and community influences, living and working conditions, and social structure (Dahlgren and Whitehead, 1991: 11). This approach bridges the divide between the macro and micro, by "relating the individual to the larger social systems in meaningful ways" (Kondrat, 2002: 435). Various social work scholars have made contributions to the development of this perspective (for specific examples of the systems perspectives and ecological or ecosystems frameworks see: Kondrat, 2002: 435). In the social work discipline these have "become the most prevalent approaches for explicating the person-in-environment perspective, long considered the organising framework for professional practice" (Kondrat, 2002: 435). The person-in-environment perspective takes into account the relationship between the person and their social environment, seeing the "individual and larger social systems as separate but contiguous elements that transact with each other in relationships of mutual influence" (Kondrat, 2002: 435). Visually placing the person in the centre means that the conceptual framework for mobility in later life utilises the person-in-environment perspective. One of the main reasons that the Social Model of Health was so influential over the design of the conceptual framework was due to the interaction between the layers of the model; for example, Dahlgren and Whitehead (1991: 11) note that government cuts to welfare services could affect access to adequate housing and therefore influence an individual's health. This interaction between the layers complements the findings of the literature review, and the thinking behind the development of the conceptual framework for mobility in later life. In particular, this builds upon the discussion outlined in Tight et al (2004: 12) around the range of factors that impact upon the decision to walk, including: "the distance of the journey; the time available; personal safety; road traffic; the built environment; the effort required; the weather; the familiarity of the journey; and access to facilities, such as public toilets". These factors can impact upon the decision to walk, "singly, cumulatively, or combined", and therefore the authors question whether these factors "assume different levels of influence when combined" and "whether there is causal relationship between these factors, in that what has happened before on a journey can impact future journey decisions"(Tight et al, 2004: 12). The use of the rainbow shape, dotted lines and arrows on the conceptual framework highlights the interaction between these factors. It is this

visual representation of the interaction between the factors that is the particular strength of the conceptual framework. The source of inspiration for using a rainbow shape design was the Social Work Reform Board Proposed Professional Capabilities Framework rainbow (see, Social Work Reform Board, 2010: 9).

3.6.1.a Macro level factors

The red layer of the rainbow is referred to as 'macro level factors', which here encompasses the wider economic, political, cultural and environmental structural conditions that people live in. Examples of macro level factors include: technological and transportation systems, as well as public policy at a national level, and government funded organisations, like the National Health Service. The individual has very little direct control over these macro level factors, although indirectly, action such as voting, campaigning and lobbying can bring about change. These macro level factors can have a positive or negative impact on mobility.

3.6.1.b Mezzo level factors

The orange layer of the rainbow refers to the 'mezzo level factors' which is concerned with the regional, local authority and community/neighbourhood level. This includes social capital, social networks, local authority services, and public policy at a local level. There is significant diversity in local support across the country: such as, Dial-a-ride services are delivered, funded and accessed differently across local authorities. The individual may or may not have control over these mezzo level factors: for example, the individual may increase their mobility and social networks by joining a local pensioner group, or may find that their mobility in the local area is limited by a reduction in local bus services. These mezzo level factors can have a positive or negative impact on mobility.

3.6.1.c Micro level factors

The yellow layer of the rainbow is the individual or 'micro level factors' which refers to demographic characteristics, health, socio-economic and lifestyle factors. These include: age, gender, ethnicity, living arrangements, marital status, health, disability, income, leisure, physical activity, smoking and drinking. Some of these characteristics are pre-determined at birth, for example, age and ethnicity, and thus are out of the control of the

individual. Whereas, many are a function of individual behaviour and action, such as participating in health risk behaviour (e.g. smoking tobacco, excessive drinking), which can led to poor health. Other factors have a more fluid nature and can change throughout the life course, including income; marital status; and living arrangements. These micro level factors can have a positive or negative impact on mobility in later life.

3.6.1.d Facilitators and/or barriers

The literature review has highlighted a number of facilitators and/or barriers that impact upon mobility in later life. The facilitators and/or barriers intersect the macro, mezzo and micro layers of the conceptual framework and therefore are depicted as cutting across these three layers. For example, national and local government decisions around spending and policy direction can be considered as macro and mezzo level facilitators and/or barriers. People aged 60 years old and over and people with disabilities are currently entitled to a free bus pass that permits them to travel anywhere in England without charge. This was introduced by the previous government and is administered from national funds which mean that it is a macro level facilitator and/or barrier. However, it was implemented on a regional scale and there are some differences in terms of the total hours of the day that each local council offers this concession, thus, in this sense it is a mezzo level facilitator and/or barrier. From the micro level the literature review has demonstrated that, for example: access to the internet; access to a car or vehicle; access to public transport; accessible travel information; the condition of road or pavements; the financial cost of public and private travel; assistive technology; day of the week; time of day; fear of crime and youth culture; and the weather, can be facilitators and/or barriers that impact upon mobility in later life. It should be noted that these facilitators and/or barriers to mobility are not an exhaustive list and that they can also have a positive or negative impact on mobility in later life. As all of the layers can have a positive or negative impact on mobility in later life, the phrase 'positive/negative impact on mobility' has been added to the green section of the conceptual framework placed around the individual in the centre.

3.6.1.e Forms of mobility

The blue section of the conceptual framework shows that the outcome of these multi-layer influences is mobility. Here the five interdependent "mobilities" identified by Urry (2007) have influenced the development of this section. These five "mobilities" are: the movement of people; the physical movement of objects to different categories of people;

the imaginative travel that results from display of images of places and people in print and visual media; virtual travel in real time that transcends geographical distance; and communicative travel via letters, messages and the telephone (Urry, 2007: 12). Urry (2007: 12) argues that these five "mobilities" enable the movement of people, ideas and information from place to place, person-to-person, and event to event. However, on the conceptual framework itself, seven forms of mobility in later life are depicted: physical mobility, virtual mobility, assistive mobility, travel-based mobility, imaginative mobility, communicative mobility, and immobility. Virtual, imaginative and communicative mobility are as defined above by Urry (2007). The movement of people and the physical movement of objects to different categories of people have been replaced by the terms physical mobility and travel-based mobility, as these are considered as reflecting more accurately the individual forms of mobility that older people undertake. Physical mobility is physically moving oneself and is associated with ADL (for example, getting out of bed, bathing, dressing, and feeding) (Patel et al, 2006: 217). Whilst travel-based mobility is moving or getting around from one place to another unaccompanied, and is allied with IADL (for instance, going to the shop to fetch groceries). The two additional forms of mobility: assistive and immobility, are drawn from other literature around mobility in later life. The use of assistive technology to support the mobility of people with disabilities and older people was set out within the literature review. Assistive mobility is about moving oneself with assistance from a carer or a walking stick, wheelchair, or some form of assistive technology, therefore to be mobile with assistance from a carer or technology (for example, using a mobility scooter to get to the library). Thus, assistive mobility was considered a different form of mobility that should be included on the conceptual framework. Immobility can be considered as the opposite of the various forms of mobility, however, particularly when thinking about later life, the significance of immobility is pivotal. The onset of physical and mental impairments has been correlated with the period of later life (Schlag et al, 1996), for example, arthritis may cause temporary or permanent spells of immobility. Therefore, immobility was added as an outcome on the conceptual framework for mobility in later life. It is possible to supplement or substitute one form of mobility for another, for example grocery shopping online can be termed as the substitution of physical with virtual mobility. Older people develop strategies to deal with difficulties such as carrying heavy bags, including asking carers or family members to pick up heavier items for them, as McKie (1999: 535) identified. Therefore, an older person could supplement travel-based mobility with communicative mobility, and this would enable them to get all of their shopping home. In agreement with Urry's (2007) theory on the interdependence of mobility, this version of the conceptual framework presents the forms of mobility in one box with the interaction between them reflected through the use of dotted lines, rather than solid lines to separate them. This version of the conceptual framework also presents mobility, in its various forms, as the outcome. As will be examined later in this chapter, the findings of the empirical data collected for the Getting

Out and About Project have allowed the University researcher to test this version of the conceptual framework through the eyes of a sample of older people. This lead the University researcher to review and redesign the conceptual framework to include independence and social inclusion, as discussed in further detail in Chapter Nine (sub-section 9.2.2). The next sub-section brings together the arguments that justify the formation of the conceptual framework for mobility in later life within this thesis.

3.6.2 The rationale underpinning the development of the conceptual framework for mobility in later life

This sub-section outlines the rational underpinning the development of the conceptual framework for mobility in later life. As the literature review has highlighted, the concept of mobility lacks a comprehensive academic interpretation and understanding, and therefore warrants further research and exploration that will underpin its theoretical development (see, Chapter Three, section 3.3). Within the field of transportation studies the concept of mobility is not yet operational or quantifiable (Metz, 2000: 150). In order for the concept of mobility to advance, there needs to be a clear understanding of its meaning that will "allow valid empirical measurement which captures the key elements of this common human experience" (Metz, 2000: 150). This lack of theoretical understanding of the concept of mobility has led this research to develop the conceptual framework for mobility in later life. People are more mobile and travel further and faster than ever before (Cresswell, 2006), and this is reflected within post-modern contemporary society where everyday life is in a constant state of flux (Bauman, 2000). This fluidity is also visible within interpretations of mobility that are evolving alongside developments in the field of transportation and technology, such as virtual mobility (Kenyon et al, 2002). The conceptual framework is a contribution to the current academic debate around the notion of mobility (for example see: Cresswell, 2006; and Urry, 2007). The conceptual framework for mobility in later life feeds into the emerging paradigm shift that is taking place within the social sciences (Urry, 2007). The social sciences are becoming less about the social (society) and more about the mobile (mobility) (Urry, 2007: 17-18). This 'mobilities' paradigm refers to the establishment of a movement-driven social science. Attempts have been made to move transportation research out of its disciplinary fortress, such as a number of EPSRC funding bids with a social science component, including the EPSRC FUTURES project (Op. Cit) project which financed the studentship that funded this study (as outlined in Chapter One). However, presently research into transportation and communication systems is undertaken without much "interchange with the rest of the social sciences" (Urry, 2007: 19). Therefore, such research lacks the examination of the "complex social processes that underlie and orchestrate the uses of such transports" (Urry, 2007: 19). The

'mobilities' paradigm transcends this divide by focusing on the interchange between transportation and society (Urry, 2007: 20).

Mobility is becoming a complex, multi-disciplinary, multi-dimensional concept; and interpretations of it are undergoing radical transformations. This conceptual framework makes a contribution to advancing the theoretical understanding of mobility. It is relevant to the 'mobilities' paradigm (Urry, 2007), as, through understanding what mobility is, and what it means to particular sub-groups of the population, such as older people, it is possible to build up definitions of mobility that will help to develop the theoretical understanding of the concept. Access to transportation and travel is an important inclusionary aspect within the lives of older people. However, information and communication technology, such as the internet and mobile telephones, have transformed the way we communicate with one another. As has already been discussed within this chapter, this could reduce the need for physical travel, substituting or supplementing it with other forms of mobility, such as virtual, communicative or imaginative (Urry, 1999; Kenyon et al, 2002). The conceptual framework is intended to be a tool which will allow this study to initiate, and future research to develop, the theoretical understanding of the notion of mobility. This conceptual framework is the first of its kind to visually describe the factors that influence mobility and the interaction between these factors. Existing literature and data on the travel behaviour of older people takes a rather pessimistic view, focusing on the barriers that impact travel behaviour in later life, such as: cost, accessibility and availability, mobility constraints, and crime and safety. These barriers the Social Exclusion Unit (2006: 88-89) stated were the four main factors to effect travel in later life. However, this research intends to move this area forward by focusing on the motivations, importance and barriers to travel in later life. This holistic view of travel behaviour in later life, therefore, presents the positive and negative factors that impact on mobility in later life. In contrast to much of the existing literature, Metz (2000) argues that to gain a better understanding of mobility the following five categorises need to be explored: travel to achieve access to desired people and places; psychological benefits of movement, of getting out and about; exercise benefits; involvement in the local community; and potential travel (Metz, 2000: 150).These categories highlight the 'good' aspects of transport of which the psychological benefits and links to community involvement are particularly relevant for older people (Metz, 2000: 150). An aim of this research is to highlight this issue by demonstrating the importance of transportation, travel and mobility in the lives of older people today. It is envisaged that, by taking a holistic view of both the facilitators and the barriers to travel-based mobility in later life, this research will provide valuable insight into the lives of older people today. This is not only essential in understanding the role of transportation and travel in older people's lives, but will also provide a way forward for future research and the development of policies in this area. The following sub-section

sets out how the empirical data will be used to test this version of the conceptual framework.

3.6.3 How the conceptual framework for mobility in later life will be further developed with the findings of the empirical data collection

This sub-section explains how the conceptual framework for mobility in later life will be developed further, in accordance with the findings of the Getting Out and About project. Specifically the findings of research question 1b 'what factors impact upon the travel-based mobility of older people?' are relevant to the progression of the conceptual framework. Thus, the development of the conceptual framework influenced the design of the data collection instruments for the Getting Out and About project, through the inclusion of questions around the factors that impact mobility in later life. Ultimately, this informed the direction of research question 1b, as well as assisting the development of the conceptual framework for mobility in later life. During the data collection for the Getting Out and About project, the discussion within the interviews enabled the University researcher to clearly visualise the relationship between the conceptual intersections, through the eyes of the sample of older people. This lead to the remaining conceptual intersections of social inclusion and independence being added to the second and final version of the conceptual framework (presented in Chapter Nine, Figure 11). Obtaining the views and experiences of older people themselves meant that it is possible to assess the relevance of the conceptual framework presented in this chapter (Figure 4). This, in turn, allowed for the validation and/or augmentation of the factors that impact mobility as outlined in the literature review. The data from the Getting Out and About project provided examples of the experiences of older people and the factors that impact their travel-based mobility. In accordance with the research aims and objectives (as set out in Chapter One), the Getting Out and About project asked specific questions around the notion of travel-based mobility. However, throughout the interviews, where appropriate, the University researcher lead the discussion onto other forms of mobility, for example virtual mobility fitted into discussions about information and communication technology, as discussed in Chapter Nine.

3.7 Evaluation of the selected trajectory to connect the thematic topics of transportation, technology and older people

This section looks reflexively at the trajectory chosen within this research to connect the thematic topics of transportation, technology and older people. This section is divided into two sub-sections. The first sub-section, 3.7.1, summarises the existing links between the thematic topics of transportation, technology and older people, and the second, 3.7.2, examines how the topics were synthesised within this study.

3.7.1 The existing links between the thematic topics: Transportation, technology and older people

The three literature review chapters (two, three and four) show the existing intersections between the thematic topics of transportation, technology and older people. Predominantly these existing intersections link two out of the three topic areas. However, there is little evidence of research, from the perspectives of older people, that connects all three. Chapter Two shows that research is starting to acknowledge that the transportation needs and requirements of older people are different from the general population, this links the topics 'transportation and older people'. Chapter Two also looked at perceptions and the use of information and communication technology within later life, relating 'technology and older people'. Research around technology and older people is developing rapidly. Such research focuses on a variety of aspects, including, access and use of technology, and the barriers that older people experience. The difficulty in this field is that research can quickly become outdated because of the speed at which technology is developing. Some supporters of inclusive design advocate for designers to involve older people or people with disabilities throughout the design process, arguing that, the resulting products and services will better match their needs and requirements (for example see, Eisma et al, 2004). There is a lack of older people's perspectives in research around 'transportation and technology'. The literature review demonstrates that there is limited existing literature that focuses the thematic topics of transportation, technology and older people. The key challenge for this study was the synthesis of these thematic topics. In order for the study to achieve that challenge, it was necessary to explore further topics and concepts that intersected between the thematic topics. As discussed throughout the literature and policy review chapters, the literature search revealed social inclusion, independence and mobility as intersecting between the thematic areas of transportation, technology and older people. This approach to the synthesis of the thematic topics is discussed in more detail in the next sub-section.

3.7.2 Synthesis of thesis topic area and disciplines: Defining the key intersections

The intention of this research is to move beyond the existing intersections and link all three of the thematic topics transportation, technology and older people, using a qualitative approach. Figure 5 demonstrates the synthesis of the thesis topic area. The diagram has three sections. In the first section are the thematic topics of transportation, technology and older people. Arrows are used to show the direction of the relationships between the concepts. It is clearly visible that this research looks at older people's perspectives of issues linked to the topics of transportation and technology. The synthesis of the thematic topics of transportation, technology and older people, in the context of this study, is based upon utilising the concepts of: social inclusion; independence; and mobility. These are placed at the bottom of the diagram, the third layer or ends. The second layer of the diagram shows the topics of: accessible travel information and services; choice and control; and virtual mobility. These are examples of the means to achieving the ends, and have each been explored with the participants during the empirical data collection. Both phases of the empirical data collection focus, from different perspectives, on the inclusive potential of information and communication technology in later life. The MAPPED project (Op. Cit.) explored accessible travel information and services', and the Getting Out and About project was concerned with virtual mobility in later life. This demonstrates the inclusive 'potential' of information and communication technology. However, not all older people desire to, or are able to, make use of such technology and, therefore, these are aligned in with the notion of choice and control in later life.

Figure 5: Diagram showing the synthesis of the thesis thematic topics transportation, technology and older people.


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                        ┌─────────────────┐
                        │  OLDER PEOPLE   │
                        └─────────────────┘

┌──────────────────┐                      ┌──────────────────┐
│  TRANSPORTATION  │                      │    TECHNOLOGY    │
└──────────────────┘                      └──────────────────┘

                    ◇ CHOICE & CONTROL ◇

                    ◇ ACCESSIBLE
                      INFORMATION &
                      SERVICES ◇

                    ◇ VIRTUAL MOBILITY ◇

    ⬡ MOBILITY ⬡    ⬡ INDEPENDENCE ⬡    ⬡ SOCIAL
                                           INCLUSION ⬡
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┌─────────────────────────────────────┐
│                 KEY                  │
│   ┌──────┐                           │
│   │      │   THEMATIC AREAS          │
│   └──────┘                           │
│   ◇          MEANS                   │
│   ⬡          ENDS                    │
└─────────────────────────────────────┘
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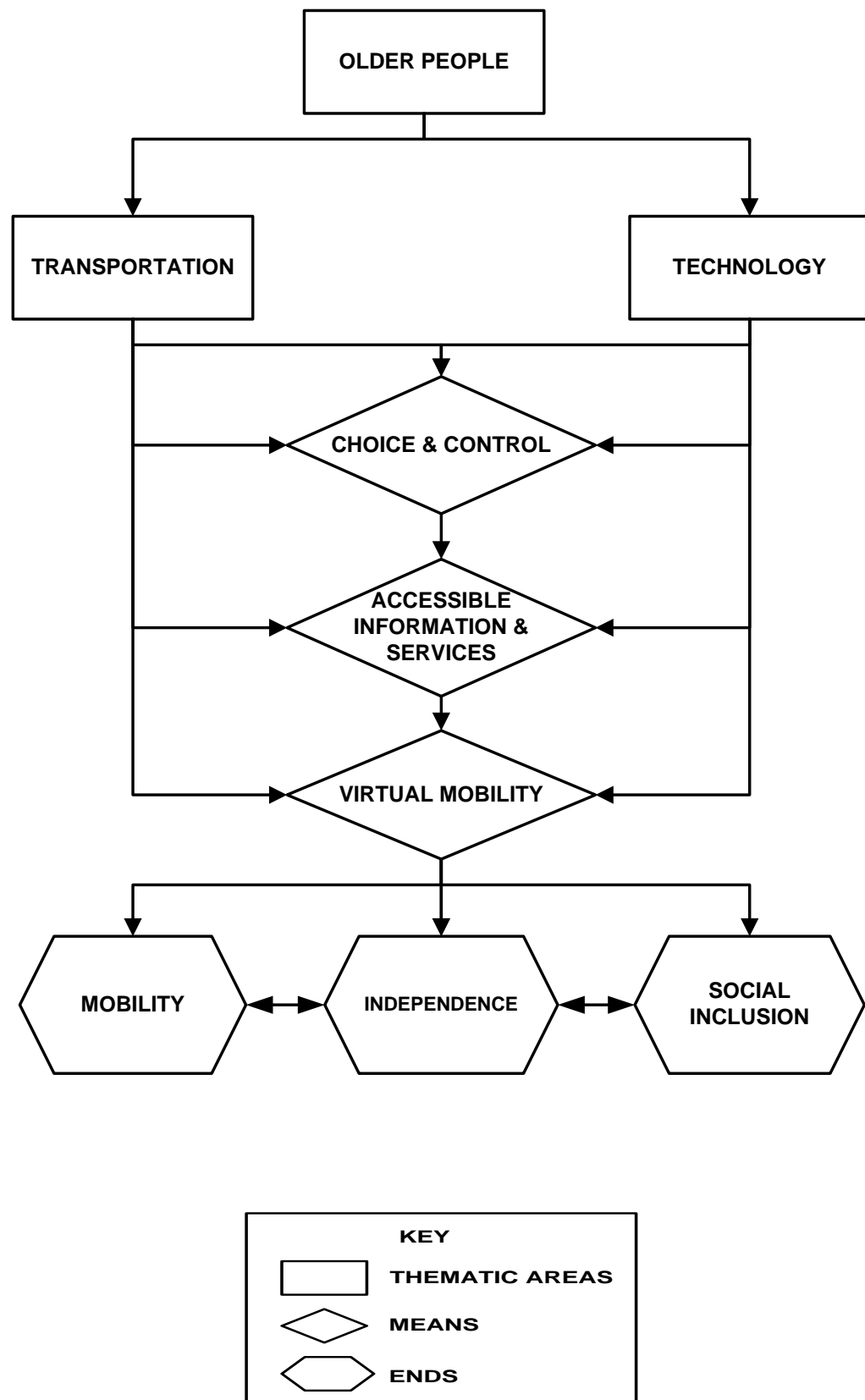
3.8 Summary

This is the second of the three literature review chapters, which has revealed what the existing literature informs about the conceptual intersections of social inclusion, independence and mobility in later life. The chapter has outlined the theoretical development of the concepts of social inclusion, independence and mobility, as well as the meanings that older people give to the concepts. Alongside this, the analysis of the inter-relationships between the meanings that older people give to the concepts of social inclusion, independence and mobility in later life, has highlighted that older people want to avoid social isolation by being mobile and independent in later life. It has also recognised the individual differences of older people. There is a lack of academic understanding and theoretical development with respect to the concept of mobility, and therefore this chapter has discussed the development of the concept of mobility through a conceptual framework for mobility in later life. This research puts a social science lens over the field of transportation studies in order to highlight the issues that are pertinent to older people when undertaking various forms of mobility. The rapid growth of transportation and communication technology means that mobility is increasingly being perceived as a multi-dimensional concept that requires further academic exploration. The forms of mobility are now changing in response to transportation and technological innovations. This thesis argues that there are seven forms of mobility, namely: physical, virtual, assistive, travel-based, communicative, imaginative, and immobility. In order to develop academic understanding and the theoretical development of mobility this research produces a conceptual framework for mobility. The following chapter is the last literature review chapter, and focuses on the policy framework that underpins this thesis.

Chapter 4: Literature review - Policy Framework

This is the third and final literature review chapter. The aim of this chapter is to present an overview of the policy debates and issues that were prioritised by the previous British Government, in connection with the thematic topics of transportation, technology and older people, during the timeframe of this review. Where appropriate there are wider references to European level policy. It is worth noting here that since writing this literature review there has been a change of government and devolved administrations in Britain. Following the General Election in May 2010, Britain now has a Coalition government made up of members from the Conservative and Liberal Democrat parties and a Conservative Prime Minister[21]. Taking into account the timing of this change, in line with the writing of this thesis, it is only possible to state that at the current point in time it seems as though the strategies outlined in this chapter are still being followed. Although, there is a smaller public sector and less finance to fund them, which may mean they are subject to change in the future. The policies discussed throughout this thesis are English policies. Policy in Wales generally follows England, although in Scotland it usually takes a different course. This chapter is divided into eight sections. The first section, 4.1, delineates the policy intersections between the thematic topics of transportation, technology and older people. This is followed by, section 4.2, which provides an overview of the ageing strategy outlined by the previous government in England in light of the demographic changes of population ageing; with particular reference to the introduction of cross-government strategies that highlighted the need for joined up policymaking, services and healthcare. The third section of the chapter, 4.3, looks at the future reform of adult health and social care in line with the increasing numbers of older people. The fourth section, 4.4, introduces the policy agenda concerned with maintaining independence for as long as possible into later life, and the emerging thinking around living independently in later life; the personalisation of services; and developments in assistive technology. More precisely sections, 4.5 and 4.6, explore the policy topics of social exclusion and inclusion in later life. Section 4.5 focuses on the advancement of policies that tackle inequalities and social exclusion, and section 4.6 on the key transportation policies that have developed alongside debates concerned with tackling social exclusion in later life, in recognition of the inclusive potential of transportation. The recent development of a more sophisticated understanding of digital exclusion and the introduction of digital inclusion strategies by the previous government is examined in section 4.7. The final section of this chapter, 4.8, presents a summary of the key points.

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[21] http://www.guardian.co.uk/commentisfree/2010/may/12/conservative-liberal-democrat-coalition

4.1 The policy intersections between the thematic topics

This chapter explores public policy connected to the thematic topics of transportation, technology and older people, and the intersections of social inclusion, independence and mobility in later life. The demographic changes associated with the process of population ageing mean that ageing issues are high on recent policy agendas. The pertinence of the topics of social inclusion and independence in later life, within existing policy documents and debate, is highlighted throughout this chapter. The aim of this chapter is twofold, firstly, providing a snapshot of the policy background to this research, and secondly, highlighting how the underlying debates and issues that were outlined in the policy documents offer intersections between the thematic topics of transportation, technology and older people. Several policy areas that intersect between the thematic topics of transportation, technology and older people, are visible within the policy documents and debates during the timeframe of this review. These policy areas are: social exclusion and inclusion in later life; transportation in later life; the ageing strategy; independence, well-being and choice in later life; adult health and social care; and digital exclusion and inclusion in later life. They are set out chronologically in the timeline below (see, Figure 6). Throughout the chapter the policy areas set out within the timeline are discussed, however, it is not structured in the chronological order determined by the timeline. This is due to the fact that the chapter focuses on the wider policy issues and debates that cut across these policy areas, as set out later in this sub-section in Table 3, rather than the chronology of these debates. The flow chart below (see, Figure 7) illustrates the way in which the policy review was conducted. There were four key stages of the policy review. The initial search led to the identification of many key policy documents and reports. A list of these documents and reports is outlined in Appendix 2, as only those that are central to this research are discussed within the thesis.

Figure 6: A timeline showing the intersecting policy areas that underpin this research, and the dates in which they were prevalent in government documents and debates between 1997 and 2009.
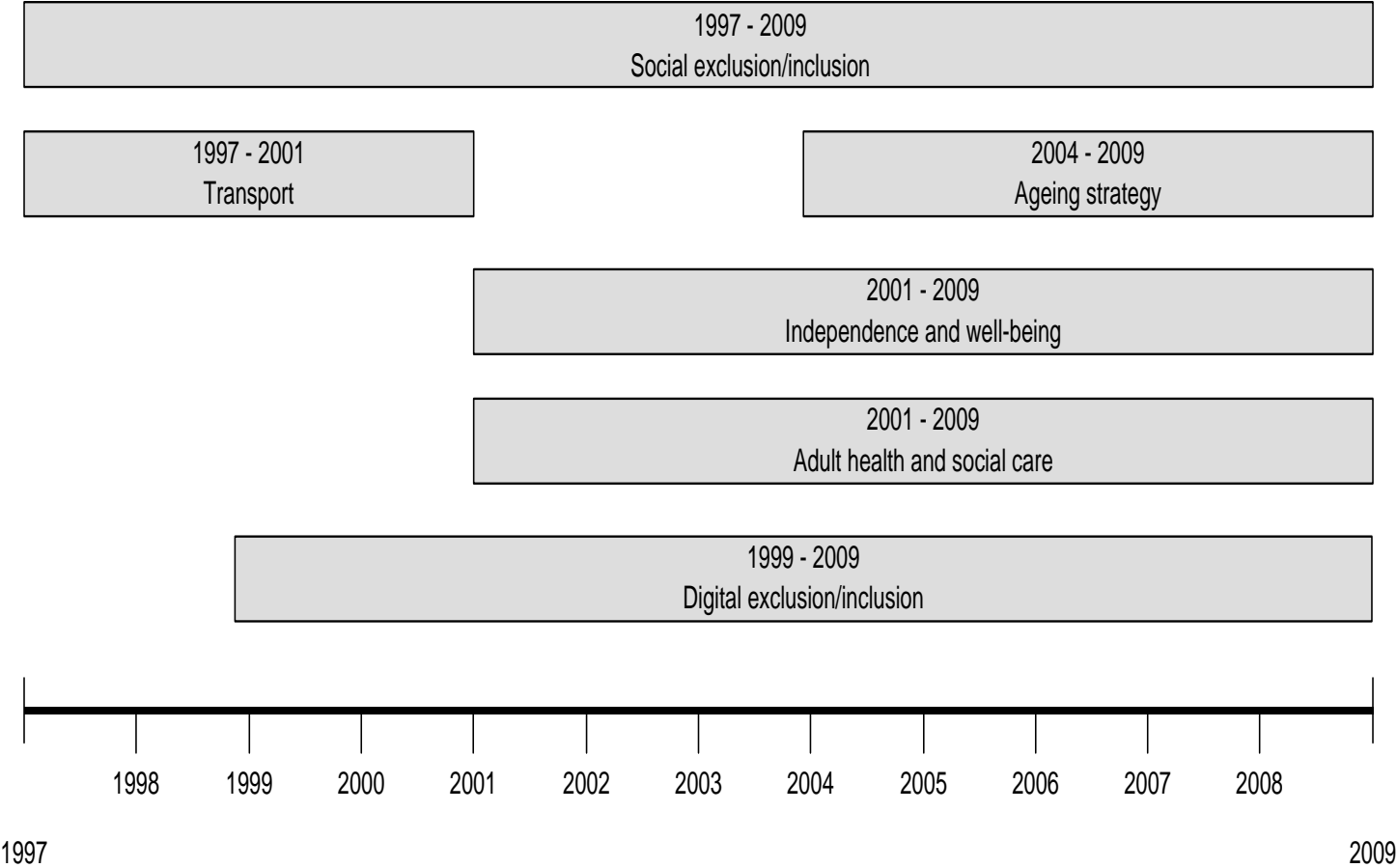
Figure 7: Flow chart showing the key stages of the policy review process

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┌─────────────────────┐
│   Literature/policy  │
│       search         │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│ Key policy documents │
│     and reports      │
│  (see, Appendix 2)   │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│  Intersecting policy │
│        areas         │
│   (see, Table 3)     │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│  Fundamental issues  │
│     and debates      │
│   (see, Table 3)     │
└─────────────────────┘
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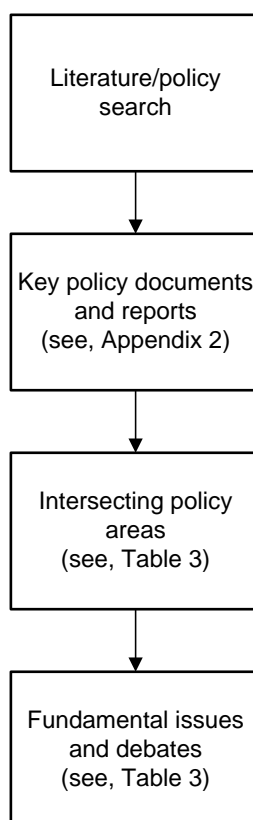
The review of the policy documents and reports was undertaken thematically, whereby the key themes were highlighted during the process of thematic analysis (as discussed in more detail in Chapter six, sub-section 6.3.5). These themes were then classified into the intersecting policy areas and fundamental issues and debates, as determined below in Table 3. Setting out these wider debates within a table enables the reader to begin to visualise the connections between the policy areas and the thematic topics of transportation, technology and older people. However, Table 3 does not show the intricacy of the intersections between the policy areas, policy issues and debates, and the thematic topics. Many of the issues and debates impact a number of the intersecting policy areas, for example, the introduction of free bus travel for all older people aged 60 years old and over and people with disabilities in April 2008[22], has social and economic ramifications for transportation policy and ageing policy. It is also linked to strategies around independence, well-being and choice, and social inclusion in later life. Understanding these intersections between the thematic topics and policy areas, issues and debates helped to define the research aims, objectives and questions, and thus narrow the focus of this study. The remaining chapter headings are, therefore, based upon the policy areas and fundamental issues and debates that connect the thematic topics of transportation, technology and older people, which were identified during the thematic analysis of the policy documents and reports.

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[22] See: http://www.dft.gov.uk/pgr/regional/buses/concessionary/

Table 3: Table showing the policy areas that intersect between the thematic topics of transportation, technology and older people, and the key issues and debates identified in the policy documents and reports.

Policy areas that intersect between the thematic topics of transportation, technology and older people:	Policy issues and debates identified in the policy documents and reports:
– Ageing strategy – Adult Health and Social Care – Independence, well-being and choice – Social exclusion/ inclusion in later life – Transportation – Digital exclusion/ inclusion in later life	– Demographic changes linked to population ageing – Accessible information and services – Concessionary fares (including introduction of free bus travel for people aged 60 years old and over and people with disabilities) – Age discrimination – Dignity and respect in later life – Assistive technology – ICT skills/courses for older people – ICT public access points – Improved public services for older people – Joined-up services and care – Specialised services for key conditions in later life – Key role of local authorities – Digital access to information and services – Online versus offline communities – Personalisation of services: Individual care budgets and direct payments – Prevention rather than intervention – A louder 'voice' for older people – Living independently in later life – Remaining in own home for as long as possible – Better homes for older people – Neighbourhoods and communities – Healthy and active ageing – Seven dimensions of independence – Choice and control – Quality of life – Older people giving back to society through volunteering and paid/unpaid care

4.2 Ageing strategy

The demographic changes of population ageing came to the fore of the political agenda in England in 1999, when the Office of National Statistics released the report 'Social Focus on Older People' (ONS, 1999). This report was updated in 2005 and renamed 'Focus on Older People'[23] (ONS, 2005). The 'Focus on Older People' report presented empirical data from several large scale surveys including the 2001 Census, and the 2002 English Longitudinal survey of Ageing. The report (ONS, 2005: xv) highlighted the wide range of issues that affect the lives of older people, focusing on: demographic profile; family and living arrangements; housing; labour market; health and well-being; health and social care; economic resources; and lifestyles and participation. Since 1999, several policy initiatives with the potential to improve the quality of life of older people have been introduced, in response to the demographic changes connected to the process of population ageing (Audit Commission, 2004a: 8). This demonstrates the sheer number of policy areas that impact upon quality of life in later life, some examples include: housing and living arrangements (Barnes et al, 2004); health and social care (DoH, 2001; ADSS, 2003); neighbourhoods and communities (Scharf et al, 2005; CLG, 2008a); wealth and income (Pensions Commission, 2005); and transportation (DfT, 2001). As well as the recognition of the fact that these issues are interrelated, and thus intersect between government departments (Audit Commission, 2004a). It became evident that joined up policymaking and integrated services would be necessary to be able to implement an effective ageing strategy (Audit Commission, 2004a).

4.2.1 Joined up policymaking and integrated services

The first cross-government ageing strategy, 'Opportunity age: Meeting the challenges of ageing in the 21st century', was released in March 2005 (DWP, 2005). This strategy focused specifically on the issues facing people as they live longer, healthier lives (Audit Commission, 2004a). It was the first strategy of its kind to deliver the values of active independence, quality and choice for older people (DWP, 2005: xiii). The overall aim of the strategy was to end the dependent perception of older people, ensure that longer life is healthy and fulfilled, and that older people are able to participate fully within society (DWP, 2005). The strategy focused on three key areas: work and income; active ageing; and services. It set out a "coherent framework for developing policies, and the principles that the government believes must underpin progress" (DWP, 2005: xiii). Work and income focused on making retirement comfortable; active ageing on enabling older people

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[23] The overview report was originally published in 2004, the extended version, with more comprehensive analysis, was published in 2005.

to play a full and active role in society; and the services strand promoted independence and control as people grow older, despite the health problems that can occur throughout old age (DWP, 2005). Steps for how national and local government could deliver the strategy, such as local authorities responding to ageing by engaging older people in decision-making, were also set out within the strategy (DWP, 2005: 65-79). This was the first time that any of the government departments in England had come together to focus jointly on a number of issues (DWP, 2005: xiii), which reflects the significance and cross cutting nature of ageing issues. At the same time policy on a global scale was developing in a similar vein to that of England; as the move in England towards a clearly defined strategy that allowed older people a full and active role within society was echoed on a global scale. For example, the World Health Assembly, the supreme decision-making body of the World Health Organization (WHO) established a set of policies in May 2005 that would support active and healthy ageing, which in turn strengthened the national interventions (World Health Assembly, 2005: 91-93).

Other policy areas have also called for joined up services for older people, including the report 'Sure Start to Later Life: Ending Inequalities for Older People' (Social Exclusion Unit, 2006). In addressing the issue of social exclusion in later life, the report outlined older people as a valuable societal resource, giving back to society through volunteering and the unpaid care of family and friends (Social Exclusion Unit, 2006). The report set out a framework based upon three commitments: "progressive personalised services tailored to need; social justice; and economically efficient services" for building "comprehensive services that can empower older people and improve quality of life" (Social Exclusion Unit, 2006: 9). On the back of this, in 2006, the previous government implementation the Link-Age Plus pilot scheme which evaluated the success of services for older people focused on "local need" through the trial of "integrated joined up services for older people accessible via a single gateway" (DWP, 2004: 5). The success of these pilots led to a review of the cross-government ageing strategy 'Opportunity Age' (DWP, 2005) in 2009, which was presented in the discussion paper 'Preparing for Our Ageing Society' (DWP, 2009). This resulted in the publication of the second cross-government ageing strategy 'Building a Society for All Ages' (HM Government, 2009); a strategy that outlined new measures to prepare for the demographic changes of population ageing. Including, digital inclusion projects that would support the use of digital technologies by "encouraging people to stay in touch with their families" (HM Government, 2009: 26-28), and a new UK Advisory Forum on Ageing for advising ministers, at national level, on further steps the government and partners need to take to improve well-being and independence in later life (HM Government, 2009: 10). To increase participation in social activities that help individuals to stay active and involved in later life, the strategy also outlined the introduction of the 'Active at 60 package' (HM Government, 2009: 8). The aim of the

'Active at 60 package' was to provide individuals "approaching their 60th birthdays with information about their entitlements and opportunities, such as the free swimming initiative" (HM Government, 2009: 8). This included the use of smartcard technology in the form of an "all-in-one card" that would enable people aged 60 years old and over to access a range of local government services and activities, such as public library, public transportation and swimming (HM Government, 2009: 8). The publication of specific government strategies to prepare for the demographic changes of population ageing, in England, highlights the prominence of ageing issues on the political agenda. As this sub-section has explained, many of these ageing issues intersect between existing government departments, thus warranting cross-government consideration. However, they are also policy areas in their own right, therefore those that are relevant to this study are considered in the sub-sections below. Given the amount of policy areas, and issues and debates discussed in this chapter, these sub-sections provide an overview of recent development in each area. Some critical reflection on the intersections between these policy areas, and issues and debates, is then presented in the summary section (4.7).

4.3 Preparing for the future: The reform of adult health and social care

This section explores the government approach to the reform of adult health and social care, in response to the demographic changes of population ageing. The 'National Service Framework for Older People' (NSF) was the first comprehensive strategy to underline the need for more effective integrated health and social care services for older people, and the promotion of independence and well-being in later life (DoH, 2001: i). The NSF was a 10 year programme of action, released in 2001, to link services to support independence and promote good health (DoH, 2001: i). The NSF outlined specialised services for key conditions, and "changes in culture so that all older people and their carers are always treated with respect, dignity and fairness" (DoH, 2001: i). The NSF set out eight standards for the integration of services for older people on a national scale. These eight standards were concerned with the following: standard one, rooting out age discrimination; standard two, person-centred care; standard three, intermediate care; standard four, general hospital care; standard five, stroke; standard six, falls; standard seven, mental health in older people; and standard eight, the promotion of health and active life in older age (DoH, 2001). Since the NSF, other policy documents and reports have been produced in order to prepare future adult health and social care practice for the demographic changes of population ageing (for example: ADSS, 2003; LGA, 2004; HM Government, 2008; APPLGG, 2008; and DoH, 2009a). A number of documents and reports have fed into the debate to reform adult care services for the 21st Century, which are explored here. In 2003, a joint discussion document was released by the Association of Directors of Social

Services and Local Government Association, entitled 'All Our Tomorrows: Inverting the triangle of care' to promote wider discussion on the future of health and social care for older people (ADSS, 2003). This was followed by a government announcement that a new vision for adult social care would be published. In response, in 2004, the National Health Service, the Association of Directors of Social Services and the Local Government Association published the report 'Our future in our hands: putting people at the centre of social care' (LGA, 2004). Amongst other things, this paper (LGA, 2004) argued that well-being, independence and choice were essential in the development of successful future adult social care.

In 2008, the previous government passed the 'Health and Social Care Act 2008', which aimed to enhance the safety and quality of care and improve public health (HM Government, 2008). The 'Health and Social Care Act 2008' outlined specific measures including: establishing the Care Quality Commission, a new health and adult social care regulator with powers to inspect, investigate and intervene where care providers are failing to meet safety and quality requirements; reforming professional regulation; updating existing public health protection legislation; and strengthening the protection of vulnerable people using residential care by ensuring that any independent sector care home providing care on behalf of a local authority is subject to the Human Rights Act (HM Government, 2008). The key role and contribution of local authorities in promoting the quality of life of older people, was highlighted in the All Party Parliamentary Local Government Group report 'Never Too Late for Living: Inquiry into services for older people' (APPLGG, 2008). The report focused on setting out key recommendations to address the problems in services for older people (APPLGG, 2008). The previous government's vision for a new care and support system based on a National Care Service that is fair, simple and affordable, was set out by the Department of Health in the 2009 Green Paper 'Shaping the Future of Care Together' (DoH, 2009a). The Green Paper outlined six elements that people should expect from the new service: prevention services; national assessment; a joined up service; information and advice; personalised care and support; and fair funding (DoH, 2009a). Although the funding of this new service was highlighted in the Green Paper as a key issue, with three proposed options for consideration: partnership between individuals and the state sharing costs; in addition to the partnership model, an insurance system working with either the private insurance market or a state scheme to cover additional costs; and a comprehensive model whereby everyone over retirement age with resources to do so would be required to pay into a state insurance scheme enabling everyone in later life to have free care when they need it (DoH, 2009a). It is not yet known if the new Coalition government will adopt these proposals or create others. However, the reform of adult health and social care will not, on its own, be enough preparation for the demographic changes of population ageing. There

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are other policy areas, and issues and debates that are beginning to be considered in order to deal with the rise in the numbers of older people within society, as the rest of the chapter considers.

4.4 Maintaining independence, well-being and choice in later life

The demographic trends associated with the process of population ageing have led to a number of policies that focus on maintaining independence, well-being and choice in later life (for example: HM Treasury, 2007a; and LGA, 2004). These policies promote the retention of independence, for as long as possible, into later life (Audit Commission, 2004a: 8). The topic of independence in later life intersects between government departments and the thematic topics of this thesis; for example, housing, transportation and technology intersect when the ability of an older person to remain in their own home for as long as possible is facilitated through such means as assessable transportation and assistive technology. The maintenance of independence in later life has individual and societal level benefits. From a micro perspective maintaining independence in later life is associated with quality of life and well-being. For example, the Audit Commission (2004a: 7-8) suggest that there are seven dimensions to independence in later life: housing and home; neighbourhood; social activities; social networks, keeping busy; getting out and about; income; information; health and healthy living. These seven dimensions of independence, according to the Audit Commission (2004a: 7-8), are recognised as "representing the areas of an older person's life that need to be working effectively to allow them to remain independent with a positive quality of life". The demographic changes of population ageing have, and will continue to raise the issue of maintaining independence in later life from a macro perspective. As discussed in the introduction, the growth of the proportion of the population who are aged 65 years old and over has given rise to a debate over the societal implications of this ageing of the population (Metz, 2000: 149). Maintaining independence in later life is a longer term government reform (HM Treasury, 2007a, 21) that could, potentially, lead to financial savings especially in the provision of health and social care. For example, the Local Government Association stated that independence, well-being and choice are essential in the development of successful future adult social care (LGA, 2004).

Since the publication of 'Opportunity Age' (DWP, 2005), a number of policies in England have developed these proposals for maintaining independence and well-being in later life. This included the Green Paper, 'Independence, Well-being and Choice: Our vision for the future of social care for adults in England', which outlined plans for the radical reform of

adult social care in England (DoH, 2005a). Outlining measures such as the personalisation of services through the introduction of individual budgets for older people to buy the individual social care or other local authority services that they need (discussed in more detail later in this chapter) (DoH, 2005a). This was followed, in 2006, by the White Paper, 'Our Health, Our Care, Our Say: A new direction for community services', in which the Department of Health outlined the future plans for the whole health and social care system, including a shift in the way services are delivered (DoH, 2006a). The White Paper specified four main aims: "Health and social care services will provide better prevention services with earlier intervention; people will have more choice and a louder voice; more will be done to tackle inequalities and improve access to community services; and there will be more support for people with long-term needs" (DoH, 2006a: 7-8). An update on the progress of implementing this White Paper was released later in 2006, entitled, 'Our Health, Our Care, Our Say: Making it happen' (DoH, 2006b). This commented on some of the progress being made, including the trialling of individual budgets for social care users, the development of new approaches to prevention, and shifting care (DoH, 2006b). In 2007, the HM Treasury released the report, 'Public Service Agreement 17 (PSA): Tackle poverty and promote greater independence and wellbeing in later life', the aim of which was to ensure that the needs of the older population were considered within policy (HM Treasury, 2007a). The PSA set out the outcomes the previous government sought to achieve, during that Comprehensive Spending Review period, in order to promote improvements in independence and well-being in later life for the longer term (HM Treasury, 2007a). This was followed by, 'Putting People First: A shared vision and commitment to the transformation of Adult Social Care', which was also released in 2007 by the HM Treasury (HM Treasury, 2007b). This revealed a "shared ambition" across government to "put people first through a radical reform of public services", which would enable people to live their own lives as they wish, "confident that services are of high quality, are safe and promote their own individual needs for independence, well-being and dignity" (HM Treasury, 2007b: 1). Alongside this recognition of the individual and societal benefits of maintaining independence in later life, the previous government also discussed a number of specific measures that would help maintain independence in later life. Three of these measures were living independently in later life, the personalisation of services, and assistive technology, and are explored in the following sub-sections.

4.4.1 Living independently in later life

A report by the Department for Work and Pensions, 'Independent living in later life' (Barnes et al, 2004) released findings from a qualitative study which explored older people's understanding of independence, and how service needs and behaviour in approaching services impacted their ability to live independently (Barnes et al, 2004).

Amongst the other findings, the authors found that during qualitative individual interviews with one hundred and eighteen older people, "when asked about the most valued aspects of their independence, pensioners repeatedly emphasised the importance of independence and continuing to live in their own home" (Barnes et al, 2004: 29). In 2006, the Office for Disability Issues released a five year strategy for independent living, 'Independent living: A cross-government strategy about independent living for disabled people' (ODI, 2006). The aims of the strategy were for: "disabled people, including older disabled people, who need support to go about their daily lives will have greater choice and control over how support is provided; disabled people, including older disabled people, will have greater access to housing, education, employment, leisure and transportation opportunities and to participation in family and community life" (ODI, 2006: 3). In 2008, the Communities and Local Government department set out a plan to provide better homes for older people and increase their housing options beyond care homes and sheltered housing entitled: 'Lifetime Homes, Lifetime Neighbourhoods: A national strategy for housing in an ageing society' (CLG, 2008a). Both strategies set out to help older people live independently in their own homes for as long as possible, by providing a "national housing and advice information service linked with local housing information services", introduce new "rapid repairs and adaptation services", and "increase funding for the Disabled Facilities Grant" (CLG, 2008a: 9-14).

4.4.2 The personalisation of services

The 'personalisation' of services is the policy approach to enhancing choice and control in later life. The Wanless (2002) report 'Securing Our Future Health', highlighted the need to ensure that older people remain healthy and active for as long as possible into later life. The report (Wanless, 2002) suggested that the implementation of means tested individual care budgets, with payments being paid directly to the individual, was a way for older people to retain choice and control. However, it sparked controversy and media attention, as the idea of putting individuals in the latter stages of life in charge of their own care was not considered appropriate in all circumstances (Wanless, 2002). Despite this, the previous government argued that they wanted to put people first by allowing people to live their lives how they wish (Wanless, 2002). In 2005, a framework for the implementation of these direct payments and individual budgets was set out in the Green Paper, 'Independence, well-being and choice' (DoH, 2005a). This was later supported by the White Paper, 'Our health, our care, our say' in 2006 (DoH, 2006a). In 2006, the King's Fund commissioned a review of the challenges facing social care, as well as outlining the resources needed to meet them over the next twenty years. The results were published in a report 'Securing Good Care for Older People (Wanless, 2006). This report (Wanless, 2006) estimated the contribution of demographic pressures and the need to improve

outcomes, due to the significant increase in the costs of older people's social care in the future. Funding proposals set out in the report include, restricting means-testing for personal care and a free package of basic care, topped up with personal contributions that are matched by the state (Wanless, 2006). In 2007, the previous government noted that in order for the adult social care sector to cope with the ageing of the population, it would need to work across agendas with users and carers to transform the experience of local support and services (HM Treasury, 2007b). This more rounded approach to adult social care was then outlined in, 'Putting people first: a shared vision and commitment to the transformation of adult social care' (HM Treasury, 2007b).

4.4.3 Assistive technology

Assistive Technology is any product or service designed to enable independence for disabled and older people[24]. Assistive technology can provide support for older or disabled people, whilst at the same time alleviating the pressure of the level of social care required by that individual (Audit Commission, 2004b). Many health care policies and initiatives recognise the potential of assistive technology for facilitating independence and thus improving the quality of lives of older or disabled people, such as: the 'National Service Framework for Long Term Conditions' (DoH, 2005b) and 'Our Health, Our Care, Our Say' (DoH, 2006a). Research and development around assistive technology in England is an area of rapid growth. For example, in July 2004 a Preventative Technology Grant was announced, this meant an investment of £80 million was injected into the "design and delivery of health, social care and housing services and prevention strategies to enhance and maintain the well-being and independence of individuals" (DoH, 2004: 1). In England, the majority of research into assistive technology is funded by a mixture of private technological companies, the European Commission, and the government through the Department of Health and a number of Research Councils (for an overview of projects being undertaken between 2008-2009 see, DoH, 2009b: 55-102). The case study MAPPED project (Op. Cit.) being drawn upon within this study is an example of a project funded by the European Commission. Given the rapid speed of technological advances, the potential of assistive technology is great. Further developments in assistive technology mean that the field will continue to impact the lives of generations both now and in the future. An example of this is the current move towards pervasive technology where the environment monitors the situation rather than the person[25], for instance, a fridge alarm that is activated if the fridge door is left open for an unusually long period of time. Three policy measures for maintaining independence have been considered in this section; living

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[24] Definition defined at a King's Fund consultation meeting in March 2001, see:
http://www.fastuk.org/about/definitionofat.php
[25] For example, see the projects undertaken by: http://www.pervasive-technology-lab.org/Default.aspx

independently in later life, the personalisation of services, and assistive technology. The following sections will look at the other policy areas that intersect between the thematic topics: social exclusion and inclusion in later life; transportation in later life; and digital exclusion and inclusion in later life.

4.5 Tackling inequalities: social exclusion and inclusion in later life

Similar to trends in policy within the European Union, the issue of social exclusion became visible within UK policy in 1997, when the previous government created the Social Exclusion Unit (Preston and Raje, 2007: 151). Policy debate in this area focuses upon the range of issues which contribute towards the experience of social exclusion, including poverty and income inequality, and loss of access to life chances (Scharf et al, 2000: 2). Due to a mixture of political and economic reasons, policy initiatives in this area have tended to focus on groups such as children, young families, and the unemployed (Scharf et al, 2000: 2). Although, more recently these debates have recognised the ways that social exclusion affects older people (such as, Phillipson and Scharf, 2004; Social Exclusion Unit, 2006). In 2004, the Social Exclusion Unit commissioned four reviews to help assess the impact of policy across all life stages; one of which was the report, 'The impact of government policy on social exclusion among older people: A review of the literature for the Social Exclusion Unit in the Breaking the Cycle series' (see, Phillipson and Scharf, 2004). This report reviewed the literature concerned with the impact of government policy on social exclusion amongst older people (Phillipson and Scharf, 2004). Through an examination of the background to issues relating to social exclusion in old age, by identifying the "range of policies used to tackle exclusion, and considering evidence about the impact of policies designed to integrate older people into social and community life" (Phillipson and Scharf, 2004: 6). It stated that the previous governments "development of policies to combat social exclusion" formed "part of a wider debate about the meaning of social exclusion as a concept, and in particular the relevance of its application to groups such as older people" (Phillipson and Scharf, 2004: 6). However, low-income households remain excluded due to the "lack of access to essential services (differences by income in household access to essential services, including insurance, internet, and transport)", which is "an avoidable penalty of poverty" (Parekh et al, 2010: 6). As stated at the beginning of this chapter, the challenges facing the Coalition government are taking shape at the time of writing this thesis, undoubtedly though, social inclusion and exclusion will remain topics of concern. Within the previous chapter the concepts of social exclusion and inclusion were examined, therefore the discussion here focuses on their use at policy level. This section begins by highlighting the introduction of concern around poverty and social exclusion on a European level, whilst the rest of the section then

narrows in to focus on the specific development of policy that connects transportation with social exclusion and inclusion. The following section, 4.6, then explores the introduction of digital inclusion strategies.

4.5.1 The recognition of social inclusion at the European level

Social exclusion has been a concern of the European Commission since the social action programme of 1974 (Aust et al, 2001: 3). In 1989, the European Commission was asked by the Council of Ministers to examine policies to combat social exclusion (Levitas et al, 2007: 19). In 1992, the previous UK government joined the European Union by signing the Maastricht Treaty (Levitas et al, 2007). However, in 1994 the Member States prevented the fourth anti-poverty programme, arguing that the "adequate political level to deal with poverty was the national level" (Aust et al, 2001: 3). Social exclusion was finally accepted as a European Union policy area in 1997 with the "integration of the Social Protocol into the Treaty of Amsterdam" (Aust et al, 2001: 4). In the UK, the reduction of social exclusion then became a goal of the new Labour administration in 1997, which was facilitated through the Social Exclusion Unit. At the Lisbon Summit in 2000, the emphasis on reducing social exclusion was stressed when the European Commission stated that "modernising the European social model, investing in people and combating social exclusion was one of the three main objectives of the reform agenda" (Aust et al, 2001: 4). This lead to the introduction of common guidelines for reducing social exclusion through the Open Method of Coordination (OMC) (Aust et al, 2001: 4), through "common targets for implementing a social inclusion strategy", as defined by the European Council in Nice in 2000 (Aust et al, 2001: 4). The social inclusion strategy outlined four objectives that contained a specific reference to addressing vulnerable groups at particular risk, which were outlined as: facilitate participation in employment and access by all to resources, rights, goods and services; prevent the risks of exclusion; help the most vulnerable; and mobilise all relevant bodies (Levitas et al, 2007: 19). In 2001, Member States were required to write a National Plan against social exclusion which determined the common European Union targets (Aust, 2001: 4). The UK version outlined strategies, such as the introduction of Pension reforms, Winter Fuel Payments to improve the incomes of all older people, and the Minimum Income Guarantee which targets help at the poorest pensioners (DWP, 2001: 15; 21). This aim of helping vulnerable groups at risk of social exclusion therefore filtered through to national policy in the UK, and became an "early pre-occupation of the Social Exclusion Unit" (Levitas et al, 2007: 20).

4.5.2 The contribution of transportation policy to social inclusion

The inclusive potential of transportation stems from its facilitation of mobility and independence, as discussed throughout the literature review. A European wide research project entitled Enhancing Mobility in Later Life: Personal Coping, Environmental Resources, and Technical Support (MOBILATE), funded within the European Commission Fifth Framework Programme, highlighted the relationship between "out-of-home mobility" and autonomy and well-being in later life (Mollenkopf, 2004: 45). The MOBILATE project encompassed the five European countries of Finland, The Netherlands, Germany, Hungary and Italy, and involved nine hundred and fifty randomly selected individuals aged 55 years old and over completing standardised questionnaires and diaries (Mollenkopf, 2004: 45). The findings demonstrate that out-of-home mobility in later life is impacted by the built environment, as well as the physical, economic, social, and technical resources that an older person has (Mollenkopf, 2004: 45). Those at greater risk of becoming immobile were identified as older people living on their own, women, those with impaired health and low economic resources, and those living in rural localities (Mollenkopf, 2004: 45). The findings of the MOBILATE project argue that in order to enhance out-of-home mobility in later life it is vital that transport policy and social policy work together (Mollenkopf, 2004: 45). The economic benefits of transport activity have long been considered within UK transportation policy, however, it is only fairly recently that such policy has began to recognise and explore the social aspects of transportation (Jones and Lucas, 2000: 185), as the following paragraph demonstrates.

When the previous government came into power in 1997, they identified transportation as a topic of great political importance (Glaister, 2002: 155). The significance of the role of transportation as a "facilitator, enabling people and goods to move freely and efficiently from one place to another", in terms of fulfilling "economic and social objectives", was beginning to be recognised within the political sphere (Jones and Lucas, 2000: 185). More simply: transportation "figures in the daily experience of a large portion of the population, in a way that few other areas of public policy do" (Glaister, 2002: 155). At this time there was also growing recognition that the "traditional departmental structures are unsuited to address some of the more complex policy issues that are to be found in contemporary society" (Jones and Lucas, 2000: 185). These complex policy issues were deemed "cross-cutting issues" that required "integrated cross-departmental working, at both the local and central levels of Government" (Jones and Lucas, 2000: 185). In the transport sector there were "indications that policy had been increasingly moving in this direction", such as the integration of the Department of Transport and the Department of the Environment, to form the Department of the Environment, Transport and the Regions

(DETR) (Jones and Lucas, 2000: 185). The unification was an attempt to "raise the profile of transport policy", by shifting the approach to an integrated transport policy which supported environmental sustainability and an inclusive society (Glaister et al, 2006: xiii). The amalgamation "helped to strengthen policy links between land use planning and the environment" (Jones and Lucas, 2000: 185). DETR policies "were based upon building more efficient, safer and more environmentally sustainable transport systems, and more strategic integration of public transport systems and land use planning" (Glaister, 2002: 158). Links with other policy sectors are also visible in transportation policy since then; these include: education, health and social exclusion (Jones and Lucas, 2000: 185). However, evident gaps remain, such as transportation and crime; thus, reinforcing the arguments for joined-up policy making (Jones and Lucas, 2000: 185).

4.5.3 Integrated transportation policy and 'joined-up' policy thinking

In 1997, DETR released a Green Paper entitled, 'Developing an Integrated Transport Policy: An invitation to contribute' (DETR, 1997). This was closely followed by the publication of "the first Transportation White Paper for over twenty years" (Jones and Lucas, 2000: 185), 'A New Deal for Transport: Better for Everyone' in 1998 (DETR, 1998). The White Paper presented a collection of initiatives to improve transport for all, and "emphasised the need for joined-up policy thinking and for co-ordinated action across different areas of government, a theme that has been taken up in many subsequent policy documents issued by central government" (Jones and Lucas, 2000: 185). It stated that better public transport would encourage more people to use it, as well as highlighting the importance of the car (DETR, 1998). This White Paper was concerned with national and local level policy and set out the need for Local Transport Plans (LTPs) between councils, businesses, operators and users (discussed further below) (DETR, 1998). Thus, integrated transport policy supports sustainability by providing people with more travel choices (DETR, 1998). In order to achieve the goals set out in the White Paper (DETR, 1998), DETR released a further White Paper 'Transport 2010: The 10 year plan[26]' (DETR, 2000b), and the transport bill 'Transport Act 2000[27]' went through parliament. It was argued that this long-term plan would provide a "stable framework that would bring certainty and coherence in decision-making" (DETR, 2000b: 2). The intention of 'Transport 2010: The 10 Year Transport Plan' was to "ensure that improvements in the accessibility of public transport were brought forward more quickly" (Metz, 2003: 379). This was put into regulation under the 'Disability Discrimination Act 1995', which ensured that public service vehicles are accessible to disabled people. In 2000, DETR also released a report 'Social Exclusion and the provision of public transport' which examined the connections

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[26] Published in July 2000, to be implemented from April 2001.
[27] See, http://www.legislation.gov.uk/ukpga/2000/38/contents

between public transport and social exclusion in urban and rural areas across England (DETR, 2000a). The report stressed that public transport is not just a means of access; there are "social, health, economic and symbolic functions of public transport which transport planners and providers must be aware of" (DETR, 2000a: 4). These strategies aimed to "enhance access and opportunity in rural areas" and "reduce social exclusion" (Glaister, 2002: 177). Despite the recognition of the potential of transportation to reduce social exclusion in these strategies, there was still some way for transport-related social inclusion strategies to go; thus the following sub-section explores the development of socially inclusive transportation strategies.

4.5.4 Local Transport Plans (LTPs) and Accessibility Planning

Access to transportation has an important role in the social inclusion of older people, as has already been discussed within the literature review. It is therefore "vital to explore to what extent the needs of older people are being considered in local transportation planning", as this sub-section does (Help the Aged, 2007a: 2). The 1998 transport White Paper, 'A New Deal for Transport: Better for Everyone' (DETR, 1998: 28) outlined a vision for a "fully integrated safe, efficient, clean and fair transport system" that would create a more "inclusive society and a better environment". Within this White Paper (DETR, 1998) the government outlined plans for the introduction of Local Transport Plans (LTPs). The intention of the LTPs was "to deliver integrated policy and thinking across all sectors" (Jones, Lucas and Whittles, 2003: 209). The 'Transport Act 2000' laid down the requirement for each local authority to produce a LTP that would consider how the transportation needs of various groups of people, including the socially disadvantaged, could be addressed (DETR, 1998). In terms of older people, the Social Exclusion Unit noted that for LTPs to have a significant impact it was essential that they specifically addressed the particular needs of older people, and in particular the most excluded (Social Exclusion Unit, 2006: 89). The Social Exclusion Unit (2003) report, 'Making the Connections: Transport and Social Exclusion', identified transport as a significant barrier to social inclusion, and the importance of Accessibility Planning for promoting social inclusion (Jones and Wixey, 2005: 1). As a result of the Social Exclusion Unit (2003) report, the profiles of transportation and accessibility issues were raised across a range of government departments (Lucas, 2006: 803). The Social Exclusion Unit (2003) report set out "the relationship between transport, accessibility and social exclusion and a cross-Government strategy for improving access to jobs and essential public services" (DfT, 2004b: 1).This led to the recognition that transportation has an important function in "moving people from welfare to work, reducing health inequalities, raising educational

attainment and participation in the post-16 education, crime reduction and promoting neighbourhood renewal" (Lucas, 2006: 803).

Links between accessibility issues and later life were acknowledged, through the recognition that the process of population ageing will enhance the current level of accessibility problems (Lucas, 2006: 803). Reacting to the findings of the Social Exclusion Unit (2003) report, the previous government laid out plans for addressing social exclusion through local transport provision and policy delivery under the title of Accessibility Planning (Lucas, 2006: 801-804). The guidance on Accessibility Planning in LTPs defines accessibility as:

> "Accessibility is the ease with which an individual can access services and facilities that he or she needs or desires. It encompasses the entire journey chain from the origin to the destination and reflects the ability of individuals to reach and use transport services and infrastructures as well as life enhancing facilities and services. Accessibility also describes the catchment characteristics of a given location. A range of factors impact upon accessibility. These include: travel time; cost of travel; location of facilities and services; method and timing of service delivery; safe routes of travel; fear of crime; knowledge of available travel and service choices; travel horizons; and characteristics, needs and perceptions of the individual".

DfT (2004c: 4-5)

This led to the development of a "new framework for Accessibility Planning in England", and allowed transport planning to become based upon access requirements rather than traffic or mobility needs (Jones and Wixey, 2005: 1). English work in this area was world leading in comparison to other G8 Countries (Jones and Wixey, 2005: 1). For example, Jones and Wixey (2005) identified that there was a lack of information about the accessibility needs of different socially disadvantaged groups, and so they conducted research to develop ideas that could be used to modify two existing Accessibility Planning tools. The project focused on socially disadvantaged groups including: older people; people with disabilities and ethnic minorities (Jones and Wixey, 1995: 1). The results "unexpectedly" revealed that "many barriers were common to all the groups, including: limited travel choices (both spatially and temporally); excessive walk access distances to public transport services and various problems encountered on route; the time required to reach destinations (compared to going by car); poor service reliability (service cancelled and delayed); limited availability of public transport information in a suitable format; and the cost of using public transport" (Jones and Wixey, 1995: 1). Although the "impacts and intensity of these barriers did vary between population groups and times of day" (Jones and Wixey, 1995: 1).

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4.5.4.a The role of Accessibility Planning

Accessibility Planning became "part of the delivery and development of the Local Transport Plans (LTPs) between 2006 and 2010" (Lucas, 2006: 804). This encouraged transportation planners to work with land-use planners and other service providers, agencies, and employers, as well as the local communities and individuals experiencing transportation poverty (Lucas, 2006: 804). Accessibility Planning is a process in which "accessibility indicators are used to qualify accessibility and assess the ease with which a given population, population segment or community can access one or more services from a residential or other location using one or more modes of transport" (DfT, 2004c: 5). This is completed in two stages: a strategic mapping audit to identify prioritisation of areas; followed by more detailed local mapping audits for the resulting target areas, groups or issues (DfT, 2004c: 5). The aim of the first stage is to identify where the greatest areas of deprivation, unemployment, people at risk of social exclusion are; and the second is to focus, in more detail, on these priority areas, groups or issues (DfT, 2004c: 5). The second stage can include the review of existing literature and studies, as well as targeted studies and public consultation (DfT, 2004c: 6). There are both national and local level benefits of Accessibility Planning (Lucas, 2006: 808). On a national level they allow the government to "comprehensively and systematically assess the extent and severity of the problem of poor transport and, hopefully, lead to a fundamental review of transport spending in the UK" (Lucas, 2006: 808). At a local level they provide transportation planners with a "robust tool to consider the effects of changes in the transport system on people's access to opportunities such as employment, shopping, health services, social support networks, and recreation" (Lucas, 2006: 808). Therefore, these accessibility indicators enable the "identification, quantification and ranking of areas with differing levels of accessibility" (DfT, 2004c: 5). They have a range of uses including: strategic performance indicators that can be used in the assessment of authorities in improving accessibility at the LTP level; identifier indicators to assess accessibility and target where strategic and local level accessibility problems exist; and project level monitoring indicators which assess the effectiveness of specific local actions (DfT, 2004c: 6-7).

Accessibility Planning supports social inclusion by aiming to deal with the accessibility problems typically experienced by those in disadvantaged groups and areas (DfT, 2004c: 1). It is concerned with access to services that have the "most impact on life chances", such as employment, education, healthcare and food shops (DfT, 2004c: 1). Accessibility

problems can include: "the availability, affordability and accessibility of local public transport, the design, location and delivery of non-transport services and the ability of the community to reach those services by foot or cycle" (DfT, 2004c: 1). The principle of Accessibility Planning is therefore that, "policy development and service delivery can be improved to better meet the accessibility needs of local communities by being more evidence-led and through improved cross-sectoral working" (DfT, 2004c: 1). The aims for Accessibility Planning have been defined as, "to ensure that local decision-makers have improved information on the areas where accessibility is poorest and the barriers to accessibility from the perspective of the people who are living there" (Lucas, 2006: 804). Guidance for local authorities to develop accessible services and transport strategies that identify and meet the needs of older people, sets out the requirement for direct consultation with older populations and their representative organisations (Burnett, 2005: 3). The ability to access key services is a central role of accessibility in later life (Burnett, 2005: 14). In accordance with the findings of other literature, Burnett (2005: 14-15) identifies key services in later life as: food shops; post offices and banks; doctors surgeries, health centres and chemists; bus stops; hospitals; public libraries; pubs; swimming pools; places of worship; department stores; hairdressers; theatres and cinemas; recycling centres; parks; dentists surgeries; speciality shops; public toilets; social clubs, community centres and cafes; petrol stations; and sheltered housing, residential and nursing care (Burnett, 2005: 14-15). This guidance determines the vulnerability of households without a car, or in rural areas, and the time of day at which journeys are undertaken as having a significant impact upon accessibility in later life (Burnett, 2005: 7-8). There are a wide range of barriers for both public transport and pedestrian based journeys that add to the complexity of Accessibility Planning (Lesowiec, 2006: 6).

Alongside this Accessibility Planning initiative within the UK, the infrastructure of services in the UK is changing, for example, in some areas the growth of larger out of town supermarkets is reducing the number of smaller local convenience stores (Burnett, 2005: 19). It is important not to forget about the needs of the "less mobile population, including many older people, in this process" (Burnett, 2005: 19). As people age they tend to rely on public transportation services and systems more and more, as has already been discussed within the literature review. This and the onset of physical and mental impairments in later life, "will have to be incorporated into action plans to improve accessibility" (Burnett, 2005: 20). There are also "geographical pockets of inaccessibility in relation to bus-stops, benches, and banks" that warrant further consideration (Burnett, 2005: 20). Accessibility Planning demonstrates the inclusive potential of a car within a household; "those who are unable to drive are caught up in a vicious cycle of ever worsening public transport

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services, local shop closures and degenerating walking environments" (Lucas, 2006: 809). It will ensure "greater consistency between transport and other public policy objectives including: land-use planning, housing, health, education, local regeneration and regional development (Lucas, 2006: 809). By demonstrating the "transport implications of other aspects of service delivery, especially the opening, closure and relocation of public facilities such as hospitals, healthcare services, schools, colleges, and the scheduling of services" (Lucas, 2006: 809). Despite these positive outcomes of Accessibility Planning, there are also a number of limitations, as the next sub-section shows.

4.5.4.b The limitations of Accessibility Planning

The act of measuring accessibility raises questions over what constitutes a convenient distance to a given service (Burnett, 2005: 17). For example, when considering older people, they may be discouraged from using services if it was too far away from their home, and this may have a negative impact upon their mobility by reducing the total amount of journeys that they undertake (Burnett, 2005: 17). There is therefore a need to identify a "hierarchy of facilities" that groups of people, such as older people use (Burnett, 2005: 18) These should be "measured using different thresholds", for example, would an older person prefer to live nearer to a bus stop or a bank (Burnett, 2005: 18). In terms of considering the needs of older people specifically, "it is not that older people are not mentioned in the official documents, including the technical sections, but like other sub-groups in the population, such as children and young people, women and black and ethnic minorities, they deserve to be the focus of specific accessibility analysis" (Burnett, 2005: 19). There is a need for older people to be "embedded, and involved, in Accessibility Planning" (Burnett, 2005: 19). In a report for Help the Aged, Lesowiec (2006: 7) assessed the accessibility strategies of the local authorities of England and Scotland. The report reviews the extent that older people were recognised by local authorities within LTPs in England and Scotland dated between 2005 and 2011 (Lesowiec, 2006: 8). The findings show that for all of the thirty one local authorities that were evaluated "accessibility is in some way mentioned as an aim, objective, priority or consideration" (Lesowiec, 2006: 8). Most of the local authorities also recognised the "importance of accessibility and its connection to social inclusion", with reference to meeting the accessibility needs of various groups in order to impact upon their quality of life (Lesowiec, 2006: 8). However, the report highlighted a concern that public consultation is taking place after the initial planning stages, rather than before (Lesowiec, 2006: 8). Many of the local authorities were "aware that older people are particularly susceptible to accessibility problems" (Lesowiec, 2006: 9). They also identified fears about personal safety as a barrier to travel

in later life (Lesowiec, 2006: 11). Overall the report concludes that "the findings are encouraging, suggesting that some wide-reaching and long-term changes are being made in order to improve accessibility" (Lesowiec, 2006: 13). Although, it was noted that "the lack of specific transport plans to improve access to key services is worrying, and although partially offset by the good use of gap filling community transport schemes and longer term Accessibility Planning, this is an area that calls for action" (Lesowiec, 2006: 14). Generally the issues of accessibility, local services and older people are being recognised by Local Authorities, this could be strengthened though, if it was "translated into a genuine commitment to far-reaching, effective and immediate change" (Lesowiec, 2006: 14).

4.5.5 Transportation policy and social inclusion in later life

There is a conflict between the development of transportation policy that, on the one hand aims to "deliver social equality through transport programmes" and the encouragement of increased car dependency, and on the other, the expansion of the Climate Change Agenda and the "need to significantly reduce traffic levels on UK roads" (Lucas, 2006: 801). This conflict has arisen out of the dichotomy that car ownership is, in policy terms, considered with positive connotations by, for example, increasing independence. Whilst car dependency has "encouraged dispersed and car-orientated patterns of development, reducing the viability of other modes, significantly contributed to poorer local environments and has a role to play in the exclusion of already disadvantaged sectors of the UK population" (Lucas, 2006: 802). It has also been argued that the development of car dependency has decreased the feasibility of other modes of transportation, such as public transportation, walking and cycling (Lucas, 2006: 803). However, using public transport may be more difficult for older people, particularly as the onset of physical and mental impairments and frailty, on account of age, can mean that older people increase their reliance on the car in order to complete activities of daily living (Gilhooly et al, 2002: 21). The ability to be able to travel anywhere, in comfort, is important to the quality of life of older people in good health, therefore it "may be difficult to persuade older people to give up their cars" (Gilhooly et al, 2002: 21). Within the UK, it has been noted that land-use and transportation policies have developed in such a way that actually reinforces social exclusion rather than promoting social inclusion (Social Exclusion Unit, 2003). A report by the Social Exclusion Unit (2003) identified that "improving local transport is only part of the solution to poor accessibility and that transport, land-use and service sector planning and delivery planning decisions need to be integrated" (Lucas, 2006: 805). The introduction of guidelines on the transport needs of older people, such as the European Union guidelines on the operation of buses (2003), that take into account the needs of older people, "should

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enhance the Public Service Vehicles Accessibility regulations (2000) already in force" (Gilhooly et al, 2002: 21).

In 2001, DETR was disbanded into two departments: the Department of the Environment, Food and Rural Affairs (DEFRA), and the Department of Transport, Local Government and the Regions (DTLR). This was followed shortly afterwards, in 2002, by DTLR separating into Communities and Local Government, and the Department for Transport (DfT) which it remains at the time of writing. In 2001, DETR released a report 'Older people: Their transport needs and requirements', which aimed to improve public services for older people, by better meeting their needs through listening to their views and encouraging their contribution (DfT, 2001). Transportation was recognised as a key factor contributing to disadvantage within deprived areas in 2001 (Social Exclusion Unit, 2001: 13; 35). This led to the publication of a number of policy documents and debates that specifically addressed the topics of transportation, social exclusion and social inclusion (Social Exclusion Unit, 2003: 1). The Social Exclusion Task Force[28] led a number of initiatives, research projects and reports which focus on social exclusion and link to transportation and later life (including: Social Exclusion Unit, 2003; Scharf et al, 2005; Social Exclusion Unit, 2006; and Becker and Boreham, 2009). They set out a plan for how the government should tackle the transport and accessibility problems that affect social exclusion, in their 2003 report, 'Making the Connections: Transport and Social Exclusion' (Social Exclusion Unit, 2003: 1). It was in this report that the previous government acknowledged transportation problems as potential barriers to social inclusion (Social Exclusion Unit, 2003: 1). This report (Social Exclusion Unit, 2003) called for improved public services to build on the 'Local Transport Plans' (LTP) set out within 'Transport 2010: The 10 year plan' (DETR, 2000b). In 2005, the report 'Multiple Exclusion and Quality of Life amongst Excluded Older People in Disadvantaged Neighbourhoods' highlights the experiences of older people effected by multiple forms of social exclusion (Scharf et al, 2005).

The report 'A Sure Start to Later Life: Ending inequalities for older people' provided details of government plans to mitigate the exclusion, poverty and isolation experienced by older people (Social Exclusion Unit, 2006). These plans were based on the 'Sure Start model' created for children and families (Social Exclusion Unit, 2006: 8). The aim of the Sure Start model "was to locate a single, accessible gateway to wide ranging services in the community, where potential problems are identified quickly and prevented from becoming worse" (Social Exclusion Unit, 2006: 8). The 'Sure Start to Later Life' was piloted through

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[28] Known from 1997 until September 2006 as the Social Exclusion Unit.

a programme called 'Link-Age Plus' designed to test the suitability of the approach for older people, and other programmes including 'Partnerships for Older People Projects' and 'Local Area Agreements' (LAA) (Social Exclusion Unit, 2006: 9). However, more recently, Help the Aged released a policy statement (Help the Aged, 2008a: 2) confirming that the "discrimination and barriers that prevent older age and retirement being a time when people are able to participate fully in the community, learn new skills, or take up a hobby", are still in existence. Often the things that should be enjoyable in later life are replaced with experiences of "loss, loneliness, and isolation" (Help the Aged, 2008a: 2). Help the Aged (2008a: 8) therefore called for the "obstacles preventing older people from participating in their community to be removed". Older people are valuable resources who give back to society through activities such as volunteering and caring (Social Exclusion Unit, 2006). Although, despite the positive policy intent there is still a long way to go in reducing social exclusion and feelings of dependence in later life, as the recent publication of the Social Exclusion Task Force and National Centre for Social Research report 'Understanding the risks of social exclusion across the life course: Older age' (Becker and Boreham, 2009) highlights. Understanding and reducing social exclusion in later life is becoming increasingly complex due to these "multiple risk markers in older age" (Becker and Boreham, 2009: 1). The following sub-section explores the future contribution of transportation policy to social inclusion in later life.

4.5.6 Transportation policy and social inclusion in the future

In April 2008, the government introduced a new concessionary fare scheme which meant people with a disability, and people aged 60 years old and over, are automatically entitled to free national off-peak bus travel. This was followed, in 2008, with the updated 'Local Transport Act 2008[29]', a government bill that meant local authorities had to react to local transport needs. The introduction of the 'free' national bus travel for people aged 60 years old and over, and people with disabilities, is clearly a contribution towards social inclusion from transportation policy. Although, as the Help the Aged (2007b) campaign for travel tokens highlights, "many older people with mobility problems and disabilities are unable to make use of this free bus national travel, instead having to pay for specialist services or relying on family and friends". It has been suggested that "it is not easy to recognise a contribution towards social inclusion by transport policy under the 1997 government" (Glaister, 2002: 183). Thus, future transport policies must carefully consider the demographic changes linked to the process of population ageing, especially the trend that will "result in older generations wishing to own and use cars more than their predecessors" (Glaister, 2002: 156-157). According to Glaister (2002: 157) policies that

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[29] See, http://www.legislation.gov.uk/ukpga/2008/26/contents/enacted

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focus on improving mobility for older people will ultimately "be an enormous benefit". However, there is a possible clash of interest for future transportation policies for an ageing population, between policies that assert the "growth in the number of cars should be stopped", and policies that "state whether and how the growth of mobility amongst the older population is to be accommodated" (Glaister, 2002: 257). This study argues that the potential impact that transportation can have within the lives of older people is significant, and transportation and technology could work together to fill the gaps in achieving this. It is then essential that future transportation policies explore both the micro and macro perspectives of issues, including the 'top-down' and 'bottom-up' benefits of the inclusive potential of transportation and technology. The following section focuses on the development of policy around digital exclusion and inclusion in later life, aligned with the rapid proliferation of information and communication technologies within society.

4.6 Digital exclusion and inclusion in later life

In 1999, the Office of the e-Envoy was created to make sure that online services met the needs of customers and delivered the e-agenda across the UK, in order to improve public services (Cabinet Office, 2004). Significant progress was made with the creation of public access points through the UK Online Centre Network, and the Information and Communication Technology Skills for Life programme (Cabinet Office, 2004: 1). However, in 2004, the previous government accepted that, in terms of digital inclusion, there was still a long way to go (Cabinet Office, 2004). The Digital Inclusion Panel (DIP) was therefore established to encourage digital take-up and identify at risk groups (Cabinet Office, 2004: 3). In 2004, the DIP examined ways to widen access to digital technology across all sections of society, and recommended that the "government should support commercial and social enterprise, and delivery of e-government services", as well as "develop strategic lifelong learning opportunities that encourage digital take-up through social enterprise" (Cabinet Office, 2004: 81-82). The DIP identified that "older people, people with disabilities, and people on low income shoulder most health, educational, social and economic challenges", and thus, as the "heaviest users of public services would potentially gain significant value from digital engagement" (Cabinet Office, 2004: 38). However, the DIP ascertained that these groups are also the, "most likely to be socially excluded and, by extension, digitally unengaged" (Cabinet Office, 2004: 38). The report went further stating that older people "particularly those on a low incomes, with a disability or from ethnic minorities can be very hard to reach but may be the most in need of assistance" (Cabinet Office, 2004: 39). It also acknowledged a number of reasons why older people would benefit from digital inclusion: "older people *maybe* less mobile due to lack of money, illness or disability; *may* need information on a wide range of issues and *can be* are unsure how to find it: *may* live alone or are far from relatives; wish to maintain

their independence; wish to be informed and consulted on issues relevant to them"
(Cabinet Office, 2004: 39; *my emphasis*).

A similar picture was presented by the study 'e-Government: reaching socially excluded groups' (Foley et al, 2005) in 2005. This study reported the eGovernment and digital access activities of seventy eight local authorities (Foley et al, 2005). Stating that "recent research has shown that eGovernment and digital technology can produce many benefits for local authorities and citizens" (Foley et al, 2005: 4). Although, finding that the "benefits of digital transformation frequently fail to reach socially excluded groups" (Foley et al, 2005: 4). In 2005, the Office of Deputy Prime Minister released the report 'Inclusion Through Innovation: Tackling Social Exclusion Through New Technologies', which explored the potential that information and communication technologies have to improve service delivery and quality of life for the most excluded groups (ODPM, 2005). The report argued that effective use of information and communication technology is central to addressing exclusion and meeting complex needs (ODPM, 2005). Explored how information and communication technology can be used to make mainstream public services, including: education and training, health, employment, and benefits and housing; more effective, efficient, and accessible for socially excluded groups, and set out examples of innovative uses of technology to address exclusion (ODPM, 2005).

4.6.1 Realising digital inclusion in later life

In 2008, the department of Communities and Local Government released a number of reports that focused on digital exclusion and inclusion (see, CLG, 2008b; CLG, 2008c; CLG, 2008d; CLG, 2008e; and CLG, 2008f). 'Understanding Digital Exclusion' used recent quantitative data sets from the Office of National Statistics and others to understand the trends in the take up of digital technologies (CLG, 2008b: 5). The report highlighted the benefits of wider digital technologies for socially vulnerable groups, who were identified as more likely to be "over 65 years of age; DE social class; single, widowed or separated" (CLG, 2008b: 26). The report also highlighted barriers to digital equality as "access, motivation, and skills and confidence" (CLG, 2008b: 28). Access was cited as "whether an individual has some means to access the technology in terms of affordability, time, training or support, literacy levels, disabilities and usability of interfaces; motivation was whether the individual sees the benefit from or has interest in accessing these technologies; and skills and confidence was whether the individual is able to, and feels able to, make affective use of technologies, with concerns about security also falling into this category" (CLG, 2008b: 28). Recommendations were made as to approaches that could help to achieve digital equality in the UK, including the need to change attitudes;

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improve skills, confidence and trust; and support the vulnerable in the use of wider digital technologies (CLG, 2008b: 38-39).

'Delivering digital inclusion: An action plan for consultation' suggested that there are significant and untapped opportunities to use technology better, on behalf of citizens and communities, which includes improved service planning, design and delivery, particularly to address the needs of disadvantaged groups and individuals (CLG, 2008f: 6). The Action Plan stressed that "although improvements in health services are such that many older people are much more active and healthy than previous generations, the issues associated with longer life expectancy mean that digital technologies will have a considerable role to play in meeting the needs of older people" (CLG, 2008f: 19). And that "older people face a number of problems which technology can help to address, such as: independent living; volunteering and work; and social isolation" (CLG, 2008f: 19). In 2009, the previous government published 'Digital Britain' (DCMS/DBIS, 2009), an interim action plan developed by Lord Carter, the first Minister for Communications, Technology and Broadcasting. The key proposals included: universal access to high speed broadband by 2012; developing 'next generation networks' for mobile and broadband; and improving digital content and public service broadcasting in a "multi-media, multi-platform digital world" (DoH, 2009a: 13). How the new Coalition government will take forward these digital inclusion policies is yet to be confirmed. However, as this section demonstrates, despite this recognition of the benefits of digital inclusion in later life, there has been little change in terms of older people's use of information and communication technologies. It is clear that since the creation of the Office for eEnvoy in 1999, older people have remained one of the most digitally excluded groups in England.

4.7 Summary

This is the last of the three literature review chapters. The three literature review chapters have presented an overview of the existing literature, empirical data and policy documents and developments centred upon the thematic areas of transportation, technology and older people. This chapter has presented the policy framework that underpins this study. Throughout the chapter the discussion has focused on the key policy areas that intersect between the thematic topics of transportation, technology and older people. These policy areas were the ageing strategy; the reform of adult health and social care; the promotion of Independence, well-being and choice; social exclusion and inclusion in later life; transportation; and digital exclusion and inclusion in later life. The sheer volume of relevant policy documents (see, Appendix 2), and policy issues and debates (see, Table 3), connected to the thematic topics of transportation, technology and older people, are

obvious from the discussion in this chapter. It is also apparent that the demographic changes of population ageing have led to the growth of debates within the policy arena that are concerned with enhancing quality of life in later life, through the areas of social inclusion and independence. Social inclusion and independence have been visible throughout this chapter as the key aspects of public policy that intersect between the thematic topics of transportation, technology and older people. Despite the implementation of cross-government strategies in some policy areas, such as, the ageing strategy (HM Government, 2009) and social exclusion (Social Exclusion Unit, 2006), there are many more issues that cross-government policy connected to population ageing must address, including digital inclusion in later life. Throughout the majority of the policy documents reviewed, older people were considered a homogenous group, with little reference to any diversity in terms of health status, socio-economic status and lifestyle choice. The use of "generalised policies for all older people" will not be successful in addressing the ageing population (Cann, 2009: 39). Instead, what is needed is "concerted action to tackle major inequalities in income, health and well-being and social inclusion", through approaches that "form part of a life course strategy which deals with disadvantages owing to gender, ethnicity and socio-economic origins and uses mid-life and retirement as windows of opportunity" (Cann, 2009: 39). Future policies concerned with ageing issues, need to consider the diverse backgrounds and individual differences of older people. At the time of writing this, there are uncertainties as to how the new Coalition government will take forward the previous governments policies, especially given the radical restructuring of welfare and the role of the state that is currently underway (Kaffash, 2010: 1). This thesis will therefore explore these individual differences of samples of older people during the phases of data collection and analysis, in order to demonstrate the fundamental need for policymakers, planners, academics, the media and the general population to understand the heterogeneity of later life. The next two chapters (Five and Six) are the methodology chapters. Chapter Five explains the details of both phases of empirical data collection in detail, whilst Chapter Six focuses on the ethical considerations, the method of data analysis, and dissemination strategies.

Chapter 5: Methodology – Research design and methods of data collection

This chapter provides details of the research design and methods used to collect the empirical data that underpins this thesis. The data was collected in two separate phases. The first phase was concerned with the Mobilisation and Accessibility Planning for People with Disabilities (MAPPED) project[30], which involved the development and field testing of tailored handheld navigational devices, with various samples of older people and people with disabilities. The second phase focused on the Getting Out and About project, where a sample of older people took part in individual in-depth interviews. As discussed within Chapter Two, conventional research in the field of transportation studies makes limited use of qualitative methods. This directed the initial methodological explorations for this study to focus upon methods that would extract rich qualitative data from the participants. It was also important to find an approach that would enhance the gap in the academic interpretations of the theoretical understanding of the concept of mobility. It was felt that the development of a conceptual framework for mobility in later life would begin to address this, and that qualitative methods would facilitate the collection of appropriate data in order to achieve this. Therefore, despite the interdisciplinary nature of this thesis, the chosen methodology was social science based. The rationale for using social science based methods was that, in qualitative terms, these were the most applicable to answer the research questions and for accomplishing the research aims and objectives. They are also established methodologies that have theoretically sensitive ethical approaches, thus increasing the academic rigor of this research.

This chapter and the following chapter (Six) together explain the methodological decisions undertaken as part of this thesis. The methodology is written reflexively, in order that the reader understands the accomplishments and problems experienced during the research journey. This also means that it is clearly visible how particular circumstances or issues during the two phases impacted upon the actual empirical data that was collected. A brief example of this is how the original methodological plans for the MAPPED project (Op. Cit.) were adapted when the developers of the handheld navigational devices ran into technological difficulties. They requested more time to work on the MAPPED software, which shortened the timescales for conducting the field trials. In the end the sample of participants were sourced quickly, and this resulted in a similarity in their demographic backgrounds. This is explored in further detail later in this chapter (in sections 5.5 and 6.6). However, the consequence of these issues during the MAPPED project (Op. Cit.)

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[30] See: http://services.txt.it/MAPPED/

was the need to encourage a sample of participants with wider demographic backgrounds for the Getting Out and About project. This lead to a change in the data collection instrument utilised in phase two, from focus groups to individual in-depth interviews. The iterative research trajectory is discussed in more detail within this chapter which is divided in to six sections. The first section, 5.1, provides a brief synopsis of the research design for the two phases of empirical data collection, as well as the research questions which this data informs, and the rationale for the chosen research strategy. The second and third sections, 5.2 and 5.3, contain detailed information about the MAPPED project (Op. Cit.). Section 5.2 focuses on the background, aims and structure of the MAPPED project (Op. Cit.), whilst section 5.3 describes the field trial stage of the MAPPED project (Op. Cit.) in more depth. The fourth section of this chapter, 5.4, reflects on the limitations of the MAPPED project (Op. Cit.) and the field trial data. The fifth section, 5.5, describes, in detail, the second phase of data collection, the Getting Out and About project, including an explanation for adapting the original methodological plans from focus groups to individual interviews. The sixth and final section, 5.6, summarises the key points of this first methodology chapter.

5.1 Methodological synopsis

This section presents a synopsis of the methodology. It is split into three sub-sections, the first sub-section, 5.1.1, provides an overview of the research design. In the second sub-section, 5.1.2, the research questions and how they have informed the methodological decisions underpinning this study are discussed. The third sub-section, 5.1.3, focuses on the rationale for employing an interdisciplinary research strategy, and the use of qualitative methods within the field of transportation studies. The rest of the chapter then examines the research design and methods of data collection in greater detail.

5.1.1 Research design

The empirical data which informs this thesis was collected during two separate phases. The first phase was the MAPPED project (Op. Cit.), a case-study research collaboration funded by the European Union. During the MAPPED project (Op. Cit.) tailored handheld navigational devices with accessibility information were tested in a number of field trials. These field trials were designed to match everyday travel situations, and the sample of participants included people with disabilities aged 18-65 years old and older people aged 65 years old and over. Precise details of the MAPPED project (Op. Cit.) are discussed within the following two sections, 5.2 and 5.3. The second phase of empirical data collection was the Getting Out and About project, which involved a sample of twenty older people aged 65 years old and over taking part in individual in-depth interviews that incorporated hypothetical vignettes. The Getting Out and About project is examined more fully in section 5.5.

5.1.2 Research questions

Undertaking the literature review facilitated a narrower research focus, as well as defining the research questions that are central to this study. The following research questions are examined throughout this thesis:

1. What patterns of travel behaviour are associated with later life?

1a) What motivates older people to undertake travel-based mobility and how important is it to them?

1b) What factors impact upon the travel-based mobility of older people?

2. In what ways can information and communication technologies support the travel-based mobility of older people, and what are the limitations?

2a) Does accessible travel information assist older people in getting out and about?

2b) Would the provision of tailored handheld navigational devices support older people in getting out and about further and more often?

2c) Do older people substitute physical with virtual journeys, and if so, how do they feel about it?

Travel-based mobility is defined during this study as to 'move or get around from one place to another unaccompanied' (discussed further in Chapter Seven, section 7.2). As the two phases of empirical data collection are distinct, it means that they inform specific parts of these research questions, as is shown in Table 4. There are occasional exceptions where data from both phases has informed specific parts of certain research questions, where applicable these are clearly visible within the text. Thus, the insights in response to the research question 1 are drawn from data collected during the Getting Out and About project. Research question 1 is concerned with patterns of travel behaviour associated with later life, and will shed light on older people's perspectives of travel behaviour. The two parts of research question 1 have been designed to develop further understanding in this area, referring specifically to travel-based mobility in later life. Question 1a focuses on what motivates and how important travel-based mobility is in later life, whilst question 1b examines the factors that impact travel-based mobility in later life. The findings of research question 1b also inform the development of the conceptual framework for mobility in later life. Research question 2 has a different focal point to the first research question. The intention of research question 2 is to demonstrate ways that information and communication technology can support, and limit, travel-based mobility in later life. There are three parts to research question 2. Question 2a and 2b are informed by the MAPPED project (Op. Cit.) and look at whether accessible information and services can support travel-based mobility in later life. Question 2c draws upon the data from the Getting Out and About project to explore ways that older people substitute physical with virtual journeys, and how they feel about doing so.

Table 4: The phase of empirical data collection primarily being drawn upon in order to inform the specific parts of the research questions.

Research question	1		2		
	1.a	*1.b*	*2.a*	*2.b*	*2.c*
Phase of empirical data collection primarily drawn from	*Phase Two: Getting Out and About project*	*Phase Two: Getting Out and About project*	*Phase One: MAPPED project*	*Phase One: MAPPED project*	*Phase Two: Getting Out and About project*

5.1.3 Rationale for choice of research strategy

This sub-section looks at the rationale for the choice of research strategy, by exploring the strengths and weaknesses of the chosen qualitative, interdisciplinary approach. Traditional transportation research relies upon quantitative methods of data collection. However, a "growing number of travel behaviour researchers" are beginning to see the benefits of qualitative methods (Clifton and Handy, 2001: 3), and the field is beginning to break away from the more conventional technique of analysing survey data. Few transportation studies make use of empirical qualitative data, although qualitative methods have never been extinct within transportation research (Lanzendorf, 2003: 6). Qualitative research is vital to "understanding the complexity of transportation behaviour, which rests upon the subjective beliefs and behaviours of the individual person" (Poulenez-Donovan and Ulberg, 1994). The nature and scale of technological advances within the transport field mean that it is now essential for research to consider the surrounding "social, behavioural and motivational dimensions" (Lyons and Urry, 2006: 3). Therefore, as a number of scholars have argued, the rationale for using a qualitative approach is that, in order for the field of transportation research to develop, there is presently a need for current and future research to adopt a qualitative approach (see, Lanzendorf, 2003: 6). This is significant as it will allow the 'voices' of older people to be heard within the field of transportation studies.

Interestingly, the contemporary spurt of interdisciplinarity within academia seems to have initiated a move towards this. Interdisciplinarity "is best seen as bringing together distinctive components of two or more disciplines" (Nissani, 1997: 203). However, within academic discourse interdisciplinarity becomes more complex as the four realms of knowledge, research, education and theory join together (Nissani, 1997: 203). Therefore, the shift towards multi-discipline and multi-method ways of working has the potential to enable the discovery of new ways of looking at traditional aspects of society. There is a need for disciplines, as a way of organising institutions and dividing knowledge into components (Nissani, 1997: 201-213). However, it is only by crossing these divides that the sociological imagination is successful:

> *"The sociological imagination…in considerable part consists of the capacity to shift from one perspective to another, and in the process to build up an adequate view of society and of its component".*

> Wright Mills, 1959: 211-212

Interdisciplinary research is then valuable as it can produce knowledge that makes a "vital contribution to scholarship, society and individuals", as "many complex or practical problems can only be understood by pulling together insights and methodologies from a variety of disciplines" (Nissani, 1997: 201; 209). Within the field of transportation studies a prominent interdisciplinary shift can be seen within research that combines aspects of the social sciences (for example see, Marsden et al, 2008; and Musselwhite and Haddad, 2008). This involves the juxtaposition of transportation issues amongst a person-centred approach, and highlights new ways of looking at how transportation systems and services can be improved for the benefit of current and future societies (Lyons and Urry, 2006; and Pickup and Town, 1983).

5.2 Data collection: Phase one – The MAPPED project

This section focuses on the MAPPED project (Op. Cit.), and is split into five sub-sections. The first sub-section, 5.2.1, focuses on the background and aims of the project. Sub-section 5.2.2, explains the structure of this case-study research collaboration. The third sub-section, 5.2.3, looks at the stages of data collection utilised within the MAPPED project (Op. Cit.). Whilst the fourth sub-section, 5.2.4, examines how the data collection instruments for the field trial stages were designed. The final sub-section, 5.2.5, determines the methods of data collection undertaken during the field trials.

5.2.1 Background and aims of the MAPPED project

The MAPPED project (Op. Cit.) was undertaken between September 2004 and March 2008, co-funded under the Information Society Technologies Sixth Framework Program of the European Commission. The MAPPED project (Op. Cit.) was made up of a consortium of five international organisations: technological developers from the UK who dealt with the contract research and technology; developers of computer solutions for e-business from the UK; mobile applications developers based in Spain; a Local Government Department in the South of England; and a Clinic providing a range of specialised services for children and adults with physical disabilities in the Republic of Ireland. The objective of the MAPPED project (Op. Cit.) was to develop an "intelligent system that would empower persons with disabilities to play a full role in society and to increase their autonomy". The provision of location-based services for disabled users would provide the ability to plan excursions between any specific points at any given time of the day, whilst also taking into consideration their individual accessibility needs. To meet these goals the MAPPED software was designed to incorporate: a multi-modal route planner that allows for disability-specific routing information and the reservation of accessibility services; geographically indexed accessibility information; and disability friendly mobile user interfaces. The handheld navigational devices were then, a mobile variation of the in-car satellite navigation systems, such as Tom-Tom, available commercially at the time of the field trials.

Conceptually, the aim of the MAPPED handheld navigational device was to provide the user a set of journey instructions which could be filtered to match individual specific mode(s) of travel, including bus, train, private car, and walking. The mobile nature of the handheld navigational devices meant that the participants were able to access real-time travel data such as timetable updates, and accessibility information, at different stages during their journeys. The device also enabled the user the ability to input their own information on the system, for example, if they discovered that the existing information was incorrect. The designers of the system intended it to be disability friendly with "various user specific interfaces, and the potential to support a multitude of traveler circumstances" (MAPPED project, Op. Cit.). In connection to this thesis, the MAPPED project (Op. Cit.) was therefore a research collaboration that provided a case study example, of whether information and communication technology can support travel-based mobility in later life. Research collaborations are difficult to define as they can often take a variety of different forms, from active participation to offering general advice (Katz and Martin, 1997: 3). Although, the "growing importance of interdisciplinary fields" has strengthened research collaborations; and are particularly likely if research is experimental rather than theoretical

(Katz and Martin, 1997: 4-9). The benefit of being involved in this research collaboration was that it, utilised a broad range of skills, knowledge and techniques, that "often no single individual will possess" (Katz and Martin, 1997: 14). The next part of this chapter looks at how the MAPPED project (Op. Cit.) research collaboration operated.

5.2.2 The MAPPED project: Structure of the research collaboration

In the first instance, the five organisations that made up the consortium partnership, as stated above, were accountable for different stages of the project, ranging from the development of the software to the management of the field trials. The research team at the Local Government Department in the South of England was responsible for overseeing the design, co-ordination and evaluation of the field trials of the handheld navigational devices. The research team at the Clinic in the Republic of Ireland and the University researcher were also involved in the design, co-ordination and evaluation of the field trials of the handheld navigational devices. It is the results from the field trials, rather than the MAPPED project as a whole, which inform this thesis. As the chapter continues to explain, the research collaboration meant working together to formulate plans for the structure of the field trials and the data collection instruments, although the researcher or research team from each institution was responsible for their own specific stage of the field trials.

5.2.3 The MAPPED project: Stages of data collection during the field trials

The field trials for the MAPPED project (Op. Cit.) were split into four stages, each drawing upon a different convenience sample of participants, as Table 5 demonstrates. A small pilot to test the data collection instruments and the structure of the trials was conducted by the designers of the MAPPED software in Spain. No problems were identified during the pilot and so the handheld navigational devices were deemed ready for the field trials. Stage one of the trials was based upon a convenience sample (n=9) of 18-65 year old people with disabilities from the Local Government Department study area. The research team based at the Local Government Department were responsible for this stage of the trials, including the recruitment of participants and day-to-day running of these trials. Participants were users of the local Shopmobility scheme and members of staff from the Local Government Department. This stage supported travellers in familiar surroundings, involving participants that had some prior experience of using either a mobile telephone or the internet. Stage two of the trials involved a convenience sample of older people aged

65 and over from the South of England study area (n=7). The University researcher writing this thesis was responsible for this stage of the trials, including the recruitment of participants and day-to-day running of these trials. Participants were recruited through several local community organisations and by snowballing. This stage supported travellers in familiar surroundings, involving participants that had some prior experience of using either a mobile telephone or the internet. Stage three of the trials involved a convenience sample (n=16) of people with a physical or mental impairment aged between 18 and 65 years old from the Republic of Ireland study area. The research team based at the Clinic in the Republic of Ireland were responsible for this stage of the trials, including the recruitment of participants and day-to-day running of these trials. Participants were recruited from the client base of the Clinic, and had some prior experience of using either a mobile telephone or the internet. Stage four of the trials supported travellers in unfamiliar surroundings. To facilitate the unfamiliar traveller element of this stage, the team from the Clinic, and the team from the Local Government Department each recruited and swapped one additional participant. These two participants had not taken part in the previous stages of the field trials, and had some prior experience of using either a mobile telephone or the internet. The number of participants involved in this stage was restricted due to the financial costing of such an exercise.

Table 5: Table showing the stages of the field trials for the MAPPED project, determining the number of participants, age range, study area and the type of journeys (familiar or unfamiliar) undertaken.

STAGE	PILOT	ONE	TWO	THREE	FOUR	TOTAL
STUDY AREA	Spain	Southern England	Southern England	Republic of Ireland	Republic of Ireland and Southern England	/
NUMBER OF PARTICIPANTS	3	9	7	16	2	37
AGE RANGE OF PARTICIPANTS	18-65 years old	18-65 years old	65 years old and over	18-65 years old	18-65 years old	/
FAMILIAR/ UNFAMILIAR TRAVEL	Familiar	Familiar	Familiar	Familiar	Unfamiliar	/

5.2.4 The MAPPED project: Designing the data collection instruments for the field trials of handheld navigational devices

The Local Government Department was responsible for creating and distributing the first draft of the data collection instruments, which the team at the Clinic in the Republic of Ireland and the University researcher were able to review and comment on it. As the Local Government Department is based within reasonably close geographical proximity to the University researcher, they were able to deal directly with each other during the project and became the first point of contact for the University researcher. Initially several meetings between the Local Government Department and the University researcher took place in order to establish the expectations of both parties, the boundaries of the research collaboration, and a rapport between the researchers. This lead to the University researcher drawing up a research agreement which was signed by both parties (see, Appendix 3, page 40). The research agreement was deemed necessary in order to maintain a professional working relationship, to limit any confusion over responsibilities, and outline the standards expected by both parties. This was particularly significant as this research collaboration combined both academic and non-academic partners. At times it was not a primary concern for the non-academic partners to uphold the necessary level of rigour required within academic research, which did have a slight impact on the way in which the research was conducted. The largest cause for concern was over the design of the data collection instruments, as discussed within the next paragraph.

5.2.4.a Research collaboration: The art of compromise and the purpose of a research agreement

In the research agreement it was established that the University researcher would be permitted to insert additional questions to the data collection instruments utilised during the field trials. This did though, prove more difficult to accomplish than first anticipated. The initial structure and questions to be used on the data collection instruments were stipulated by the Local Government Department. These were then reviewed by the University researcher who responded with a list of proposed amendments and additional questions. These suggested amendments were then discussed in a meeting between the Local Government Department research team and the University researcher. However, at this meeting it became obvious that, in order to be able to draw up the final draft versions of the data collection instruments, both parties would have to compromise on the questions included. At this meeting, the research team from the Local Government Department stated that the original ethical application for the MAPPED project (Op. Cit.) contained a clause that stated that, 'only personal information that is essential to the

project will be collected'. Therefore, the Local Government Department argued that the information that would be gained from some of the questions posed by the University researcher were not relevant to the project as a whole. Thus, the Local Government Department declared that it would not be possible to add in all of the questions that the University researcher had proposed. As a compromise the University researcher proposed that the additional questions be added to the data collection instruments used during stage two of the field trials with the sample of older people. This was acceptable as stage two was additional to the original project proposal and therefore the ethical approval was sort from the University. The Local Government Department agreed to this, and so the University researcher decided to include the additional questions on the data collection instruments completed by the sample of older people. This meant that, in the end, two different sets of data collection instruments were utilised during the MAPPED project (Op. Cit.) (for copies of both sets see, Appendices 4-12), and that only the questions used on both sets of the data collection instruments were comparable. However, it did enhance the validity of stage two of the research by increasing the rigour of the instruments used. The research team at the Clinic also agreed to the use of two sets of data collection instruments. Once all three parties had approved the data collection instruments, they were deemed ready for use. During the field trials empirical data was collected via a number of different methods, as the following sub-section examines.

5.2.5 The MAPPED project: Methods of data collection utilised during the field trials

During the field trials for the MAPPED project (Op. Cit.), empirical data was collected through the use of three different research instruments. These research instruments were: questionnaires with open and closed ended questions; travel diaries with open and closed ended questions; and semi-structured individual in-depth interviews. As is shown in Figure 8, prior to the field trials each participant completed the demographic and socio-economic information questionnaire (Appendix 4 and 5) and the before trial questionnaire (Appendix 6 and 7), which logged personal information, as well as their responses to other mainly attitudinal questions. During the period of the field trials each journey was recorded on a separate travel diary (Appendix 8 and 9). At the end of the trials each participant also completed the after trial questionnaire (Appendix 10 and 11), and the older people who took part in stage two of the field trials also participated in an individual in-depth interview (Appendix 12). It was intended that each stage of the MAPPED project (Op. Cit.) field trials would emulate one another, meaning that although the data from stage two would include additional information from the extra set of questions, the rest would be comparable. However, as discussed later in this chapter (sub-section 5.3.3), the technological challenges that resulted in the changes to the format of the field trials meant

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that this ultimately proved difficult; and led to changes in the data collection instruments used for some stages of the field trials (as explored in sub-section 5.3.4).

Figure 8: A flow diagram showing the research design of the MAPPED project.
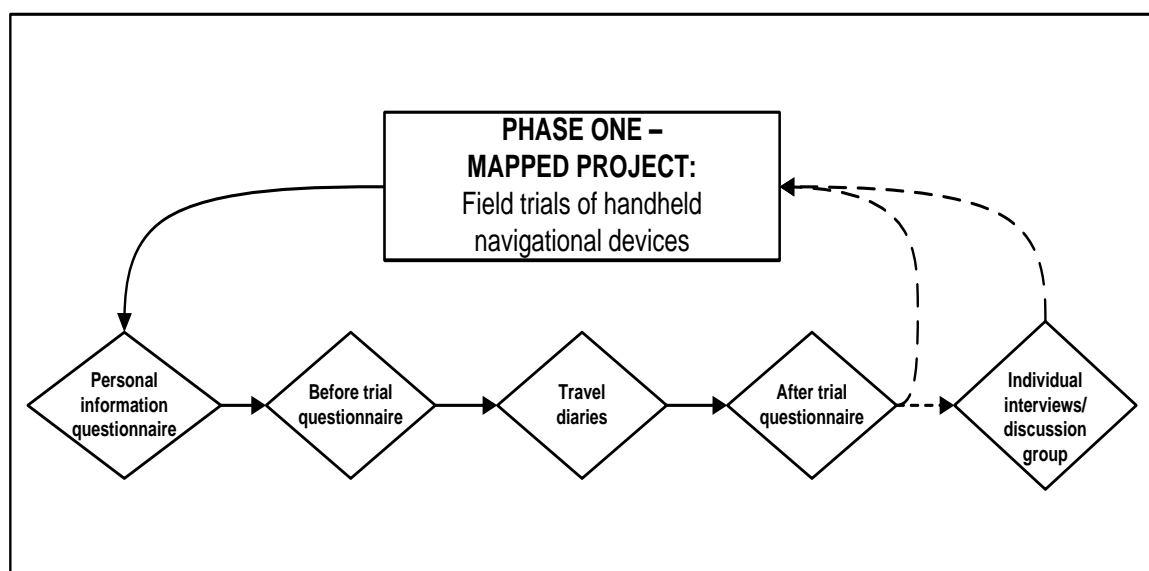
5.2.5.a Role as a researcher in the MAPPED project

As the researcher undertaking this thesis, the role in the research collaboration was to conduct stage two of the field trials, which involved a sample of older people aged 65 years old and over. Each stage of the field trials took place in succession, and the researchers from each of the three institutions were in regular contact so that lessons could be learnt from one another, as well as during each stage itself. This visibility between the stages of the field trials, and each of the researchers involved, was intentional so that each of the research teams or researchers could use the data as either a primary or secondary data source. As Table 6 suggests, in this case being directly involved in stage two meant this data was a primary source, whilst the data from the other stages could be analysed as secondary data. The following part of this chapter examines this involvement as a researcher in more depth by providing an account of the research journey undertaken during stage two of the MAPPED project (Op. Cit.) field trials.

Table 6: Table showing the stages of the MAPPED project field trials and whether they were a primary or secondary data source.

STAGE OF THE MAPPED PROJECT	PRIMARY/SECONDARY DATA SOURCE
One	Secondary
Two	Primary
Three	Secondary
Four	Secondary

5.3 The MAPPED project: Stage two of the field trials of the handheld navigational devices

This section explains how stage two of the MAPPED project (Op. Cit.) field trials, with a sample of older people aged 65 years old and over, was carried out. Throughout this section there are references to the other stages of the field trials, this allows the reader to comprehend both how and why changes were made to stage two of the field trials. Here there are four sub-sections. The first sub-section, 5.3.1, looks at how the participants were recruited and the pre-trial preparations. The second sub-section, 5.3.2, explains the design of the original approach to undertaking the field trials. The third sub-section, 5.3.3, focuses on how the technological shortcomings resulted in changes to the format of the field trials. The fourth sub-section, 5.3.4, discusses how the data collection instruments utilised for some stages of the field trials were adjusted in line with the challenges experienced by the research team at the Local Government Department during the first stage of the field trials.

5.3.1 Recruiting participants and pre-field trial preparations

Potential participants for stage two of the field trials were invited to take part through various local organisations and charities. In the first instance written details of the MAPPED project (Op. Cit.) were sent to the organisation or charity, via a letter or an email. This was followed up with a telephone call or an email asking if they would consider being involved. A number of local community organisations, including the local pensioner's forum and church groups, were also approached. Depending on the nature of the organisation, those who agreed to help recruit participants were either sent posters containing contact information to display, or a time and date was arranged for a presentation about the study to be given to the members. Those who expressed an interest in participating were then invited to an information session providing them with an opportunity to meet the University researcher, other participants, ask any questions they may have had, and time to contemplate their participation. The information session was structured to include a small talk about the study, give an overview of what would be expected of the participants, and also to clarify how the findings would be used (see, Appendix 13 for the information session programme).

Those who then agreed to take part in stage two of the field trials were given an information sheet (see, Appendix 14) which clearly outlined the aims of the study, the expectations of their participation, and the ethical considerations, such as how confidentiality and anonymity would be affirmed. They were asked to read the information sheet and if they still wished to take part in the study were asked to sign a consent form (see, Appendix 15). By signing the consent form the participants were confirming that they: had read and understood the information sheet; asked and had answered any questions; knew their participation was voluntary and could withdraw at any time without penalty; were agreeing to any interviews being audio and possibly video recorded; were assenting to the use of anoymised quotations; and would take part in the study. Before the participants agreed to take part in the field trials, they were informed that upon completing the trials they would each receive a fifty pound high street voucher. This was given to thank the participants for their time, as well as an incentive to encourage participation. This voucher and the travel expenses incurred by the participants, whilst taking part in the trials, were funded by the MAPPED project (Op. Cit.). It was considered appropriate to offer each of the participants a voucher as taking part in the trials involved a reasonable amount of time and may have caused them some disruption to their 'normal' social activities. This issue of using incentives in social research is picked up and explored in further detail, along with the other ethical considerations in Chapter Six (section 6.1).

5.3.2 Undertaking the field trials: The original approach

The field trials of the handheld navigational devices were originally designed to be conducted in a particular way. However, there were some concerns over the technological capabilities of the handheld navigational devices that ultimately resulted in the format of the field trials being adapted. This sub-section accounts how the original trials were going to be conducted, the problems experienced during stage one, and the changes that were made to the rest of the trials, in order to overcome the technological shortcomings of the handheld navigational device. Originally it was expected that after an initial training session all of the participants would be able to complete the trials on their own. If the participants had any questions or problems, then the principle researcher for each stage would be available via a telephone helpline service, which would run continuously during the trials. Initially then, the trialists were to be unaccompanied by the researcher, this was so that the trials would fit in with the participants normal everyday activities, as far as possible.

In this scenario the participants would, at the beginning of the trials, be given a handheld navigational device, a printed guide to the functions of the handheld, the helpline telephone number, a list of places to visit, and the travel diaries. They would then be requested to make use of the handheld navigational device and complete the travel diary over, at least, seven of the days during their pre-arranged trial period of between fourteen and twenty-one days. On these seven usage days the participants would be asked to make use of the handheld for at least two hours, thus each participant would have a minimum of fourteen hours in which they had used the handheld navigational device during their trial. In order to familiarise themselves with the device the participant would at first have to undertake specific tasks and visit certain places. Once they became more familiar with the technology, they would be given the opportunity to visit any of the places on a pre-determined list. Halfway through the trial each participant would either meet with, or receive a telephone call from the principle researcher. This would mean that the participants would have the opportunity to discuss, and hopefully, resolve any problems or concerns they were experiencing with the handheld navigational device, as well as withdraw their participation in the rest of the study.

5.3.3 Adapting to the technological shortcomings and changing the format of the field trials

There were several setbacks with the handheld navigational devices during stage one of the field trials. This meant that the design of the field trials had to be reconsidered, as it would not be possible to conduct them as outlined above. These setbacks stemmed from the beginning of the project when the problems during the development of the MAPPED software delayed the start of the field trials by several months. When the software was released and deemed ready for trial, further problems with the handheld navigational device, linked mainly to the poor signal strength of the Global Positioning System (GPS), were also discovered. The software was proving problematic, in the sense of the time it took to load a page, and the fact that the signal was continually poor or lost altogether. It was the combination of these problems that meant it was necessary to change the structure of the field trials. Stage one of the field trials proved to be much more complex and time consuming than was first imagined. This also raised ethical concerns over the safety of the participants. It was felt that there may be a greater chance that the participants were seen in the street struggling with the device for long periods of time, and this could increase their risk of becoming a victim of spontaneous crime. As this could put the participants at an unnecessary risk of crime, a decision was made for the rest of the trials to be conducted with the participants accompanied by a researcher. Inevitably, this change alone had significant implications for how the rest of the trials, including stage two, were to be conducted. As explored further in the following paragraph, the format of the trials was adapted to reflect these concerns.

The adaptations of the field trials meant that the tasks to be completed and the time spent using the handheld navigational device would remain the same as originally proposed. However, as previously stated the participants would now be accompanied by a researcher during the field trials. This had a dual purpose, on the one hand this would increase the security of the participants, and on the other it would also mean that the participants were able to seek immediate help if the handheld navigational device failed to work properly. This change did have an unintended negative impact though, it did mean an increase in the financial costing and the amount of time each trial would take. Therefore, in an attempt to reduce this, the University researcher made the decision to meet with the participants in groups of two or three, when possible. At this point it was also considered appropriate for each participant to undertake a mixture of theoretical journeys alongside the real journeys. These theoretical journeys involved the same type of information search as a real journey, yet eliminated the need to actually travel to and from a particular place, saving both time and monies. The participants from the Clinic in the

Republic of Ireland (stage three) were more severely impaired than the sample of people with disabilities from the South of England (stage one). Therefore, it was at this point decided that, in order to reduce the level of unnecessary stress on the participants, the total number of journeys that the participants from the Clinic were to complete would be minimal. Instead of completing several journeys, each of the participants from the Clinic undertook either a morning or afternoon session using the handheld navigational device to find their way around their study area, thus, they completed just one travel diary each. A positive effect of having the researcher present during the trials was that they were able to help the participants by filling in the travel diary details whilst the participant got to grips with the technology.

5.3.4 Adjusting the data collection instruments utilised for some stages of the field trials

The problems with the handheld navigational devices that postponed the start of data collection resulted in a reduced overall timeframe for the field trials. This delayed start, led the consortium to make the decision to replace the individual in-depth interviews to be completed by the sample of people with disabilities, with one collective discussion group. The discussion group was held at a consortium meeting in the Clinic in the Republic of Ireland, where the participants from the Republic of Ireland were invited to share their thoughts on the trials and the handheld navigational device. The sample of older people from stage two however, still took part in individual in-depth interviews after their field trials. This was possible because this stage of the project was an addition to the original project plan, and therefore the results of these interviews were not ultimately included within the MAPPED project (Op. Cit.) outputs. At the outset it was intended that all the participants would experience 'the field trials' in a homogeneous way, completing the same data collection instruments and the same number of trips, in order to facilitate a similar experience. Attempts were made, as far as possible; to keep the participants experience the same during the field trials. However, in some instances lessons were learnt from each stage and the appropriate actions were taken to improve the field trials that followed. An example of this was the avoidance of locations with bad GPS signal strength that were discovered during the field trials in the South of England. In the end, the use of two sets of data collection instruments (see, Appendices 4 – 12), the additional questions asked of the sample of older people during the individual interviews, and the use of both discussion groups and individual interviews, meant that not all of the participants completed the same data collection instruments. Figure 9 highlights which data collection instruments were completed by the participants for each stage of the field trials. This also meant that the participants of the field trials had a differing experience, depending on which stage(s) they participated in. This meant that the data from each

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stage was not comparable with that from other stages. For example, the stage one field trials were adapted half way through to take account of the technical difficulties, and the stage three trials were undertaken in a morning or afternoon session, rather than across several different days. Therefore, as examined within the next part of this chapter, ultimately only the findings from stage two of the field trials were analysed and drawn upon by this thesis.

Figure 9: The data collection instruments that were completed by each of the participants during the various stages of the field trials.
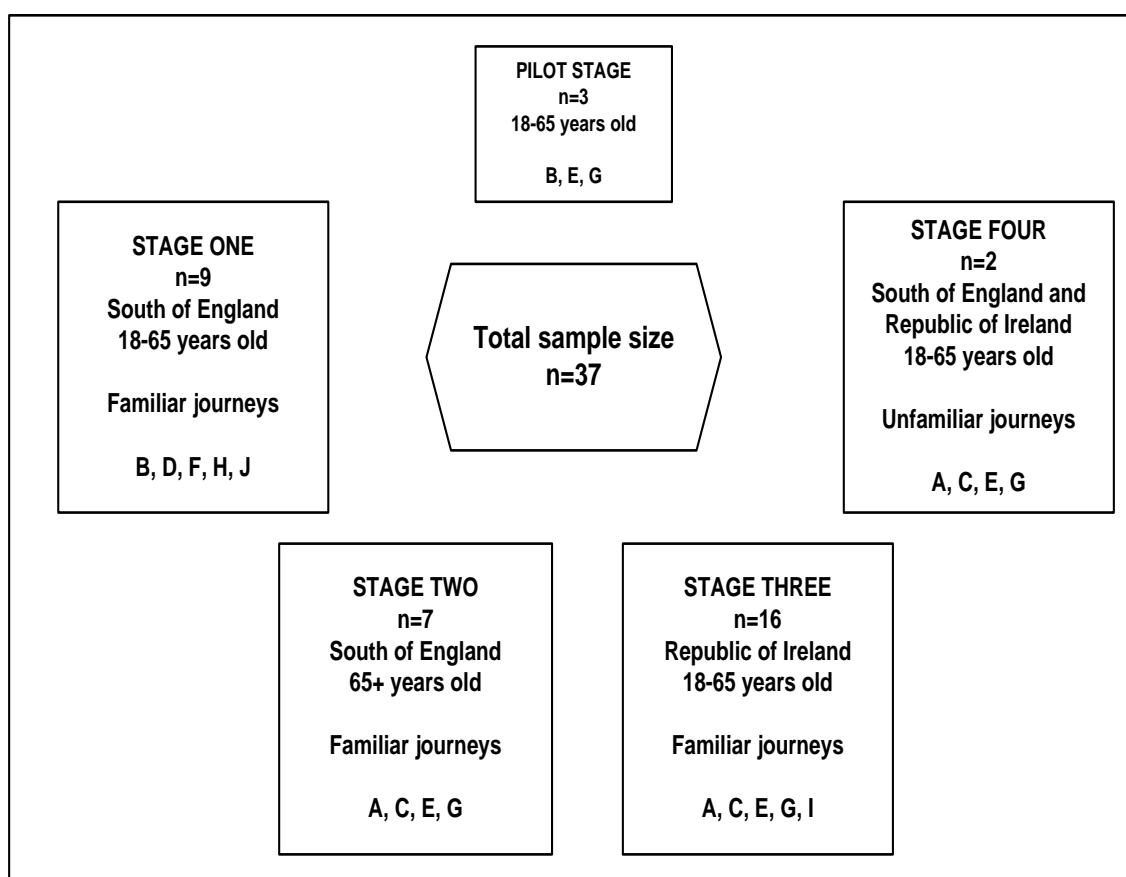
KEY:

A = Demographic and socio-economic information (1) – Appendix 4
B = Demographic and socio-economic information (2) – Appendix 5
C = Before trial questionnaire (1) – Appendix 6
D = Before trial questionnaire – Appendix 7
E = Travel diary (1) – Appendix 8
F = Travel diary (2) – Appendix 9
G = After trial questionnaire (1) – Appendix 10
H = After trial questionnaire (2) – Appendix 11
I = Discussion group
J = Individual interview – Appendix 12

5.4 Reflections from Phase One: The MAPPED project

This section offers reflection on phase one of data collection, the MAPPED project (Op. Cit.). There are four sub-sections. The first, 5.4.1, explains the limitations of the field trial data. The second sub-section, 5.4.2, looks at the reasons why only the data from stage two informs this thesis. The third sub-section, 5.4.3, looks at the reasons for getting involved in the MAPPED project (Op. Cit.), providing a critical evaluation of case-study research. The fourth and final sub-section, 5.4.4, provides a summary of the MAPPED project (Op. Cit.).

5.4.1 The limitations of the field trial data

As the MAPPED project (Op. Cit.) began in September 2004, it was already in the latter stages when the University researcher became involved in August 2007. This meant that much of the design process and many of the decisions about the way the handheld navigational devices were to be tested had already been made by the consortium. Therefore, upon reflection, there were limitations to how the collaboration would work and the nature of the input from the University researcher. Notably, these limitations meant that the University researcher had less involvement in the research strategy and design of data collection instruments than was considered ideal. It also meant that there was a need to adhere to the time pressures and deadlines imposed by the MAPPED project (Op. Cit.) consortium. In combination with the delayed release of the MAPPED software, this meant that, in the end, the time set aside to conduct the field trials was heavily reduced. This then had further ramifications for the project, in terms of the timing and financial budget. It was not possible to extend the deadline for the evaluation report required by the consortium, and thus the requirements of the initial data analysis for the MAPPED project (Op. Cit.) output were simplified. The financial budget and the time that the MAPPED software system would remain 'live', also limited the total number of participants that were able to take part in the field trials. These limitations and, as discussed in the previous sub-section of this chapter, the technological difficulties experienced, meant that it was not possible to conduct the trials in the homogeneous manner originally specified. The data collected during the field trials of the handheld navigational devices was therefore not as in-depth as had been anticipated, as discussed in the following paragraph.

5.4.2 The MAPPED project data: To analyse or not to analyse….?

The data collected during the field trials then proved less insightful than had first been anticipated, especially as only the sample of older people from stage two had taken part in an individual in-depth interview. The data collection instruments given to the participants were exactly the same for stages one and three; however, additional questions were added to the instruments used during stage two. This meant that although some of the data was comparable, there were limitations to the amount of data that could be compared. As there was no direct involvement by the University researcher in the data collected during stage one, three and four, this could only be analysed as secondary data. Given the limitations over the amount of comparable data from the MAPPED project (Op. Cit.), and the focus of this thesis on older people, a decision was made to only analyse the data from stage two for this thesis. This was felt acceptable given the richness in comparison to the data from the other stages, and that the initial analysis undertaken for MAPPED project (Op. Cit.) output revealed similarities in the findings from all of the stages.

5.4.3 A mixed method case-study - why get involved in the MAPPED project?

> *"Mixed method research is often referred to as multi-strategy research implying the application of a number of different research strategies related to a complex range of research questions and a complex research design".*

> Brannen, 2005: 4

This sub-section looks at the reasons why the University researcher became involved within the mixed method MAPPED project (Op. Cit.). If researchers are required to address the needs of research stakeholders, this can impact research questions and methods, and may often result in researchers having less lee-way over the direction of their work (Brannen, 2005: 6). The employment of a mixed method approach can avoid this, in the case of this study, for example, it means that although the design of the MAPPED field trials was rather complex, the potential level of data that could be drawn upon was vast. Therefore, mixed methods research offers both, "opportunities and risks" to researchers that are willing to experiment with such a method (Brannen, 2005: 6). Involvement in the MAPPED project (Op. Cit.), and the agreement to extend the trials to include a sample of older people, were both established during a late stage in the MAPPED project (Op. Cit.) itself. Thus, as already examined within this chapter; there were some limitations to how the composition of the collaboration could be structured. The

design of the research instruments for the whole project was within the remit of the Local Government Department in the South of England, although the research team at the Clinic in the Republic of Ireland and the University researcher were also able to discuss and revise the questions on the data collection instruments. However, differing research agendas meant that despite the best intentions of all parties, compromises had to be made; thus, ultimately two sets of instruments were utilised.

> *"We study a case when it itself is of very special interest. We look for the detail of interaction with its contexts".*
>
> Stake, 1995: xi

A case-study is the "study of the particularity and complexity of a single case", where ultimately knowledge of "its activity within important circumstances" is accomplished (Stake, 1995: xi). Case-study research often focuses on a single community, a single organisation, a single person, or a single event, and utilizes both qualitative and quantitative methods of data collection (Bryman, 2001: 47-8). This sub-section assesses why this thesis focused on a single form of technology, the case-study of handheld navigational devices, drawing upon various qualitative and quantitative methods to support. The "distinctive need for case studies arises out of the desire to understand complex social phenomena" (Yin, 2003: 2). As a method of collecting data, the use of case studies means that researchers are able to "retain the holistic and meaningful characteristics of real-life events" (Yin, 2003: 2). However, being able to distinguish whether or not case studies are an appropriate research strategy is relatively complex (Yin, 2003: 5-9; and Bryman, 2001: 48-49). A case-study is made up of three key parts: research questions are of an exploratory nature; the researcher having no control over behavioural events; and the research focus being on contemporary rather than historical events (Yin, 2003: 5-9). It is the "idiographic approach", where the researcher generally illustrates the "unique features of the case" as a matter of interest that differentiates a case-study (Bryman, 2001: 49). These explanations mean that the data collected within the MAPPED project (Op. Cit.) fit within the realms of a case-study. Although this case-study employs mixed methods of data collection, qualitative data was prevalent. This type of research strategy has been linked to building the relationship between theory and research through an inductive approach (Bryman, 2001: 49). However, this study takes an iterative approach to connecting data and theory, as it involves a continuous cycle back and forth, where reflection informs the further stages of data collection and revision of theory. This is evident in the work of grounded theorists (Bryman, 2001: 10), and is explored in more detail within Chapter six (section 6.3). The aim of case-study research is to examine intensively a single case, which is then engaged within appropriate theoretical analysis (Bryman, 2001: 51). The particular strength of the method is its "ability to deal

with a full variety of evidence" (Yin, 2003: 8). However, there are several criticisms too. Case-study research is widely criticised for a lack of rigour (Yin, 2003: 10). This includes, not following "systematic procedures", using "equivocal evidence", and allowing "biased views to influence the direction of the findings and conclusions" (Yin: 2003: 10). These criticisms are valid; however, many of them are easily avoidable with careful planning and attention to detail. Case-study research has also been criticised as it is very rarely generalisable to whole or part populations (Yin, 2003: 10; Bryman, 2001: 51). The point of case-study research is to focus on a single case in greater detail. The "goal is to expand and generalise theories through analytic generalisation", rather than generalise the findings to the population as a whole (Yin, 2003: 10). Thus, for the purposes of the MAPPED project (Op. Cit.) a mixed method case-study approach was considered a functional and necessary approach.

5.4.3 Summary of the MAPPED project

This chapter has so far outlined details of the MAPPED project (Op. Cit.), including the background and aims of the project, the structure of the case-study research collaboration, the stages and methods of data collection, who took part in the field trials and how they were recruited, as well as a reflexive account of the data collection. Working on a 'live' project where a technological product was being tested within the local community means that this study has both a practical and theoretical output. The implementation of technological products designed with people with disabilities and older people in mind, could make a real difference to the lives of many people within society, both on a local and national scale. The MAPPED project (Op. Cit.) collected, primarily, qualitative data, and as such was designed to give people with disabilities and older people a portal where their 'voices' could be heard, in order to discuss the topics of mobility, travel, transport and technology. The MAPPED project (Op. Cit.) was not meant to be representative of all older people; instead the intention was to provide a valuable insight into the thoughts, feelings and experiences of this particular sample. Thus, the findings are not generalisable to the population as a whole, but highlight some of the everyday issues that older people in society today experience. Despite the problems experienced during the MAPPED project (Op. Cit.), some interesting findings were evident from the field trials. These findings are discussed within Chapters Seven and Eight. At this point though it should be noted that, all of the participants who took part in stage two recognised the future potential of this type of handheld navigational device, stating that with further research and development the accessibility information would be a really useful tool. The next section gives more detail about phase two of the empirical data collection, the Getting Out and About project.

5.5 Data collection: Phase two – The Getting Out and About project

Details of the Getting Out and About project are discussed in this section. As was stated in the previous section there were limitations to the data collected during the MAPPED project (Op. Cit.). The Getting Out and About project was therefore designed to evaluate and counteract some of the limitations of the MAPPED project (Op. Cit.). This part of the chapter is split into five sub-sections. The first, 5.5.1, examines the shortcomings of the data from the previous phase of data collection, the MAPPED project (Op. Cit.), and how these ultimately lead to the development of a more rigorous theoretical and methodological basis for this second phase. The next sub-section, 5.5.2, explains the method of data collection utilised during the Getting Out and About project. Sub-section 5.5.3, looks at why the demographic backgrounds of the participants sampled during the Getting Out and About project was widened. The fourth sub-section, 5.5.4, discusses the development of the conceptual framework for mobility in later life as part of the Getting Out and About project. The fifth part, 5.5.5, provides a summary of the Getting Out and About project.

5.5.1 The Getting Out and About project: Data shortcomings, iteration, and theoretical underpinnings

The outcomes of the stage two field trials for the MAPPED project (Op. Cit.) have a direct relevance to the rationale for changing the method of data collection used during the Getting Out and About project, and so are examined more closely within this sub-section. The University researcher led the investigation for the stage two of the field trials for the MAPPED project (Op. Cit.). This stage involved seven older people aged 65 years old and over, testing the handheld navigational devices. Table 7 shows the demographic and socio-economic information of the sample of older people that took part in the field trials of the handheld navigational devices. This small sample reflects a wide age range of participants, as well as a fairly equal gender split. However, all of the participants in this sample, similarly, considered themselves to be fairly active, or active; in good, or fairly good health; and were of white British origin. Due to financial and time constraints, the sampling criteria of the field trials specified that participants must have some prior experience of using either the internet or a mobile telephone. Thus, it can be said that this sample of seven participants does not draw from a diverse population of older people. Given that an aim of the Getting Out and About project was to develop our understanding of travel behaviour and information and communication technology and its pertinence in later life. It was considered crucial to gain a better insight of the factors that impact travel-

based mobility in later life. In order to achieve this, it was important for the Getting Out and About project to encompass a wider sample of older people from a variety of demographic and socio-economic backgrounds.

Table 7: The demographic information and ability of the participants from stage two of the MAPPED project field trials of handheld navigational device.

Participant number	1	2	3	4	5	6	7
Age	70	80	67	73	66	71	67
Gender	Male	Male	Female	Female	Female	Male	Female
Level of mobility	High	Fair	High	Fair	Low	High	High
Level of vision	High	Fair	Fair	Fair	Fair	High	High
Level of hearing	High	High	High	High	High	Fair	Low
Level of care or assistance required	None	None	None	None	Part-time	None	None
Current or last occupation	Alarm Engineer	Dentist	Reprographic worker	Secretarial/ clerical	Typist/ stock control clerk	Carpenter/ builder	Secretarial/ clerical
Ethnicity	White - British	White - British	White - British	White - British	White - British	White - British	White - British
Marital status	Divorced	Married	Widowed	Married	Married	Married	Married
Self-rated level of activity	Fairly active	Active	Active	Fairly active	Fairly active	Fairly active	Active
Self-rated level of general health	Good	Good	Fairly good	Fairly good	Fairly good	Fairly good	Fairly good
Frequency of use of technology such as the internet and mobile telephone	Daily	Weekly	Daily	Daily	Daily	Daily	Daily

The technological shortcomings of the handheld navigational devices and the changes to the format of the field trials, meant that the data from the MAPPED project (Op. Cit.) proved less comprehensive than first anticipated, as this chapter has already considered. In light of the limitations of the data from the field trials of the MAPPED project (Op. Cit.), the original plans for phase two of the data collection were reconsidered. The proposed method for collecting data during phase two was originally to complete a number of focus groups with a sample of older people. However, in order to enhance the findings from the field trials of the MAPPED project (Op. Cit.), it was considered more appropriate to utilise individual in-depth interviews. The participants who took part in the MAPPED project (Op. Cit.) were all of white British origin (see, Figure 8). Therefore, it was an aim of the Getting Out and About project to draw upon a wider sample of older people from a broader range of life circumstances, to include those with health problems, disabilities, and ethnic minorities. These aims of obtaining a wider sample of older people for phase two were to an extent achieved, as Appendix 16 demonstrates. Thus, it was felt that the group dynamics of the focus group method may unintentionally intimidate precisely the participants that were sort for phase two. The focus group method provides an opportunity to enrich data through a detailed exploration of the key issues arising from existing data (Ritchie and Lewis, 2003: 171). Therefore, focus groups (see, Appendix 17 for the original schedule) could have been used to investigate the significant issues that were surfacing from the MAPPED project (Op. Cit.) data. These plans, however, were reconsidered when it became obvious that the data from the MAPPED project (Op. Cit.) was less detailed than first anticipated. Given the limitations, ultimately individual interviews were considered more suitable.

Gaps in the theoretical interpretations and understanding of the concept of mobility, as highlighted in the literature review (see, Chapter Three), were also reconsidered at this point. The iterative nature of this qualitative study meant that it was possible to reconsider the direction of the Getting Out and About project and make the appropriate changes to the methodology and data collection instruments. Choosing a mixed method research strategy can be for practical rather than theoretical reasons, and when this happens, such research can lack theoretical grounding:

> *"In so far as the choice of a mixed method research strategy is determined by practical rather than disciplinary influences, then approaches to theory become more eclectic. There is a danger that researchers who are not sufficiently theoretically grounded before they do their research will import theory when they write it up in order to strengthen or support a particular set of findings. Theory should also inform the research questions one poses at the start of a project".*

Brannen, 2005: 5

After the MAPPED project (Op. Cit.) it was felt that this study could be in very real danger of doing exactly this, and so it was necessary to find an appropriate way forward in order to allow theory to inform the research questions. It was then felt essential to adhere to this caution from Brannen (2005: 5), as well as the findings from the literature review which highlights that there is a gap in understanding the notion of mobility and its complexities within the information age. Ultimately, this led to the recognition that the study could develop a conceptual framework for mobility in later life, and as this was something which was at that point missing from the existing literature and theory, this change then strengthened the theoretical underpinnings of this study.

5.5.2 The Getting Out And About project: Method of data collection

The Getting Out and About project involved individual in-depth interviews with twenty older people aged 65 and over. The interview schedule (see, Appendix 18) also included two hypothetical vignettes. The hypothetical vignettes were used within the interviews to place the participants in different mobility situations, and this enabled the University researcher to explore their feelings over the potential of information and communication technology for assisting later life travel-based mobility. Vignettes are "short stories about hypothetical characters in specified circumstances, to whose situation the interviewee is invited to respond" (Barter and Renold, 1999: 1). The method of using vignettes within qualitative interviewing can "elicit perceptions, opinions, beliefs and attitudes from responses or comments to stories depicting scenarios and situations", allowing a "systematic comparison of individual responses to different behaviours" (Barter and Renold, 1999: 2-3). However, there are drawbacks to employing this method, as "asking about what a third party 'ought' to do in a given situation is not the same thing as asking respondents what they themselves think they ought to do" (Finch, 1987: 113).

5.5.3 The Getting Out and About project: Widening the sample - access and the recruitment of participants

A period of contemplation followed the completion of the MAPPED project (Op. Cit.) which meant that it was possible for the University researcher to think through the limitations of the data collected. This enabled changes to be made to the second phase of data collection in order to improve the academic rigour, reliability, replicability and validity of this research. The recruitment of the participants for the Getting Out and About project was completed in a similar vein to the MAPPED project (Op. Cit.). Access was sought through local organisations and charities, however as there was less restriction over time,

a wider section of participants were approached for the second phase. Again, Gatekeepers were sent printed details about the study, and, if they agreed, posters or a presentation about the study were then given to the relevant members or groups associated with that organisation or charity. Potential participants who expressed an interest in taking part in the interviews were supplied with an information sheet (see, Appendix 19), which showed details of the study and informed them as to the specificities of their participation. Those who wished to take part in an interview after having read the information sheet were asked to nominate a date, place, and time for the interview to take place. In order that the participants would feel as comfortable as possible during the interview (as discussed in, Elwood and Martin, 2000) they were asked to specify where they would like the interview to take place: at the University; in their own home; or another public place, such as the local library. Prior to the start of the interview the participants were given the opportunity to ask any further questions regarding the study. They were then asked to sign the consent form (see, Appendix 20). Those who participated in the interviews were given further information sheets and asked to pass on to their friends. This attempt to use snowballing as a method of recruiting participants resulted in the recruitment of six of the twenty participants of the Getting Out and About project.

5.5.4 The Getting Out and About project and the development of the conceptual framework for mobility in later life

The conceptual framework for mobility in later life was further developed from the findings of the Getting Out and About project. The version presented in Chapter Three (Figure 4) is a culmination of the existing academic thinking around mobility. The findings of the Getting Out and About project are also combined with those from the literature review in order to build a holistic overview of the factors that impact mobility. This version of the conceptual framework is presented within Chapter Nine (Figure 11). The process in which the conceptual framework was developed is outlined in greater detail within the following chapter (sub-section 6.3.6).

5.5.5 Summary of the Getting Out and About project

This sub-section of the chapter has outlined the methods for collecting data, the sample, and how and where the participants were recruited for the second phase of data collection, the Getting Out and About project. The other main avenues that have been explored in this sub-section are; the reasons why the data collection instrument for phase two was changed from focus groups to individual interviews, and how this ultimately

strengthened the theoretical underpinnings of this study through the development of a conceptual framework for mobility in later life.

5.6 Summary

Chapter Five is the first of the two methodological chapters. It has examined the research questions and the research design that underpin this thesis. Thus, providing a detailed reflexive account of the trajectory of the two distinct phases of empirical data collection: phase one, the MAPPED project (Op. Cit.), and phase two, the Getting Out and About project. By explaining the parameters of the MAPPED project (Op. Cit.) and the Getting Out and About project, this chapter has outlined the reasons why changes were made to the original methods and data collection instruments used within this research. The chosen qualitative, interdisciplinary approach means that this research evolved iteratively, learning and developing from each of the stages along the way. The following chapter explores the remainder of the methodological issues, focusing on the main ethical considerations, evaluating the data collection instruments utilised, and providing details of the data analysis and dissemination strategies.

Chapter 6: Methodology – Ethics, analysis and dissemination

Following on from the previous chapter, this part of the thesis evaluates the methodological decisions that underpin the empirical data collected for this thesis. The chapter is formed in five sections. The first section, 6.1, explores the ethical considerations. The second section, 6.2, evaluates the selected data collection instruments. The third section, 6.3, discusses the approach to the analysis of the data. The fourth section, 6.4, outlines the plan for dissemination, and the fifth section, 6.5, is a summary of the chapter.

6.1 Ethical considerations

Undertaking qualitative research with older people raises a range of ethical dilemmas for the researcher (Kayser-Jones and Koenig, 1994: 15). These ethical concerns include considerations that are universal to research with human subjects, as well as a number of issues that are specific to research with older people (Kayser-Jones and Koenig, 1994: 15). Before undertaking the empirical data collection, an ethical application and a risk assessment outlining a comprehensive account of the ethical issues within this study, was submitted for approval to the University of Southampton, School of Social Sciences, Ethics Board (for a copy see, Appendix 3). The original methodological plans for the second phase of data collection, the Getting Out and About project, were altered after completing the first phase, the MAPPED project (Op. Cit.), as explained in the previous chapter. This was to ensure a wider sample of older people from various demographic and socio-economic backgrounds were included, and meant the methodological instrument was changed from focus groups to individual interviews. The ethics committee were informed of this change by letter (see, Appendix 21 for a copy of the letter), and once they had approved these modifications, the data collection for the Getting Out and About project commenced. Ethical issues must also be considered during and after the empirical data collection takes place. Therefore, this part of the chapter is written reflexively, and is divided into eight sub-sections, which explore the range of ethical issues that underpin this research. The first sub-section 6.1.1 discusses older people as a 'vulnerable' group of participants; sub-section 6.1.2 looks at the negotiation of access to the participants and the role of Gatekeepers; sub-section 6.1.3 examines informed consent; the fourth sub-section 6.1.4 explores maintaining confidentiality and anonymity; sub-section 6.1.5 focuses on the use of incentives; the sixth sub-section 6.1.6 is about avoiding deception and coercion; sub-section 6.1.7 looks at maintaining personal security

and avoiding stress; and the final sub-section 6.1.8 focuses on the right for participants to withdraw without penalty.

6.1.1 Working with a 'vulnerable' group

Older people can be considered a 'vulnerable' group of research participants (Kayser-Jones and Koenig, 1994: 15). It is important that research does not infringe on the autonomy, independence, or quality of life of the older participants. Therefore, the empirical data collection for this thesis was designed in a way that would 'give older people a voice' rather than promote insecurities. The use of qualitative methods allows a reciprocal bond to develop between the researcher and the participant. This helps to build a relationship of trust and encourages the 'voices' of older people to be heard.

6.1.2 Negotiating access and the role of Gatekeepers

For both phases of the empirical data collection, groups of older people were accessed through several local community organisations, charities and church groups within the South of England. The Initial contact with each organisation was facilitated through a Gatekeeper. A Gatekeeper is a professional or administrator in a position of power within an organisation, for example, the manager, secretary or chair (Bulmer, 2003: 50-51). Gatekeepers are used to "smooth the paths" to participants (Bryman, 2001: 295) by often providing access to a large number of possible participants, and helping to filter the willing from the unwilling. The use of Gatekeepers has been criticised for limiting the variety of participants sought, however the samples required within this study were convenience and purposive and so this is not applicable. The Gatekeepers utilised in this study were in the first instance sent printed details about the research. If the Gatekeeper then agreed, a poster or a presentation about the study was displayed at, or highlighted to the members of the group, organisation or charity. The individual members of the group, organisation or charity were then able to decide whether or not they wished to take part in the research.

6.1.3 Informed consent

Informed consent means that those invited to participate in research are given detailed information about the nature and purpose of the research, including details of any personal risks and arrangements for maintaining confidentiality, and be able to choose freely whether they take part or refuse (Bulmer, 2003: 49). Informed consent procedures

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should balance the "risk of research participation against the potential benefit of the research" (Kayser-Jones and Koenig, 1994: 15). Those being researched have a right to know what they will be expected to do and how the data will be used, therefore they should give their consent (Bulmer, 2003: 49). Thus, within this study all of the potential participants received both written and verbal information about the study. Initial invitations to participate were through an information sheet (see, Appendix 14 and 19). The information sheets explained the purpose of the study, gave a brief description of the design and timescale of the data collection, indicated how the findings would be used, and stated the measures to ensure confidentiality and anonymity. During the MAPPED project (Op. Cit.) an information session was run by the University researcher, this gave potential participants the opportunity to learn more about the study and ask any questions before making a commitment to take part (see, Appendix 13 for a copy of the schedule). It was also necessary to emphasise the exploratory nature of the MAPPED project (Op. Cit.) to the potential participants, so as not to raise expectations about the future availability of this type of technology. After reading the information sheet, and where applicable attending the information session, individuals were given the opportunity to ask further questions. The individuals who agreed to take part were then asked to approve their participation by signing the consent form (see, Appendix 15 and 20).

6.1.4 Confidentiality and anonymity

Maintaining the maximum level of confidentiality and anonymity is essential in all research. During this study several measures for maintaining confidentiality and anonymity were put in place. The names and addresses of the participants would not be used in any of the reports or written communication resulting from the study. When using quotations or demographic information the participants would be identified and distinguishable by their sex and age rather than a name or a pseudonym. Access to the participant's names, addresses and the data from the study was restricted to the researcher, supervisory team and examiners sought by the University of Southampton. The MAPPED project (Op. Cit.) data was also available to the members of the research team based at the Local Government Department, however they did not access this data as the University researcher provided them with some analysis for their outputs.

6.1.5 Incentives to participate

Incentives for participation were given to the participants of the MAPPED project (Op. Cit.) in order to encourage them to complete the field trials. Each of the participants of the

MAPPED project (Op. Cit.) was given a £50 high street voucher, which was considered an incentive to participate and a thank you for their time. The vouchers were justified as the field trials were considered as potentially causing some disruption to the participants' 'normal' social activities, as they lasted for a reasonable period of time. However it was also necessary to inform the participants at the start of the field trials, both verbally and in written format through the information sheet, that they would only receive the voucher upon successful completion of *all* of the stages of the field trial. Any travel costs for trips that are made solely for research purposes were also reimbursed. The MAPPED project (Op. Cit.) funding covered these financial costs. No incentives were used during the Getting Out and About project.

6.1.6 Deception and coercion

In order that the participants were fully aware of what their involvement in the research would entail, several steps were put in place. As previously stated, potential participants were firstly given an information sheet detailing the research purpose, methods and outputs (see, Appendix 14 and 19). Potential participants for the MAPPED project (Op. Cit.) were also invited to an information session (see, Appendix 13), where they received more information about the study, an overview of what would be expected of them if they decided to take part, and the opportunity to meet the research team and ask any questions. If they then agreed to take part in the study, they were asked to sign a consent form (see, Appendix 15 and 20). The participants were given a copy of the University researchers contact details and encouraged to keep a copy of the information sheet for their reference. At any point during their involvement in the study the participants were able to ask questions or voice any concerns that they had about the research, and they were also able to withdraw their participation by contacting the University researcher. It was possible to conduct individual risk assessments to ensure that the participants were fit for their participation in the study, and their needs safeguarded; although it was unnecessary during this study. The participants who successfully completed the MAPPED project (Op. Cit.) were given a £50 voucher. This could be interpreted as 'impeding' the participant's right to withdraw without penalty, particularly considering the state pension in 2009 was £95.25 a week for a single person and £152.30 for a couple[31]. However, the participants were informed on several occasions that in order to receive the voucher they would have to complete all stages of the field trials and that, if they did not, it would not affect their right to withdraw. As the field trials required a period of sustained commitment from the participants the incentives used within this study were not deemed too

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[31] See, http://www.pensionsorter.co.uk/statepension.cfm

extravagant, instead the £50 voucher was given as a thank you for the participant's time and valuable contribution to the study.

6.1.7 Personal security and stress

Those participating were not considered to be under any significant risk as the data collection was undertaken during daylight hours and in a public place. The study did not cause the participants distress, discomfort, inconvenience or other adverse effects, however, in the extreme event of this happening the participants were advised to contact the University researcher via the details on the information sheet.

6.1.8 The right to withdraw without penalty

Throughout the data collection the participants were reminded, both by the University researcher and on the data collection instruments, that they had the right to withdraw their initial consent to participate without receiving any penalty. However, the participants of the MAPPED project (Op. Cit.) were reminded that if they did withdraw, before completion of all the necessary stages of data collection, then they would not be eligible to receive the incentive voucher. Each participant was given an information sheet before deciding to participate in the study; they were encouraged to keep the sheet and reminded that if they wished to withdraw their consent they could contact the University researcher directly using the details on the sheet. This section has explored the ethical concerns connected to the data collection of this study. The rationale for the choice of methodology is discussed within the next section.

6.2 Evaluation of the selected data collection instruments

The data collected during the two phases each had a different purpose. Both phases shed light on the different research aims and questions, together building the whole picture outlined by this thesis. In this section the instruments used during both phases of empirical data collection are critically appraised in terms of whether they provided the data anticipated. This section is split into three sub-sections: sub-section 6.2.1 looks at the use of questionnaires; sub-section 6.2.2 focuses on travel diaries; and sub-section 6.2.3 explores the use of semi-structured individual in-depth interviews.

6.2.1 Questionnaires

During the MAPPED project (Op. Cit.) three separate questionnaires were used. The personal information questionnaire gathered demographic and socio-economic information. The before trial questionnaire was designed to gauge information, such as the participants access to and use of technology; use and satisfaction with local transportation systems and services; sources of travel information; and attitudes towards the handheld navigational devices before the participants had taken part in the field trials. The after trial questionnaire served as an evaluation of the handheld navigational device by following up on similar questions to the before trial questionnaire. This measured whether the participants had changed their attitudes towards the technology after having had the chance to use it. All three questionnaires were designed to include a mixture of open and closed ended questions, thus collecting facts and opinions from the participants (Denscombe, 2007: 155). Demographic and socio-economic data about the participants of the Getting Out and About project was also collected through a questionnaire. Questionnaires are a quick and inexpensive way to obtain information about a sample of people (Bryman, 2001: 129). There are many drawbacks to using questionnaires as a tool for collecting data: these include not being able to prompt the participants; risk of missing data; low response rate; and not being able to ask too many or too difficult questions (Bryman, 2001: 131). However, these criticisms were greatly reduced in this study as the sample for both of the projects were relatively small; making it much easier to monitor which questionnaires had been completed and by which participants. Also, the use of several different instruments during the data collection meant that there were several chances to capture the range of data required if it was missed from the questionnaires. Using questionnaires in both of the projects proved a fast and effective way of recording the demographic and socio-economic information concerning the participants.

6.2.2 Travel diaries

Within transport planning, research travel diaries have been used for sometime as a method of recording, "information about all journeys made over a specified period in a diary", an example of which is the National Travel Survey (Corti, 1993: 2). Within the MAPPED project (Op. Cit.), the traditional travel diary method was adapted to suit the aims of the field trials. The travel diaries used within the data collection created an image of each individual participant's experience of the handheld navigational device during the field trials. A journey is a "one-way course of travel having a single purpose"; however, any one journey may entail the use of one or more modes of transport (Butcher and Eldridge, 1990: 33). Thus, for the purposes of the MAPPED trials, a journey meant getting

from point A to point B, by whatever means was necessary. The participants used the handheld navigational devices to undertake as many journeys as they were able to, during the field trials. Each journey and the modes of transport that the participants used were recorded in a separate travel diary. These travel diaries also enabled the participants to log: where they were going from and to, any problems or progress they had experienced with the handheld navigational devices and any thoughts on how they felt the device could be improved in the future. Using diaries as a method of data collection is essential when collating "items that are easily forgotten" especially when they occur frequently (Butcher and Eldridge, 1990: 25). Therefore, this method proved suitable for logging precisely what happened during the field trials of the handheld navigational devices. As a method of collecting data, though, diaries have been criticised as they are prone to a poor response rate, under-reporting and incomplete information (Corti, 1993: 3; Bryman, 2001: 138-9). In order to avoid this, careful consideration must be given to the structure of this instrument. It has been argued that the most reliable method of obtaining information is a period of diary keeping, followed up by an interview in which the participants are asked questions about the diary (Corti, 1993: 1-4). Thus, after taking part in the field trials of the handheld navigational devices, all of the participants of stage two were asked to take part in a follow up individual in-depth interview.

6.2.3 Semi-structured individual in-depth interviews

Semi-structured individual in-depth interviews were utilised during both phases of data collection. Interviews are the most suitable method "when the researcher needs to gain insights into things like people's opinions, feelings, emotions and experiences" (Denscombe, 2007: 174). The interviews for the MAPPED project (Op. Cit.) gave the University researcher an opportunity to follow up with the participants after they had taken part in the field trials, and explore in further detail, the participants: travel needs, expectations and problems; awareness, access and use of technology; and sources of travel information. During the Getting Out and About project the interviews explored travel behaviour, use and access of information and communication technology and the forms of mobility in later life. Semi-structured interviews are flexible so that the interviewee has enough scope in how to answer, and so that the interviewer is able to direct questions both towards and, if necessary, slightly away from the guiding topics (Bryman, 2001: 314). All of the interviews were audio recorded and then transcribed for analysis in the computer software package 'NVivo'. The following section contains more details on the analysis of the empirical data.

6.3 Data analysis

Within this part of the chapter, the approach used to analyse the empirical data collected during the MAPPED project (Op. Cit.), and the Getting Out and About project, is outlined. With the exception of the questionnaire and travel diary data from the MAPPED project (Op. Cit.), and the demographic and socio-economic information about the participants of the Getting Out and About project, the data collected during this study was qualitative. The collection and analysis of qualitative data is often a lengthy and complex journey, whereby the researcher is trying to make sense of a subject through the participants' experiences (Charmaz, 2007: 1-2). It is fundamental to the success of qualitative research projects that the approach to the collection and analysis of the data be considered in advance of it being undertaken. As is explained later in this chapter, a grounded theory approach was chosen as it gave the University researcher the most flexibility in terms of allowing each stage of the research to inform the next one. This section is split into six sub-sections. The first sub-section, 6.3.1, describes a grounded theory approach to the collection and analysis of the empirical data. The second part of the section, 6.3.2, provides an overview of the philosophy of this constructionist grounded theory approach, as well as the reasons for choosing it. Sub-section, 6.3.3, explains the role of the reflexive researcher. The fourth sub-section, 6.3.4, looks at the methods used within this research to analyse the empirical data collected during the MAPPED project (Op. Cit.) and the Getting Out and About project. This includes specific details about the treatment of the data and the computer software that was used during the analysis. The fifth part, 6.3.5, explores the way in which the thematic analysis of the qualitative data was conducted. The sixth and final sub-section, 6.3.6, explains how the conceptual framework was used as a tool in the analysis of the empirical data.

6.3.1 A grounded theory approach

This research utilised a grounded theory approach in the collection and analysis of the empirical data. Originally outlined by Glaser and Strauss (1967), a grounded theory approach means that the researcher identifies any logical groupings, and the relationships between them, within the data (Spencer, Ritchie and O'Connor, 2006: 201). Grounded theorists argue that the research process is not linear in practice, the iterative nature of qualitative research means that ideas should be noted when they come to the researcher, even if this is late in the process (Charmaz, 2007: 10). The iterative approach means that the data collection and analysis happen simultaneously, whilst continually referring to one another (Bryman, 2001: 390). This approach means that throughout the research process

the researcher has total flexibility over the direction of the study, adapting in line with that which is discovered along the way. Thus, a grounded theory approach is suitable for the analysis of qualitative research as it allows the researcher to think through all aspects of the process, learning from mistakes as well as successes. A grounded theory approach is inductive, meaning that theory is developed from the data (Bryman, 2001). Over time, the grounded theory approach has undergone several transformations and it is, therefore, now difficult to provide a definitive account of it (Bryman, 2001: 390-1; Charmaz, 2000). After developing the initial framework of the approach, Glaser and Strauss, "developed grounded theory along different paths" (Bryman, 2001: 390). Glaser felt that Strauss (see, Strauss and Corbin, 1990) was moving away from their original ethos by upholding an approach that emphasised the development of concepts rather than theories (Bryman, 2001: 390). Although others have argued that these transformations to the approach are to its advantage; grounded theory provides "guidelines that describe the steps of the research process and provide a path through it, *which* researchers can adopt and adapt *in order* to conduct diverse studies" (Charmaz, 2007: 9; *my emphasis*). It is essential to consider what theory means in social scientific thinking, in order to ascertain a greater understanding of what grounded theory is and what it entails (Charmaz, 2007: 125). Thus, the next sub-section looks at the philosophy underpinning this approach.

6.3.2 The interpretive tradition and constructionist grounded theory

This research follows a specific strand of grounded theory; a constructionist grounded theory approach. A constructionist approach to grounded theory "places priority on the phenomenon of the study and sees both data and analysis as created from shared experiences and relationships with participants and other sources of data" (Charmaz, 2007: 130). This approach "theorizes the interpretive work that research participants do", whilst recognising the "resulting theory is an interpretation" (Charmaz, 2007: 130). The constructionist grounded theory approach:

> *"….means learning how, when, and to what extent the studied experience is embedded in larger and often, hidden positions, networks, situations, and relationships. Subsequently, differences and distinctions between people become visible as well as the hierarchies of power, communication, and opportunity that maintain and perpetuate such differences and distinctions".*

> Charmaz, 2007: 130-31

A constructionist grounded theory approach stems from the constructionist paradigm. The constructionist paradigm is part of the postmodern sociological perspective, and was

established from the ontological and epistemological concepts of construction and interpretation (Gray, 2004).

Epistemological issues are concerned with what is regarded as acceptable knowledge in a discipline (Bryman, 2001: 11). The constructionist approach follows the interpretive position. The opposite of positivism, interpretivism suggests that there are differences between studies of the social world and those of natural science (Bryman, 2001: 13). In order to make sense of the social world, the social scientist must grasp the meaning of social action, which will help them to understand, rather than simply explain, human behaviour (Bryman, 2001: 13). Ontological concerns question the nature of social entities (Bryman, 2001: 16). In opposition to objectivism, the constructionist position implies that social phenomena are produced through social interaction and are in a constant state of revision (Bryman, 2001: 18). Experiences and perceptions of the social world are social constructions, a version of social reality which cannot be defined as definitive (Bryman, 2001: 18). The crucial strength of the constructionist grounded theory approach is the emphasis on the reflexivity of the researcher. In this context, reflexivity is about the researcher reflecting upon the whole research process, in order to recognise the limitations of the study. By their very nature, qualitative research projects are set in specific time periods, have precise samples of participants, and give precedence to particular theoretical contexts over others. As the next sub-section clarifies reflexivity allows the researcher to account for the strengths and drawbacks of these decisions.

6.3.3 The reflexive researcher

Early grounded theory texts, such as Glaser and Strauss (1967), neglected the role of the researcher (Bryman, 2001: 397). However, the constructionist grounded theory approach "recognises that the categories, concepts, and theoretical level of an analysis emerge from the researcher's interaction within the field and questions about the data" (Charmaz, 2000: 522). This allows the researcher to take a "reflexive stance towards the research process and products" (Charmaz, 2007: 131). This acknowledgment of the role of the researcher in the construction of knowledge, underlines the postmodernist tones of the approach (Bryman, 2001: 470). The nature of interpretive qualitative methods allows the researcher to enter the participant's world (Charmaz, 2007: 19). It is important to respect the participants both morally and ethically, and one way of doing this is for the researcher to establish a rapport with them (Charmaz, 2007: 19). By looking at the participants world, through the participants eyes, the qualitative researcher offers them respect and tries to understand, to interpret them (Charmaz, 2007: 19). In constructionist grounded theory

"data and analyses are social constructions that reflect what their production entails" (Charmaz, 2007: 131). The iterative nature of this qualitative research meant that each interview was like a pilot for the next, as "with grounded theory methods, you shape and reshape your data collection and, therefore, refine your collected data" (Charmaz (2007: 15). This analysis is situated, contextually, within a certain time, place, culture and situation and this allows the researcher to be reflexive about the interpretations of the participants, as well as their own (Charmaz, 2007: 131). This sub-section has explained the reasons why a constructionist grounded theory approach was used within this research, as well as the philosophy that underpins it. The following sub-section provides a synopsis of how the analysis was undertaken, including the methods and computer software used.

6.3.4 Methods utilised during data analysis

This sub-section focuses on the methods and computer software used to analyse the quantitative and qualitative data. This sub-section describes how the analysis was undertaken, sub-section 6.3.4.a focusing on the quantitative data and sub-section 6.3.4.b on the qualitative data, including how the conceptual framework was used as a tool in the analytical process.

6.3.4.a Quantitative data

A small amount of quantitative data was collected during this study through the questionnaires and travel diaries of the MAPPED project (Op. Cit.), and the pre-interview questionnaire of the Getting Out and About project. The quantitative data was collected mainly to record the demographic and socio-economic details of the participants of each project. However, additional questions were added in order to measure attitudes, and further questions were used to clarify things such as the types and frequency of information and communication technology that each participant used, some of which were explored further within the qualitative interviews. This quantitative data was anoymised through the use of a coding system on the data collection instruments. Due to the relatively low number of participants per project, and the therefore small amount of quantitative data coming out of this study, it was decided not to analyse the quantitative data using the Statistical Package for Social Science (SPSS). Instead the quantitative data was input into Microsoft excel, in tabular form to ease the analysis. As the MAPPED project (Op. Cit.) was a collaborative project, it was agreed that the University researcher

would produce the charts and tables for the final project report and participant feedback document (see, Appendix 22 for a copy of the MAPPED Post-trial Newsletter).

6.3.4.b Qualitative data

The qualitative data from both phases of data collection was handled in the same way. The interviews were audio recorded, later transcribed into Microsoft word, and then input into NVivo ready for analysis. The qualitative data was anoymised through the use of codes on the data collection instruments and audio tapes. Where quotations from the data have been used to illustrate the findings, it was necessary to make sure that the participants were not identifiable; instead 'male' or 'female' and their respective ages were used. If these quotations contained specific references to people, places, or similar that could result in the participants being identifiable, then, the details were changed so that the participants were not identifiable. If it was not possible to change such information then those particular quotations were disregarded. Following a grounded theory approach, thematic analysis of the qualitative transcripts was undertaken. The following sub-section gives a definition of thematic analysis, and then summaries how this was conducted within this study.

6.3.5 Thematic Analysis

Thematic analysis is a "process for encoding qualitative information" (Boyatzis, 1998: vi). This encoding means that the data is arranged within themes. These themes must, at a minimum, describe and organise; and at a maximum, interpret aspects of the phenomenon (Boyatzis, 1998: vii). The themes can be generated inductively from the empirical data, or deductively from theory and existing research (Boyatzis, 1998: vii). The use of "theoretically derived themes allow the researcher to replicate, extend or refute prior discoveries" (Joffe and Yardley, 2004: 57), which is something that applies first hand to the development of the conceptual framework and is picked up in the next sub-section. There is little written on how to carry out thematic analysis, although it is widely accepted that sections of data are coded into specific themes that are developed in line with the topic of the study (Joffe and Yardley, 2004: 59). This study follows the constructionist grounded theory approach, meaning that the data analysis was undertaken on a continual basis (Glaser and Strauss, 1967). Right from the completion of the first interview, this process involved reading and re-reading the data to identify the themes and their links (Charmaz, 2007). The themes should stem from the underlying principles of the study and the "specific questions one seeks to answer" (Joffe and Yardley, 2004: 59). Putting the

codes from a research project together is called a 'coding frame' that allows a "systematic comparison between the set texts one is analysing" and helps the researcher to ask questions of the data (Joffe and Yardley, 2004: 59). The coding frame for this study (see, Appendix 23) took the research questions as a starting point. For example, in exploring the issue of mobility, segments of the transcripts were initially coded under 'mobility', this code was then later divided into sub-codes such as 'virtual mobility', 'travel-based mobility', 'factors that impact', 'motivations for', and 'barriers to'. The qualitative data from each project was in turn applied to this coding frame, and any additional codes or themes that came to light during the analysis were added as they became visible. This process was repeated until the data reached saturation point and no new codes were visible (Charmaz, 2007).

This constructionist grounded theory approach has also steered the development of theory on mobility in later life, to come from the data rather than the predetermined ideas of the researcher (Charmaz, 2007). This analysis was undertaken in several stages; as the interrogation of the data became more in-depth this meant that the coding frame developed alongside the collection and analysis of the data. A criticism of grounded theory is that it often produces descriptive conceptualisations rather than the conception of theory (Charmaz, 2007: 133). Although grounded theory is the most prominent strategy for conducting qualitative data analysis, the approach varies from study to study depending on the aims of the research in question (Bryman, 2001: 397). However, not wanting to ignore that there are several key elements that all studies claiming to undertake grounded theory must adhere to, this study argues that the flexibility within the approach is what makes it so applicable when undertaking qualitative analysis. Here the approach means that this study has produced both descriptive conceptualisations, in the form of developing the existing paucity of knowledge around the topic areas of transport, technology and older people, and has developed theoretical understanding of the concept of mobility through the conceptual framework.

6.3.6 Utilising the conceptual framework as a tool in the analysis

The conceptual framework for mobility in later life takes into account the findings from the literature review and the empirical data. This determines any similarities and differences in the findings of the literature review and the empirical data collected. In order for the conceptual framework to be utilised as a tool in the analysis, it was linked to research question 1b, which explores the factors that impact travel-based mobility within later life. Building the research questions into the coding frame meant that the findings and their application to the conceptual framework were easily visible. Through using theoretically

derived codes it was possible to "replicate, extend or refute" (Joffe and Yardley, 2004: 57) the findings from the literature review. The scarcity of existing literature and empirical data which looks at the factors that impact mobility in later life, meant that there was a real gap in knowledge for this study to fill. Thus, through the generation of codes, both inductively and deductively, the conceptual framework proved to be a valuable tool in the analysis process, as well as a visual representation of some of the findings.

6.4 Outputs and dissemination

All the participants were given the opportunity to request a copy of the summary sheet, detailing the main findings of each of the two phases of data collection (see, Appendix 24), to be posted to their home addresses. The Gatekeepers of the local organisations who assisted in the recruitment of the participants, were also sent a copy of this summary sheet. The MAPPED project (Op. Cit.) participants also received a copy of the MAPPED project (Op. Cit.) post-trials newsletter produced by the Local Government Department (see, Appendix 22). At this stage, plans for future outputs and dissemination include, a presentation of the findings within the local community at the Pensioners Forum, and visibility through the usual academic standard of Journal and Conference papers.

6.5 Summary

Throughout this chapter the discussion has focused upon the ethical concerns, the choice of methodology and data collection methods, the data analysis approach, and the dissemination strategy of this study. Collecting qualitative empirical data from older people meant that there were specific ethical considerations before, during and after the two phases of data collection. These ethical concerns alongside the rationale for the choice of the data collection methods have been highlighted within this chapter. The chapter has also explained the use of a constructionist grounded theory approach within the collection and analysis of the empirical data. This approach stems from the interpretive tradition and allows the participants to share their experiences with the researcher, who puts these experiences in context and interprets them reflexively. Grounded theory is then concerned with the development of theory from data, and the approach is iterative which means that the data collection and analysis happens simultaneously, whilst referring back to one another (Bryman, 2001: 390). This chapter has also explained the Joffe methods and computer software used for analysing the empirical data, as well as how the conceptual framework was used as a tool in the analysis. The plans for dissemination to both academic and non-

academic audiences have also been outlined. The next two chapters (Seven and Eight) present the analysed data in the form of the major findings of the two phases of empirical data collection.

Chapter 7: Findings - Travel behaviour and travel-based mobility in later life

Both this chapter and the following chapter (Chapter Eight) present the main findings from the two phases of empirical data collection that underpin this study: the MAPPED project (Op. Cit.), and the Getting Out and About project. The two phases of empirical data collection are distinct and thus, individually, inform the specific parts of the research questions. This chapter focuses on answering the first research question, drawing upon data from the Getting out and About project, as Table 8 shows. However, there are occasional instances where data from both phases of the data collection has informed specific parts of the first research question, and so where appropriate these are clearly visible within the text.

Table 8: The phase of empirical data collection primarily being drawn upon in order to inform the specific parts of the first research question.

Research question 1: What patterns of travel behaviour are associated with later life?

1a)   What motivates older people to undertake travel-based mobility and how important is it to them?

1b)   What factors impact upon the travel-based mobility of older people?

Chapter number	Chapter 7	
Research question	1	
	1.a	1.b
Phase of empirical data collection primarily drawn from	Phase Two: Getting Out and About project	Phase Two: Getting Out and About project

The fieldwork that underpins this, and the following chapter, was conducted over a period of fourteen months between November 2007 and January 2009. Presented in this chapter are the most significant findings which correspond to the first research question. Within this and the following chapter links between the empirical data and relevant literature and policy are highlighted, although all references within these two chapters have been kept purposefully brief and descriptive. A more in-depth analysis of these issues is offered in the subsequent discussion chapter (Chapter Nine). This chapter is split into six sections which are structured to inform the first research question. The first section, 7.1, provides background data and insights to research question 1, 'what patterns of travel behaviour are associated with later life?' through an exploration of the travel behaviour of the participants of the Getting Out and About project. This includes summaries of the modes of transportation that the participants use to travel around the local urban area, as well as the average number and distance of journeys that they undertake each week. This section also examines the travel needs, expectations and problems identified by the participants. The second section, 7.2, informs research question 1a, 'what motivates older people to undertake travel-based mobility and how important is it to them?' It examines the importance of travel-based mobility in later life, alongside conceptualising the notion in terms of what the participants of the Getting Out and About project understood it to mean. The section outlines how important travel-based mobility is to the sample of older people, explores the reasons why it is important to them, alongside highlighting the links with the literature on independence and the process of individualisation. This includes how the factors: social networks; household composition; and access to transport, are linked to the participants motivation to undertake travel-based mobility. The third section, 7.3, informs research question 1b, 'what factors impact upon the travel-based mobility of older people?' This section explores the specific factors that the participants of the Getting Out and About project felt had an impact on their travel-based mobility. The participant's discussions around the factors, outlined in section 7.3, have been used in the development of the conceptual framework for mobility, as presented in Chapter Nine (section 9.2). The fourth section, 7.4, provides some examples of how the participants substitute and/or supplement one form of mobility for another. The fifth section, 7.5, outlines how the data collection allowed the University researcher to visualise the inter-relationships between the conceptual intersections. The final section, 7.6, summarises the findings for the first research question, providing an overview of the chapter.

7.1 Travel behaviour in later life

This section presents the findings from the empirical data which informs research question 1 'what patterns of travel behaviour are associated with later life?' As the literature review has shown, there is a paucity of empirical research that explores travel behaviour through the eyes of older people themselves. Much of the existing data within the field of transportation studies looks quantitatively at travel behaviour by, for example, focusing on the analysis of factors such as the number of trips made by older people (see, Su and Bell, 2009). However, in taking a qualitative approach to exploring travel behaviour in later life, and listening to the 'voices' of older people, this study provides distinct insights into the travel needs, expectations and problems that older people themselves experience within their everyday lives. This section is divided into five sub-sections. The first sub-section, 7.1.1, determines the types of transportation that this sample of older people utilises. Sub-section 7.1.2 describes the average number and distance of journeys that the sample makes per week, with distinctions between public and private modes of transportation. The third sub-section, 7.1.3, focuses on the whether the participants make familiar and unfamiliar journeys in later life. Sub-section 7.1.4 explores the participant's use of a routine to structure their days in later life. Sub-section 7.1.5 describes the variability of the travel needs, expectations and problems in later life, which the University researcher was able to visualise throughout the participant's discussions around their travel behaviour.

7.1.1 The types of transportation that older people use

Interviewing older people about their travel needs, expectations and problems means that this research reveals a range of factors that impact travel behaviour in later life. As will be discussed throughout this chapter, the literature review and the findings demonstrate that there are many other factors which impact travel behaviour in later life, such as health status, access to public and private transportation systems and services, and accessible travel information. Amongst current cohorts of older people, car ownership is likely to decrease as people age, and older women are less likely then older men to have access to a car during later life (Social Exclusion Unit, 2006: 87). This direct correlation between the variables of gender and age group within trip making behaviour and patterns of car ownership and driving was previously noted in the literature review. However, the findings[32] do not demonstrate an association between the variables of gender and age.

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[32] When based on the median age of the participants of the Getting Out and About project. 6 car drivers (4 = female, 2 = male). The median age of the car drivers is 70.33 (female car driver = 68.5, male car driver = 74).

This could be because the sample of the Getting Out and About project was not representative, although there are also generational differences that mean women in younger cohorts are more likely to have worked full time, taken a driving test and own a car (Soule, 2005: 86). The factors highlighted throughout this chapter were also used to develop the conceptual framework for mobility in later life, as discussed in Chapter Nine. The twenty participants of the Getting Out and About project were asked to specify the primary mode of transportation that they used to travel around the urban area in which they lived. As Figure 10 shows, the findings support the following statement from the Help the Aged (2007a) policy document. Older people "use a variety of private and public modes of transportation, the majority rely upon public rather than private modes of transportation and this reliance on public modes of transportation increases more significantly as people age" (Help the Aged, 2007a). Twelve of the twenty participants were bus users (six female, six male), six were car drivers (four female, two male), one used an electric mobility scooter, and one stated that they primarily walked around their local urban area.

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12 bus users (6 = male, 6 = female). The median age of the bus users is 69.67 (Female bus user = 70.33, male bus user = 69).

Figure 10: Pie chart depicting the primary mode of transport that the participants from the Getting Out and About project use to travel around their local urban environment.
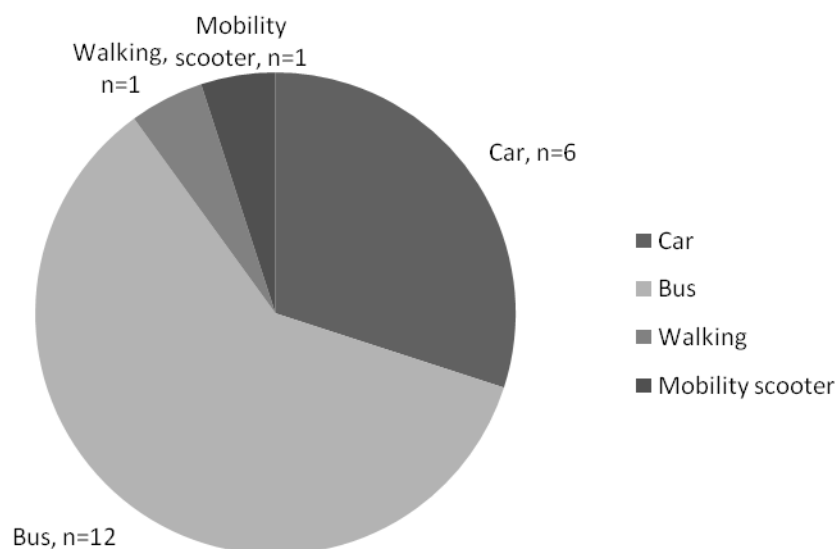
Source: Getting Out and About project – phase two data collection

7.1.2 The average number and distance of journeys, per week, in later life

This sub-section explores the average number and distance of the journeys made by the sample of older people, drawing distinctions between those with access to a car and those who use public transport. The participants who were car drivers themselves, or had access to a car within the household reported undertaking more journeys per week and travelling a greater distance than the bus users, as found in other studies (such as, DTLR (2001: 38). The bus users reported undertaking an average journey of two or three miles, whereas the car drivers stated their average journey is between ten and twenty miles. The car drivers were more likely to go out five, six or seven days per week, whilst the bus users were more likely to go out three, four or five times per week. The two participants, who undertook the most journeys per week were both car drivers and, as the following quote shows, stated that they went out everyday:

Interviewer: On average how many times do you think you go out each week?

Female aged 67: Everyday, my husband is a fresh food fanatic, I don't shop in one place I go everywhere, though I combine everything that I'm doing when I go out, I use the car deliberately and I don't waste journeys.

Conversely, the participant that undertook the least number of journeys per week stated that he would usually walk to where he needed to go, about once or twice a week:

> *Interviewer:* So on average how many times a week do you go out?
>
> *Male aged 68:* Maybe once or twice, it depends on my health. I go from here to the Supermarket, mostly walking about fifteen to twenty minutes.

This quote also illustrates that the number of journeys that the participants undertake each week are likely to vary, from one week to the next, depending on their health status. A number of other studies have also acknowledged how health status can have a positive or negative impact on physical mobility and travel behaviour in later life (for example see, Bath and Morgan, 1998; and Soule, 2005). This and other factors that impact the number of journeys older people undertake each week are explored in more detail later in this chapter (section 7.3).

7.1.3 Familiar versus unfamiliar journeys in later life

There is currently no existing data that distinguishes between whether older people undertake familiar or unfamiliar journeys. However, the underlying argument for activity-based' travel behaviour modelling is that, in most cases, people do not travel meaninglessly from one place to another; rather they do so to perform an activity (Jones, 2002: 14). This has been countered though, by a number of scholars that have commented on the desire to travel for its own sake (for example see: Mokhtarian et al, 2001: 356-359; and Metz, 2000: 150). In this sense, directed travel is where the destination is of primary importance, for example, walking to the grocery store to purchase food; and undirected travel is where the travel itself is primarily significant, for example, 'going for a walk' after dinner (Mokhtarian and Salomon, 2001: 697). The participants of the Getting Out and About project were therefore probed during the interviews to explore their travel behaviour in terms of familiar and unfamiliar journeys. For the purposes of the Getting Out and About project, unfamiliar journeys were defined as 'travelling to somewhere that the participants had never been to before'. Familiar journeys were characterised as 'travel to places on regular occasions, or within their local area'. The data from the Getting Out and About project indicates that the sample of older people undertake more familiar than unfamiliar journeys: "…..I haven't been anywhere for ages to be honest, only around the city" (Female aged 75 years old). Within the six months prior to their participation in the Getting Out and About project, fifteen of the twenty participants stated that they had not undertaken an unfamiliar journey. Eleven of those fifteen also stated that they had not undertaken an unfamiliar journey within the twelve months prior to

their taking part in the Getting Out and About project. Out of the remaining five participants who had undertaken an unfamiliar journey within the past six months, three were car drivers and had driven themselves; the other two had been driven somewhere unfamiliar in a car by a member of their family.

Despite having access to a bus pass which entitles people aged 60 years and over to free local and national travel, the fourteen participants who primarily relied upon public transport to get them out and about, did not report undertaking any unfamiliar journeys within the twelve months prior to taking part in the Getting Out and About project. When probed for reasons why, the participants stated that the lack of information and personal level of motivation were the significant factors. They suggested that when they did undertake an unfamiliar journey they would travel as a passenger in the car of a friend or family member, or on a mini-bus or coach as part of an organised outing. Of the nine participants who stated that they had been on an unfamiliar journey within the twelve months prior to taking part in the Getting Out and About project, four said that they had been on an unfamiliar journey with a club or organisation specifically run for older people. There are then clear differences in terms of older people being able to, and/or having the desire to undertake familiar and unfamiliar journeys in later life. These findings therefore highlight how access to social networks, clubs or organisations, and a car can facilitate older people to undertake more unfamiliar journeys. This demonstrates how the factors that influence mobility in later life interact with one another to impact upon an individual's mobility. This supports the arguments for the layers of the conceptual framework, and the use of the rainbow shape, dotted lines and arrows to show the interaction, as outlined in Chapter Three (section 3.6).

7.1.4 Structured days and routine lifestyles in later life

In accordance with the study by McKie (1999: 534), which found that "the use of routines gave meaning and purpose to daily activity" in later life. Twelve of the participants described their day to day lives as running to a schedule. By schedule they meant that certain days were put by in order to undertake set chores or activities. For instance, Tuesday would be grocery shopping day and Wednesday washing day, as this quote below highlights:

Interviewer:	Is there anything that stops you from getting out and about?
Female aged 76:	*Well lack of time mostly (laughs), I'm at the community centre Monday, Tuesday and Wednesday, my son takes me shopping on Friday, and I may do some housework on Thursday or social services may visit, though you are inclined to get involved and have a natter if you go to the community area.*

Some of the participants felt that these structured days meant they lacked time to get out and about and undertake unfamiliar journeys. However, all of the participants who mentioned such routines responded positively about them, suggesting that they gave their lives a structure and meant that they had a reason to get up in the morning. Two of these twelve participants felt that this routine lifestyle was something they had wanted to maintain from their working lives, as this gave a reason or motivation to regularly get out of the house in the form of a journey or travel-based mobility:

> *"I mean I still wake up in the morning and think, 'oh that's what we are doing today', you know like a meeting for my son and this meeting we are having now (laughs), so I look forward to having a reason to get up".*
>
> *Male aged 71 years old*

This is a good example of the interaction between the layers on the conceptual framework, showing how lifestyle factors can impact upon travel-based mobility in later life. There was a visible link between this structure and the fact that, increasingly, the journeys undertaken by older people, as they age, start to be to familiar places, for essential items, such as groceries. Throughout the discussions with the participants it was clear that, for each of them, there were a number of factors that had an impact upon their travel-based mobility. For example, one participant described how poor health had led to driving cessation and that this, together with a low income and limited social networks, limited his travel-based mobility. There was a clear link between the structured lifestyles and the participants social and community networks, for example, many of them describing how their weekly routine was influenced by such networks. One female described how she attended a church group every Thursday and so undertook her grocery shopping every Wednesday. Despite being over the statutory retirement age, two of the twenty participants were still currently in paid employment roles. Both of these participants were female, working part-time and stated that the reason they had chosen to continue working was because it structured and filled their days: "I am still working part-time because it structures my days and it makes me do things" (Female aged 67). Eighteen participants were therefore retired, and all eighteen described retirement as having led to some form of change in their travel-based mobility. Other studies have noted

that the number of journeys made by both male and female starts to naturally decline upon retirement age as there is no longer the requirement to make commuter journeys to a place of work (Soule, 2005: 86). However, the data from the Getting Out and About project took this further, by showing that the number of journeys being undertaken during the period of retirement actually varies from person to person, this means that patterns of travel behaviour in retirement are more complex than has previously been acknowledged in other studies. Part of this complexity is illustrated in the quote below which demonstrates how, in retirement, the participants wanted to stay at home at weekends and undertake travel-based mobility during week days, as this would be easier, quicker and less stressful for them. They also expressed a lack of motivation or incentive to undertake travel-based mobility at the weekend, describing how there is nothing for them to do:

> *"Don't know just because you get a general cut off feeling really, whereas when you were younger it was, 'oh the weekend, time is my own', you know, but when you are retired you get to the weekend and you think, 'oh what can we do now' (laughs). It's sort of that feeling, you know, no incentive to do anything on a weekend basically".*

> *Female aged 77 years old*

Again, these discussions highlight the complexity of travel behaviour in later life. The participants describe a diverse range of experiences and day to day lifestyles, as the following sub-section picks up.

7.1.5 The variability of travel needs, expectations and problems in later life

There is a limited amount of research that focuses on both the travel needs and expectations of older people (Schlag et al, 1996). The Department for Transport report, 'Older people: Their transport needs and requirements' (DfT, 2001), considers older people's travel needs and expectations. Although the report details much on needs, little consideration is given to expectations and there is no visible empirical evidence. The literature review found one other study that focuses on the mobility and accessibility expectations of seniors in an ageing population (Alsnih and Hensher, 2003). However, the article itself is concerned with the "mobility needs and travel patterns of individuals over 64 years of age" (Alsnih and Hensher, 2003: 903), and no real consideration of expectations is undertaken. The Getting Out and About project started to unpick what older people distinguish as a need, versus what they expect from a transportation service. However, it was not an overall aim of this study and so it is recommended that future research

explores this in greater detail. There were some distinctions between what the participants felt they needed, expected and the problems they incurred on transportation services. The participants expressed a need for reliable, accessible and affordable transport; whilst they expected clean, safe and quick transport with friendly and helpful staff. The reoccurring problems with transport services were bus drivers' poor attitudes, lack of information about changes to bus routes, and the declining service which they had experienced lately. During later life social and psychological needs may differ as the travel patterns of older people can alter due to changes in their own circumstances, including health problems and lower levels of income during retirement (Schlag et al, 1996). Therefore, it is important to consider both travel needs and expectations in later life, as these kinds of changes in circumstances can mean that older people go through periods of adjustment where their expectations may differ from the reality of their situation (Schlag et al, 1996). For example, if a female loses her spouse/partner who was the main car driver, then she will either have to drive herself, or find an alternative mode of transport. This is also linked to the notion of interdependence, as this impacts the travel needs and expectation of the individual, and may involve a period of adjustment where the older person may change their travel behaviour. Some find these types of adjustments difficult, while others may not adjust at all. In terms of mobility, older people may undergo a period of transition where they find that the mobility that they once found to be relatively easy becomes more difficult, or the barriers to mobility increase (Schlag et al, 1996). These barriers are most often in the form of accessibility, impairments, attitudes, and information (Schlag et al, 1996). This section has highlighted the complexity of travel behaviour in later life. The following section explores the importance of travel-based mobility in later life.

7.2 The importance of travel-based mobility in later life

This section of the chapter informs research question 1a, 'what motivates older people to undertake travel-based mobility and how important is it to them?' It has been integrated to assist in understanding and conceptualising the term 'travel-based mobility', and its importance in later life. The twenty participants of the Getting Out and About project were asked to comment on what the term 'travel-based mobility' meant to them. Three of the participants felt that they were unable to comment on what the term 'travel-based mobility' meant to them. The other seventeen responses fitted into the four categories: 'move or get around unaccompanied'; 'takes me where I need to go'; 'using transport or assistive technology'; and 'the free bus pass'. The first category, 'move or get around unaccompanied', was the most common answer given by ten of the participants. This explanation makes no preference over a mode of transportation and sustains a notion of wanting to be independent and not rely on others. The second category, 'takes me where

I need to go', also has no defined link to a mode of transportation; however this response fails to capture the idea of independence in the same way as the first category does. The third category was 'using transport or assistive technology', which is dependent on a mode of transportation or type of assistive technology; in this case the participants were referring to the car, walking sticks, wheelchairs and electric mobility scooters. And the fourth category was 'the free bus pass', which is heavily linked to the bus service. These latter two categories ignore modes such as walking and cycling. Therefore, to 'move or get around unaccompanied' best elucidates what the participants felt the term travel-based mobility meant. However, this could also describe physical mobility and so the phrase 'from one place to another' was added to the participant's description in order to differentiate. Thus, the definition of travel-based mobility used in this study is to 'move or get around from one place to another unaccompanied'. The participants heavily connected travel-based mobility and independence, stating that being able to do things for themselves and not relying on others was important to them, as is discussed later in this section (and also found by Mitchell and Jonas-Simpson, cited in Bourret et al, 2002: 339; and Bourret et al, 2002: 341). This sub-section is divided into three parts. The first sub-section, 7.2.1, looks at the reasons why older people undertake increasingly purposive travel-based mobility as they age. Sub-section 7.2.2, focuses on the individuality of mobility and independence in later life. The third sub-section, 7.2.3, explores the role of travel-based mobility in supporting independence and leading to social inclusion in later life.

7.2.1 The reasons why older people undertake increasingly purposive travel-based mobility as they age

During the interviews the participants revealed that they would undertake travel-based mobility when they had a reason to do so, for instance to visit a friend or pick up some groceries:

"…my journey always has a reason to it."
Female aged 67 years old.

Much like travel-based mobility at any age, the travel-based mobility that these older people undertake is purposive. Travel-based mobility is defined within this study as to 'move or get around from one place to another unaccompanied'. Journeys that were a very short distance, such as across the road to a friend's house or to their own garden were not considered by the participants as travel-based mobility. With the exception of emergency situations, the participants described only a few occasions when they would undertake spur of the moment travel-based mobility. They conveyed a sense that balancing busy lifestyles with sporadic patterns of ill health, which they felt limited the options for spur of the moment travel-based mobility in later life. During the interviews, the participants were probed to give specific reasons why they would usually undertake travel-based mobility. The following list details all of the reasons that were cited: shopping for groceries; shopping for other items such as consumables; paid employment and voluntary work; attending religious services; helping friends or family; organisational meetings; meeting people; attending social events; visiting the library; leisure activities; doctor and hospital appointments; to get fresh air; exercise; walking; banking and paying bills; and going to the post office. As anticipated the participants cited an array of motivations for undertaking travel-based mobility. Shopping and personal business were the most common reasons for older people to undertake travel in the Social Exclusion Unit (2006: 87) study. Similarly, the participants of the Getting Out and About project stated that shopping for groceries and attending hospital/doctors appointments were the most common reason for undertaking travel-based mobility. The participants did all convey similar reasons for undertaking travel-based mobility, and stated that the majority of this travel-based mobility was to places that they felt were familiar and geographically relatively close to them[33].

Despite their structured routine and mainly purposive travel behaviour, a few of the participants discussions revealed that they would undertake both directed and undirected

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[33] Less than five miles from home.

travel. Directed travel meaning that the destination is of primary importance and undirected travel where the travel itself is significant (Mokhtarian and Salomon, 2001: 697). In the main the participants described how they undertook journeys for a purpose, such as grocery shopping or visiting friends and family, however there were several instances when participants expressed a desire to travel for its own sake. An example of this came up in an interview whilst discussing the introduction of the free national bus pass when the participant explained how she liked the "freedom that it has given me, the ability to be able to go somewhere, anywhere, just for the sake of it" (Female aged 67 years old). These findings correspond with those of Mokhtarian et al (2001: 377) who found that "far from being completely determined by demographically based needs, the amount of travel demanded is heavily influenced by one's attitudes toward travel". This has significance for transportation planners and policy makers that have traditionally viewed travel as a means of access to desired activities, rather than for its own sake (Mokhtarian et al, 2001: 355). Some of the participants also mentioned how, knowing that they were able to go out even if they did not one day, had a positive impact on their lives. This fits with Metz (2000: 150) arguments around potential travel.

The participants discussed how travel-based mobility is part of their 'everyday life'. One of the participants stated that travel-based mobility enables their everyday living, whilst others expressing a desire to get out and about and not stay in "watching television", or "staring at the same four walls". Those who were living alone, in particular, felt that getting out and about was an important part of socialising.

> *"Travel based-mobility is essential because it enables your everyday living; if you are not mobile then you are not able to do very much at all".*

> *Female aged 65 years old*

Shopping for groceries was one task that the participants expressed was important to them, not only because it enabled them to pick up groceries, but also in terms of providing them with an opportunity to interact with other people, be it the staff or other customers. Travel-based mobility was described by the participants as a 'tool' to alleviate boredom; keep their minds active; and to assist them 'getting involved' or included within the community through a range of tasks, like grocery shopping and voluntary work. One of the participants felt that being able to get out and about and do things for himself boosted his self confidence:

> *" …it gives me confidence where I can do something without asking somebody else to do something for me, or put upon them."*
> *Male aged 65 years old*

These accounts show that travel-based mobility is important to older people for a variety of reasons. Travel-based mobility in later life is influenced by a wide range of factors, encompassing the micro level to the macro level; this reinforces the choice to depict the factors as layers on the conceptual framework. The following sub-section determines the individuality of mobility and independence in later life.

7.2.2 The individuality of mobility and independence in later life

The participants of the Getting Out and About project were asked questions around what mobility and independence means, and whether it is important to them. Given the fact that the political perception of older people has undergone a transformation whereby, increasingly, older people are seen as independent individuals, as discussed within the literature review (section 4.5), it was felt that the participants would also value being independent in later life. Sixteen out of the twenty participants stated that they either like to be independent: "I like to be as independent as possible" (Male aged 65), or that they do not like being dependent on other people: "independence is very important because I don't like depending on other people" (Male aged 69). The participants had various reasons for wanting to remain independent, ranging from caring for family and friends, to attend voluntary or paid work, and to be able to look after themselves. One of the participants talked about independence as a choice; "if I wanted to go somewhere I would go" (Female aged 66). The fact that the responses varied from one participant to another demonstrates the individuality of mobility and independence in later life. This is then problematic in a policy climate that emphasises the maintenance of independence in later life and encourages older people to remain in their own homes for as long as possible (ODI, 2006; HM Treasury, 2007a). As can be seen in the debate around the personalisation of services, an element of the wider cross-government strategy on independent living which supports people with disabilities, across all age groups, by giving them greater choice and control over the support and resources they need (ODI, 2006: 9). The personalisation of services means that people with disabilities can chose how they spend their own health and social car budget, which has raised moral questions over the abilities of some to be able to make such decision (for more details see, Wanless, 2002). Alongside these findings, this debate shows that it is not easy for policymakers to establish a 'one size fits all' approach given the heterogeneity of the experience of later life.

The findings also highlight the fluidity of mobility and independence in later life. During later life older people may go through periods of adjustment which are linked to changes

in their personal circumstances, such as driving cessation, the loss of a partner, or physical impairments (Schlag et al, 1996). This can result in changes to travel behaviour and travel patterns in later life, ultimately this may mean that mobility changes from something which was easy, to something with barriers in terms of accessibility, impairments, attitudes, and information, which may mean that older people have to adjust their expectations (Schlag et al, 1996). An example of this was highlighted by one of the participants who suggested that changes in her health would eventually mean that she had to give up driving. "I do love driving but when poor health means that I have to stop, I have to stop there is nothing I can do about it, I'm prepared, and it will happen no question about it" (Female aged 67). Although she stated that she was prepared for these changes, later in the interview she admitted that tasks, such as grocery shopping, without access to a car, would become more complex. The participant's descriptions of mobility and independence during later life were inconsistent, conveying a sense of continuous change. Older people have different experiences, expectations, and needs that are inclined to change due to factors inside or outside of their control, such as the onset of health impairments, and the loss of a partner. This shows that the concepts of mobility and independence in later life are fluid, in a continual state of flux (Bauman, 2000; Urry, 2007). As such this fits with the argument that outlines the layers of the conceptual framework and the choice of the rainbow shape design, dotted lines and arrows to highlight the interaction between the layers.

7.2.3 The role of travel-based mobility in supporting independence and leading to social inclusion in later life

All twenty of the participants expressed positivity towards the term travel-based mobility, stating that it was important to them for a number of reasons.

"I would probably be like a bear with a sore head if I couldn't get out and about".
Female aged 66 years old

The participants strongly associated travel-based mobility with being independent and felt that being able to do things for themselves and not relying on others was an essential part of this. It has been argued that adequate mobility leads to greater life satisfaction and has the potential to contribute towards a better quality of life in later life (Schlag et al, 1996). Although, the small, unrepresentative sample size of the Getting Out and About project means that it is not possible to draw any grand conclusions on whether adequate mobility

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leads to greater life satisfaction and has the potential to contribute towards a better quality of life in later life. However, the data does demonstrate that travel-based mobility facilitates independence and this is important to older people:

Interviewer: *Ok so is travel-based mobility important to you?*

Female aged 69:   *Yeah, because its independence (pause) and exercise (laughs).*

In fact though, during discussions around immobility, the participants made clear associations with negative emotions and feelings. Those who had experienced immobility first hand expressed anger and sadness at the thought of becoming immobile again. For example, one participant described how driving cessation on account of poor health had resulted in a decline in his travel-based mobility; and this combined with what he described as limited social networks, meant that he often stayed inside his flat, on his own During the interview he became very distressed about his situation, and repeatedly made comparisons between his previous 'mobile' life, and his current 'immobile' life. He talked passionately about previously being able to come and go as he pleased, stating that he could jump into his car and visit somewhere or someone if he was lonely. When he conversed about his current situation though, he expressed anger and described how he was often reduced to tears when he thought about it. There were then apparent differences, in terms of the well-being and inclusion experienced by the participants who felt they were independent and mobile, in comparison to those who considered themselves to be less mobile or immobile and dependent on others, such as friends, family and social services. This demonstrates the role of travel-based mobility in supporting independence and leading to social inclusion in later life, which can also be linked to the development of the conceptual framework (as discussed further in Chapter Nine, section 9.2). The importance of travel-based mobility from an individual perspective is therefore clear, although it should also be noted that it also has implications on a societal level. Older people have been described as a "valuable resource" giving back to society through "unpaid care and voluntary work" (Social Exclusion Unit, 2006). In this sense then travel-based mobility is a part of how older people see themselves, but by enabling them to live their lives it may also mean that they give back to the community. Therefore, given the importance the sample of older people from the Getting Out and About project assigned to travel-based mobility within their lives, a greater understanding of mobility generally, and travel-based mobility specifically, is essential if academics, transport planners, and policy makers are to consider its inclusive significance. In this sub-section it has therefore been suggested that travel-based mobility is important in later life, not only on an individual level for the older people themselves, but also on a wider societal

level given the increasingly ageing population. The following sub-section discusses the factors that impact travel-based mobility in later life.

7.3 Factors that impact travel-based mobility in later life

This section informs research question 1b, 'what factors impact upon the travel-based mobility of older people?' through an exploration of the range of factors that impact upon travel-based mobility in later life, as discussed by the participants during the empirical data collection. The participants stories gave meaning to the findings of the literature review, as explored in more detail in Chapter Nine (sub-section 9.2.1). This section is split into four sub-sections which explore the factors that impact on travel-based mobility in later life, and these are titled in accordance with the layers of the conceptual framework. The first sub-section, 7.3.1, examines the macro level factors. Sub-section 7.3.2, looks at the mezzo level factors. Sub-section 7.3.3, focuses on the micro level factors. The fourth sub-section, 7.3.4, explains the facilitators and barriers. In each case the factors presented are examples from the empirical data that fit in each layer, rather than an exhaustive list of all the possible factors. Those highlighted in this section show the factors that the participants of the Getting Out and About project felt impact upon their travel-based mobility. This, therefore, demonstrates how the conceptual framework links to real life experience, testing its application and ultimate use-value. Other forms of mobility are considered in the following section (7.4).

7.3.1 Macro level factors

The 'macro level factors' are the wider economic, political, cultural and environmental structural conditions that we live in. Macro level factors include, technological and transportation structures, as well as public policy at a national level, and government funded organisations, like the National Health Service.

7.3.1.a Safe, Accessible, Reliable and Affordable transportation

Older people rely on several modes of private and public transport, as has already been discussed at the beginning of this chapter (section 7.1). There is a shift where reliance on public transport increases in later life (Help the Aged, 1998). This can be linked to changes in personal circumstances that people are increasingly likely to experience as they age, such as the onset of physical and mental impairments and driving cessation (Schlag et al, 1996). This reliance on public transport in later life was reflected by the sample of the Getting Out and About project. Twelve of the twenty participants stated that they used the bus; six said that they used a car; one used a mobility scooter and one

walked (see, section 7.1). The acronym for the Help the Aged (1998) campaign: Safe, Accessible, Reliable, and Affordable transport (SARA), provides a description of what older people expect from transportation services. During the interviews the participants were asked to comment on how satisfied they were with the mode of transportation that they used most frequently to travel around the local urban area. There were differences between the views of the car drivers and those of the bus users. All six of the car drivers were happy with this mode of transport, the only concern they expressed was over the rising financial cost of maintaining it. Conversely, the twelve bus users expressed mixed opinions over their satisfaction with this mode of transport. Seven out of the twelve participants who used the bus most frequently to travel around the local urban area, thought that the service was good and that the free bus pass was fantastic:

> *"The bus service here is excellent; I can't understand why people complain about it? (Laughs) They should go to a third world country like where I am from and then they will notice what service they get here, there is a big difference. The free bus pass is wonderful".*

> *Male aged 77 years old*

When asking the participants if they experienced any difficulties travelling around the local urban area, several issues connected to public transport services were highlighted. Three of the participants who were regular bus users stated that they were relatively happy with the bus service itself; rather it was the bus driver's attitude which caused difficulties:

Interviewer:	*Do you experience any difficulties when you are travelling around?*
Male aged 69:	*No but I sometimes see other people having difficulties, yesterday this old lady got on the bus and then he didn't stop right at the bus stop and she had to walk back and I actually heard the driver 'tutt' and then when she got on the bus and did the business with the tickets and that and then she went to sit down and then 'flung' he throw the whole lot around.*
Interviewer:	*Ok so it's mainly to do with bus drivers than the actual service itself?*
Male aged 69:	*Yeah.*

Whilst discussing the local bus service the participants raised a number of general issues which could also apply to all other public transport services. Five participants stated that obtaining up-to-date travel information was an issue, especially now that many bus stops

do not display timetable information. Although travel information is available on the internet, only two participants stated that they had obtained it in this way. The participants suggested that they could pick up printed travel information from the public library, train station or bus depot, however, they also stated that this was not always a practical solution. They felt that they were only able to do this from time to time, and so often the information they had with them, or at home, was out of date when they did come to use it. Several of the participants said that changes to the routes caused them difficulties when they were travelling. These route changes were problematic for the participants, not only because of the lack of communication about the changes but also because it could result in journey times being increased. One participant stated that to improve the local bus service it would need to be more reliable:

Interviewer:	*How do you feel local public transport services could be improved?*
Male aged 70:	*I used to have to catch a bus to the station and then the train to work, and the bus service was pretty unreliable, like once a week I would miss my train because the bus wouldn't turn up. I really can't say now, I mean there is quite a good service I can walk down the road and get a bus that way, but I wouldn't want to, in fact it would be almost impossible to do my shopping in that way, and then I would have to use local shops rather than a large supermarket. So reliability is the factor.*

7.3.1.b Concessionary fares: the introduction of free national bus travel

Many of the participants (seven out of twelve) who used the bus most frequently to travel around the local area were happy with the service. Although five of these seven participants felt that they had not yet made 'full use' of the free bus pass, stating that they had been on local journeys within the county rather than national journeys. The remaining five that stated that they were unhappy with the service offered locally expressed concerns over the free bus pass having led to the deterioration of the bus service, including cuts to the frequency of buses on some routes, and the disappearance of some bus routes all together. One female participant, aged 76 years old, went as far as to say: "I would sooner have carried on paying and have a decent bus service". These five participants are not the only people to link the introduction of the bus pass offering free travel to those aged 60 and over, with cuts in the local bus service. In an article in a local daily newspaper from Southern England (see, Adams, 2008), Alex Hornby, the Operations Manager of the Bus Company based in Southern England commented on the cuts in services. Suggesting that these cuts followed heavy losses made by the company as

operating costs continued to rise: "accelerating fuel and insurance costs combined with inadequate concessionary fare agreements for the over-60s mean that we need a significantly higher volume of fare-paying passengers to ensure that these services cover their costs" (Adams, 2008). There is then a shortfall in the amount of funding that the Government is paying local councils in order to support the free bus pass scheme, which Goulder (2007: 2) suggests is in evidence in the South of England:

> *"In the view of all Member authorities, this funding will not be adequate for them. To give just one example, ******* Council estimates that the scheme will cost £1.8m next year, but the Government grant, intended to pay for it, will cover only £1.1m if the most favourable distribution formula is used. The problem is that the Government has estimated what the national scheme will cost but there is a very high risk – at the door of the Council Tax payer – that the funding will be inadequate."*

The participants also stressed that accessibility, the bus drivers attitude, and up to date travel information were all essential to be able to make use of the local bus service. Three of the participants discussed the lack of communication they had experienced in line with the recent cuts and alterations to bus routes. One participant stated that they were only made aware of a bus route that had been cut after they were waiting at the bus stop for thirty minutes for a bus that never arrived. These three participants felt that the local bus companies could do more to keep their customers informed about changes to routes and timetables, including keeping the information at bus stops up to date. The bus driver's attitude was important to eight of the twenty participants, mentioning things such as patience to wait for them to be seated before they pulled away and when getting off the bus, lowering the low floor to help them get on, being friendly and approachable, and sticking to the timetable (as found in the majority of existing studies, see Chapter Two). In the Social Exclusion Unit (2006) report, it was suggested that older people like amenities to be close to their homes so that they have short distances to travel to them. The participants of the Getting Out and About project, especially those without access to a car and the older old, stated that they preferred to do their grocery shopping and visit amenities such as the Post Office, the bank, and the Doctors Surgery, as locally as possible. Three participants stated that they would rather shop in the convenience store near to their home, even if it was more expensive than the larger stores in the town centre, because it was quicker and less busy.

7.3.2 Mezzo level factors

Mezzo level factors are concerned with support at a regional or local level, including from friends and family. This includes, local authorities and local level policy, for example, Dial-

a-ride services are delivered, funded and accessed differently depending on the locality of the individual.

7.3.2.a The types and role of social and community networks

The participant's social and community networks were made up of friends, family, and organisations, such as the local Pensioners Forum. These networks had an impact on their travel-based mobility. There were however, several different manifestations of this, depending on the frequency of contact, which varied from regular to occasional; and the type of contact, which varied from face-to-face to virtual, including over the telephone and the internet. Within the interviews the participants conveyed different experiences within their social networks. Some participants discussed intricately interweaved networks, such as informal care networks that were strongly in evidence amongst the participants from a sheltered housing complex. There were also examples of friendship networks, such as through the local Pensioners Forum, who would regularly keep in contact with each other. In terms of travel-based mobility, these networks meant that if others were unwell or in need of extra support then they would pull together to make sure that the individual had everything they needed. Visiting, caring or occasional helping out others in their social networks motivated the participants to undertake travel-based mobility. Other participants talked about relationships rather than networks, an example of this was a male participant who would walk his daughters dog on a daily basis whilst she was at work (Male aged 69 years old), however, he stated that he did this to help his daughter and did not see this as exercise for himself.

For three of the participant's social networks were less motivational in terms of them undertaking travel-based mobility, as their friends and family would always visit them at their home and this meant that they did not have to go anywhere. For example, one of the three stated that her friends were close by as she lived in sheltered housing and the only family she had nearby was a daughter who would visit her as it was easier for her daughter to fit in visits around working schedules (Female aged 77 years old). Those with limited social capital, community and social networks struggled to be enthusiastic about travel-based mobility. One of the participants said that he had no social networks except for some family members who lived abroad. He described an isolated lifestyle with limited contact with others. He mentioned occasional telephone conversations with his family, once a week he attended a social session at a community centre, and occasional visits from his social worker (Male aged 70 years old), as his only contact with others.

7.3.2.b Who visits whom

Fifteen of the participants discussed how their social networks impacted their travel-based mobility. There were a number of ways that social networks had an impact which was based around who visits whom. For example, there were the participants whose family and friends would primarily visit them and so they would not undertake regular travel-based mobility to visit family or friends. The participants described these relationships as forming in this way because of the 'busy working lives' their family led.

> *Interviewer:* *So do your friends and family generally come to see you?*
>
> *Female aged 76:* *Yes I have one of my children and her family for lunch Sundays and my other child lives up the road.*

On the other hand, there were others who would regularly undertake travel-based mobility in order to help their family and friends. As the quote below discusses, these participants had an active role in helping their family or friends through activities such as dog walking or grocery shopping.

> *Interviewer:* *Do you ever make any journeys specifically to help your friends and family?*
>
> *Male aged 69:* *Yeah I help my daughter, in the morning I go there and I take the dog a walk, I have done that for several years now, everyday, seven days a week. It depends on the dog how far because it's a bull dog and it's getting on a bit now, and sometimes we go to the park and other times it can't be bothered or it's limping, well I think it's limping maybe it's putting it on I don't know (laughs) sometimes just around the block so.*
>
> *Interviewer:* *So you don't see that as exercise for yourself but more for helping…….*
>
> *Male aged 69:* *Eh to help the dog, I feed all the animals, and the dog, the two cats and the four guinea pigs.*
>
> *Interviewer:* *Ok so you go and do that everyday, and weekends as well?*
>
> *Male aged 69:* *Yeah.*

These type of relationships were often reciprocal, as the participant quoted above also suggested that if he was unwell and not able to go grocery shopping he could call on his family or friends for help:

> *Interviewer:* *Ok but what if you don't feel up to getting your groceries on Tuesday?*

Male aged 69:	*I just phone me daughter*
Interviewer:	*Ok so what if your daughter wasn't able to give you a hand or moved away, what would you do then?*
Male aged 69:	*I would phone my friend who lives near, or one of my neighbours, I get on alright with my neighbours.*
Interviewer:	*Ok so you have a good network then of people to help if you need it, so what other reasons do you go out for?*

Plus, there were some participants who experienced a mixture of these relationships, sometimes they would visit family and friends and other times family and friends would visit them.

7.3.3 Micro level factors

Micro level factors refer to demographic characteristics, health, socio-economic and lifestyle factors. This includes: age; gender; ethnicity; living arrangements; marital status; health; disability; mobility; income; leisure and physical activity; and smoking and drinking.

7.3.3.a Health

Health can impact mobility in later life in a positive or negative way (Bath and Morgan, 1998; and Soule, 2005). Evident from all of the interviews in the second phase of data collection is the fact that, when in good health in later life, the participants would be more likely to go out. When feeling ill, or in poor health this could impact motivation levels, as well as the physical ability to be able to. However, unlike factors such as the weather, where the participants felt they still had a choice to go out or not, health related factors often left them no choice over whether they could go out or not. This links to Metz's (2000: 150) notion of potential travel, the participants expressed frustration over health related factors which often meant that even if they wanted to go out they would physically not be able to:

Interviewer:	*Ok, is there anything that stops you from getting out and about?*
Male aged 65:	*Um, I have bad days some days where I can't get out, apart from that no nothing.*
Interviewer:	*Why is that?*

Male aged 65:	*Breathlessness and things, you know.*
Interviewer:	*So related to your health?*
Male aged 65:	*Yeah.*

One participant stated that since having an operation on a knee injury he had experienced a decline in travel-based mobility which had resulted in him going out once a week rather than everyday:

Interviewer:	*Ok, has the amount that you get out and about changed since your knee operation?*
Male aged 70:	*Quite a lot yes, before I go everyday, every minute I'm out, and now I only come out to this (day centre) once a week.*

Illness, injury and poor health had a strong impact on the participant's motivation levels. One of the participants explained how he had fallen and injured himself getting off of the bus a few years ago and this has resulted in him not feeling able to get on the bus since.

Male aged 81:	*Only in as much as I fell off the bus that time and it's made me very wary of getting on and off buses…..that is about my only experience of going into town (since falling off the bus previously).*
Interviewer:	*So would you say that the experience you had falling off the bus means that you don't use the bus now?*
Male aged 81:	*I haven't used it for ages, but I used to love going into town and just mooching around the shops but I haven't been able to do that.*
Interviewer:	*So if you hadn't had this experience do you think you would still be using the bus?*
Male aged 81:	*Um, yeah, yeah, I'm sure I would because I used to when I retired first I used to go into town from where I was living then everyday practically, so that more or less killed that off.*

7.3.3.b Living arrangements: individual versus couple mobility

Travel-based mobility is not always something that is undertaken on an individual basis. It was evident from the empirical data that couple and group dynamics are also relevant to this concept. In the interviews the participants discussed their household composition and the types of relationships that they had with the people that they lived with. Fourteen of the participants of the Getting Out and About project were living alone. However, four were living with a spouse or partner, and two were living with a spouse or partner and a child or children. These six participants, who did not live alone, suggested that the people

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they live with did have an impact upon their travel-based mobility. For instance, one female participant stated that if she lived alone instead of with her husband, she would probably not go out in the rain at all, unless she was going to work (Female aged 65 years old). Another female participant stated that her husband, who she lived with, often gave her a reason to go out. She hinted that without him to look after she would stay at home more frequently, "if there is nothing he needs, so there is nothing to go out for" (Female aged 77, talking about her husband). This therefore links travel-based mobility to interdependence in later life.

7.3.4 Facilitators and/or barriers

When the conceptual framework was introduced within Chapter Three, the examples of facilitators and/or barriers to mobility in later life, within the existing literature, took a rather pessimistic view by focusing solely on the barriers. The facilitators and/or barriers to mobility in later life were something that it was felt worth discussing in detail with the participants of the Getting Out and About project; in order to present a holistic view of the positive and negative impacts on mobility in later life. The participants of the Getting Out and About project highlighted a number of facilitators and/or barriers that impact upon mobility in later life, including: access to internet; access to services; access to a car or vehicle; access to public transport; accessible travel information; the condition of road or pavements; the financial cost of public and private travel; assistive technology; day of the week; time of day; fear of crime and youth culture; and the weather. Although these have all been discussed within existing literature, during the interviews it was the interaction between these facilitators and/or barriers, and the individuality of the impact that became visible. For example, the fact that some of the participants felt that bad weather and fear of crime were barriers to mobility, whilst others were not concerned by such issues, demonstrates the different influences that these facilitators and/or barriers would have on various people. The data also highlighted the interaction between the facilitators and/or barriers, and the way that this could impact mobility in later life: for example, limited access to a bus on a Sunday and the fact that it is raining could negatively impact an individual's decision to go and visit a friend. The following examples are facilitators and/or barriers described by the participants.

7.3.4.a Accessible travel information

Studies have noted that accessible travel information is of particular importance to individuals who regularly use or rely upon public transportation (see, Smith et al, 2006:

66). It has also been noted that if it was easier to get information about public transportation services then people would use them more often (see, DPTAC, 2002: 10). Six of the participants of the Getting Out and About project stated that accessible travel information was important to them, when getting out and about. These participants felt that if they did not have access to the necessary travel information this made their journey, particularly unfamiliar journeys, more difficult:

> *Interviewer:*   *Is there anything that stops you from getting out and about?*
>
> *Female aged 66:*   *No not really, though it makes it difficult when you can't find the information.*

The data from the MAPPED project (Op. Cit.) also highlights the importance of accessible travel information to the participants, particularly when making unfamiliar journeys. This is discussed in more detail within the following chapter (sub-section 8.2.2).

7.3.4.b Access to a car

It has been said that a car plays a "central role in independent mobility" (DPTAC, 2002: 35). This view was reinforced by some of the participants, who felt that having access to a car was vital for them to undertake travel-based mobility:

> *"Quite recently I bought the car because it became more and more difficult for me to get to the bus stop, not that my flat is very far to the bus stop because it isn't. It's only a few hundred meters but I still found it very difficult because well just because of the breathing and what have you. Another person wouldn't have that difficulty".*
>
> Female aged 65 years old

In the above quote the participant stated that poor health had lead her to purchase a car so that she was able to maintain her current level of travel-based mobility, and retain her independence. This demonstrates the interaction between the factors that impact mobility in later life, as the layers of framework and the design convey. The quote below shows one participant's reliance on his car to be able to complete day to day tasks such as grocery shopping and taking his son to various activities.

> *Interviewer:*   *Do you have anything that helps you to get out and about?*
>
> *Male aged 70:*   *My car.*
>
> *Interviewer:*   *And how does that help you?*

<table>
<tr><td>Male aged 70:</td><td>Well because my wife works part-time, I need to do the shopping, I need to take my son to various activities and because of his learning disability I go to quite a lot of meetings. I have been to a meeting in town this morning and I wouldn't have wanted to but I could have got a bus. It is vital for me certainly within the local environment to be able to get out and about.</td></tr>
</table>

Another participant described how driving cessation had led to a decline in his travel-based mobility. This example highlights the difficulties that face some older people in being able to get out and about once they are no longer able to use a car:

<table>
<tr><td>Interviewer:</td><td>So you said before the interview that you used to drive a car a few months ago, so how has that changed your ability to get out and about?</td></tr>
<tr><td>Male aged 70:</td><td>Yes, at first its very, very difficult, I start to cry, I say what's happened I was very good before I did the operation, after the operation I feel like I have nothing left.</td></tr>
<tr><td>Interviewer:</td><td>That can't have been nice for you (slight pause) roughly how many times do you go out per week.</td></tr>
<tr><td>Male aged 70:</td><td>Not now, before I go everyday, every minute I'm out.</td></tr>
<tr><td>Interviewer:</td><td>Ok, so that has changed since your knee operation?</td></tr>
<tr><td>Male aged 70:</td><td>Quite a lot yes, I only come out to this now once a week.</td></tr>
</table>

7.3.4.c Access to public toilets

Eight of the participants stated that access to public toilets had an impact upon their travel-based mobility. Other studies have noted the negative impact of access to public toilets on mobility in later life (for example see, Help the Aged. (2007c; and Tight et al, 2004: 5-12). As the quote below illustrates, the participants felt that access to public toilets was becoming more and more complicated, as the number of accessible options declined. Five of the participants stated that they felt the main reason for the decrease in the number of available public toilets was due to vandalism caused by young people.

"I went out to get a few things that I would need, and the public toilets had closed, I mean they were there when I went in but when I came out they were closed. This is another big problem, public toilets they are a major problem, there are only two at ground level in town, the one at Debenhams and the one by the bus stops. They are all up higher you know and ah you can't get to them in an emergency and of course as you get older your bladder does get weaker, and it's a constant complaint at the Pensioners Forum (both laugh). These young people do terrible damage and even the ones in the shopping

centre at the bottom of town are all closed down now because they were vandalised".

<div align="center">Female aged 65 years old</div>

Two of these eight participants felt that the lack of accessible public toilets severely impacted their travel-based mobility, as it would often result in them not going out unless they were familiar with the locality and sure that they would be able to easily locate a public toilet.

7.3.4.d Assistive technology

Five participants stated that they used some form of assistive technology to help them get out and about. These participants used either, or all of the following: a mobility scooter; a walking stick; and a wheelchair.

Interviewer:	*Now I notice that you use a walking stick, do you use a mobility scooter as well?*
Male aged 77:	*Yeah I have got one of those four wheelers; I use it regularly when I go up to the local shops because it makes it easier to carry the parcels down.*

The participants who used assistive technology in their everyday lives were happy to do so, as it meant that they were still able to get out and about independently. However, one participant who did not already use assistive technology expressed concern over the possibility of using assistive technology in the future:

Interviewer:	*Do you think that would change if you didn't have a car though?*
Female aged 65:	*Well that's right, this is what I'm saying if I could downgrade it to a scooter, I don't know because I probably couldn't get all that far on it. I don't know it would make a bad impact on me thinking about it.*

7.3.4.e Condition of pavements and roads

Four of the participants mentioned the condition of the pavements and roads as causing them difficulties when travelling around the local area, this has been recognised by Help the Aged (2008b) as leading to isolation and loneliness in later life.

Interviewer:	*Ok and do you ever experience any difficulties when you are travelling around the local area?*
Male aged 81:	*Some of the drop pavements aren't so good as they should be, there is one around here that is too narrow.*

One female participant (aged 65 years old) stated: "the condition of the pavements and roads does not help me either; I have almost fallen over a few times now with the pot holes and such, they are a hazard".

7.3.4.f Fear of crime and youth culture

Fear of crime and youth culture is a previously discussed barrier that impacts mobility in later life (for example see, Social Exclusion Unit, 2006: 88-89). Six of the twenty participants of the getting out and About project mentioned that fear of crime and/or youth culture, in terms of the antisocial behaviour of gangs or groups of young people on the streets, made it difficult for them to travel around the local urban area. A further four participants also stated that they did not like going out when it was dark because of a fear of crime and/or youth culture. This meant that the travel-based mobility of half of the sample from the Getting Out and About project was impacted in some way by a fear of crime and/or youth culture.

Interviewer:	*Ok so do the young people stop you from going into town then?*
Male aged 65:	*A lot of people will not go into the town, they do not feel safe, they are fed up with push bikes and skate boards where they are getting frightened. Basically a lot of people will not come out until half past nine and are going to be back indoors by half past three.*
Interviewer:	*Why is that?*
Male aged 65:	*Because of young people, fear, I don't know. It's quite frightening actually. I have been on about this for five, six, seven years since I have been here you know, it's quite a serious thing, it's the same as the park you know you have got some beautiful parks down there but a lot of elderly people won't use them because of fear of crime (pauses). The city is not geared up for elderly people at all. Because it's a young person's city, anything and everything is basically geared up for young people.*
Interviewer:	*What makes it geared for young people rather than older people?*

Male aged 65:	*Well the pubs, the clubs, the shopping. I have a difficulty to buy clothes. I know a lot of elderly women have problem buying clothes, you have a look around the shops, there's not many shops that cater for the elderly people, or middle aged people, um and it's gradually getting more difficult for them to do that, you know they have to go to charity shops, or they are forced into that.*

One participant described how she tried to avoid certain bus routes because she felt there were more problems on that particular route, especially with abusive language such as swearing. As the quote below shows, she felt that young people have little or no respect, or regard, for older people, and so, if she had the time, she would wait for an alternative bus:

Interviewer:	*When you are travelling around the local urban area do you ever experience any difficulties?*
Female aged 69:	*Um yes basically it's usually the younger ones, no disrespect to you, but they lack respect and the selfishness and with the prams and things they have no regard for older people and things like that, I find it rather disturbing myself.*
Interviewer:	*Would you say that this affects your journeys?*
Female aged 69:	*It doesn't affect my journey just to think about it there are certain buses that if I can help it I don't go on them, because that is where the problem lies. The swearing on a certain bus during the whole day, if I can help it and if I'm not in a rush I won't go on that bus because that's where the problem lies with the bad language. I mean I watched an older person like myself, she was lucky because they have the prams in the way and the handle of the pram it caught in her jacket and she was oh (acts falling over) and it was a bloke that grabbed her, and if she had of fallen over, you know those young people they never even got up and apologised, and I thought these are the sort of things that I don't like because its selfishness and disrespect because if we are lucky we are all going to reach that age, if we are lucky.*

One participant stated that he was not worried about youth culture before he travelled, although it did make him more cautious when travelling, and that he would remain quiet rather than speaking to anyone he felt maybe a risk:

Interviewer:	*Ok so you notice that behaviour quite a lot?*
Male aged 65:	*Yes within the local area the youngsters are selfish, not all of them but you know the majority of them.*
Interviewer:	*Ok so does that make you worry before you travel?*

> Male aged 65:   No, no, I'm just more cautious if you see what I mean, I say nothing.

Interestingly, of the ten participants that mentioned a fear of crime and/or youth culture one was a car driver, the rest were bus users. And of the ten participants who did not mention a fear of crime and/or youth culture five of those were car drivers. This shows that fear of crime and/or youth culture had a larger impact on the participants that used public transportation services.

7.3.4.g Day of the week

Six of the participants stated that they would rather go out during the week, when most people were at work, rather than weekend days, when people are more likely to be off work and so it is busier. Two participants also suggested that they did not go out to town around the end of the month, when most receive their pay checks, as it was too busy:

> *"But I find it difficult when I go in the town, on very busy days, especially Friday and Saturday when everybody is getting paid and ah they are thinking about their night out, I find that difficult to cope with because I'm aware, and I don't think I'm alone, all older people are aware to it, that the stress that the young people are feeling of having to go and earn and spend, ah just to exist really".*

> Female aged 65 years old

7.3.4.h Time of day

The time of day at which journeys are undertaken can have a significant impact upon travel-based mobility in later life, as also found by Burnett (2005: 7-8). Twelve of the participants stated that they did not like going out in the dark and would only do so if they really had to. One female participant (aged 65 years old) stated, "I never go out in the dark now", describing this was something that had changed as she had gotten older.

> Interviewer: So you don't mind travelling in the dark?
>
> Female aged 67:   No I don't mind travelling in the dark, in fact I like travelling in the dark. Night driving for me for some reason I find it easier, um, some people don't because of the lights and things.
>
> Interviewer: And if you didn't have a car, would you still be able to go out when it is dark then?

> *Female aged 67:*   *Well my husband would be unhappy going out at night without the car, he likes me to have that base, but yes I suppose I would have to I would get a taxi. Not more than twice a week though as it is quite expensive, I would buy what I could afford so I would have to adjust it to what I was doing, I'd work it out a week ahead. I would not use a bus at night, no I would not risk being a woman and on my own in any big town or park because I wouldn't be able to fight back, I wouldn't be able to protect myself or run.*

Ten of the participants also discussed how they would avoid going out at peak times, such as when parents were taking their children to school, lunch time, and the rush hours that people were getting to and going home from work:

> *"And if you go at the right time after all the mum's have taken the children to school or nursery and done their morning shopping. I used to keep out of their way, so if I was going to go out I would go during the children's lunch hour, I would get the bus during the children's lunch hour if I was going to town, and try to avoid the rush hour when everybody is coming and going for work. Because I think that is a bit inconsiderate of older people to expect to use those services when they are most needed by others, so that's what I did".*

> Female aged 65 years old

7.3.4.i The weather

The weather can have a positive or negative impact on travel-based mobility in later life (Eisenhandler, 1990: 7; and Tight et al, 2004: 5-12). The Getting Out and About project followed a spell of particularly poor weather, which included heavy rain, snow and ice. During the interviews the participants expressed similar views on how this affected their travel-based mobility. It was clear from all of the interviews that 'good' weather, or dry and sunny spells, had a positive affect that the participants themselves would 'feel' more like venturing out of the house. In turn 'bad' weather, or cold and wet spells, had more of a negative impact upon the travel-based mobility of these participants.

> *"And if the weather is really bad then obviously you don't go because its like sheets of ice, well you can see we have got all the sand and stuff down out there at the moment, you know, we have had a really bad winter this year".*

> *Male aged 65 years old*

Thus, perhaps rather obviously, the more extreme the weather conditions, it seemed the more likely it is for the older people not to go out at all. However, no existing literature that focuses on mobility in later life focus specifically on the precise impact of the weather.

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"Yeah it's the weather because I fell over and the cold weather affects my arthritis more, and I am allergic with the heating, it's too much the central heating I become allergic".

Female aged 71 years old

However, not all of the participants were put off by bad weather conditions, "no, things like the weather and that don't really sort of stop me" (Male aged 68 years old). Four participants stated that they may adjust the modes of transport that they used during bad weather, so for example, instead of walking to the shop they may catch the bus if it was raining. All of the participants did suggest that if the journey was necessary (i.e. to shop to get food) then they would generally go anyway, despite the weather. Although if the journey was not essential then they may postpone it until the weather improved or even reschedule it for another day. The only exception to this was in the case of extreme weather conditions, such as snow and ice, which the participants stated that they would not go out at all.

Male aged 70: *And of course the cold!*

Interviewer: *You mean the weather?*

Male aged 70: *Yes.*

Interviewer: *Ok, so how does that affect you?*

Male aged 70: *I mean I would be reluctant, these days to walk out in the rain or the cold. I mean ten years ago it wasn't a problem, but at seventy and because I'm.....by always having a car I'm reluctant, but I'm sure that if I was unable to drive I would find other ways of getting around and undoubtedly I would get used to it again, though probably not as easily, to using public transport.*

7.4 The substitution and/or supplementation of one form of mobility for another

So far this chapter has narrowed in on travel-based mobility as an example of testing the findings, in relation to the development of the conceptual framework for mobility in later life. However, the concept of mobility is evolving in line with developments in the field of transportation and communication technology, as discussed in Chapter Three. This study also argues that there are other forms of mobility that are also relevant, namely: physical mobility, virtual mobility, assistive mobility, imaginative mobility, communicative mobility, and immobility (as outlined in Chapter Three). The participants did not discuss these forms of mobility in the ways that they are theoretically set out within the thesis; in the interviews there were several conversations that explored these various forms of mobility. For example, many of the participants talked about using the landline telephone, although they did not refer to this as communicative mobility. Throughout the interviews it was clear to the University researcher that the sample of older people often substituted and/or supplemented one form of mobility with another. There were many examples of substituting one form of mobility with another, this included: purchasing a holiday online, which substituted physically going to the travel agent, and telephoning a son or daughter instead of physically visiting or meeting them. There were fewer examples of supplementing one form of mobility with another in their current lifestyles; however some of the participants described the using of a mobility scooter, or assistive mobility, as enabling them to maintain physical mobility. The participants were more likely to consider adjusting their current behaviour if they were to become less mobile or immobile in the future. If they were to become less mobile or immobile many of the participants felt they would accept help for family and friends as and when they needed to, although they would still try to do as much for themselves as possible. This demonstrates how physical, assistive, communicative and virtual forms of mobility could be supplemented for one another. For example, a study that explored food and grocery shopping in later life highlighted a number of ways that older people cope with grocery shopping (McKie, 1999). Focusing on older people with mobility problems, stating that "the proximity to neighbourhood shops, and supermarkets increased food choices" (McKie, 1999: 533). The adoption of strategies, such as splitting the shopping over several trips and/or days, meant that the task was divided into manageable pieces (McKie, 1999: 533). McKie (1999: 535) also suggested that the older participants would ask carers and/or family members to carry heavier items for them, hire a car every six weeks or so to overcome the difficulties of carrying heavy items, and get items delivered to their home. This is a good example of supplementing one form of mobility with another; the participants

undertook their own grocery shopping, developing strategies if they experienced a problem.

The participants of the Getting Out and About project suggested that virtual mobility may be more beneficial to them if they were to become less mobile or immobile, again they would use internet grocery shopping services as a strategy if they were busy or unable to get to the shops, this suggested that they were open to the possibility of supplementing physical with virtual mobility. Interestingly, McKie (1999: 534) found that carers were required to use local shops, which are more expensive than supermarkets, and therefore social service assistance with grocery shopping could be problematic. Older people, especially those with mobility problems, also bought ready made meals, in order to cut down the weight of their shopping and the preparation time of their meals, this was despite their dislike of this type of convenience food (McKie, 1999: 532). Locher et al (2005: 13) notes that, "schemes such as those that deliver weekly portions of frozen meals to older people, not only directly improve nutrition, but directly impact on health, quality of life, and potentially enable older adults the means to maintain independence within the community". When the findings of the Getting Out and About project are compared to these other studies the inter-relationship between these forms of mobility are visible. Older people do substitute and/or supplement forms of mobility for one another, whether by choice or out of necessity. McKie (1999: 533) found that the participants felt that their involvement in social networks through activities such as grocery shopping was of positive benefit to their well-being. Being able to supplement and/or substitute one form of mobility for another may have a positive or negative outcome for an individual, and this is dependent on whether it was their choice, or undertake out of necessity. Therefore, the example of ordering grocery shopping over the internet maybe an empowering experience, or may lead to a feeling of dependency, depending on the individual circumstances behind the situation. Therefore, the context of the situation, as well as the personal circumstances of each individual, has an impact upon mobility in later life.

7.5 Visualising the inter-relationships between the conceptual intersections during the data collection

As this chapter has demonstrated, during the interviews the participants discussions around mobility in later life highlight, not only the importance of mobility within their everyday lives, but also the range of forms of mobility that they substitute and/or supplement with one another. The use of qualitative data collection methods meant the University researcher could explore these forms of mobility, which lead to the recognition of the complexity and diversity of mobility during the period of later life (as discussed further in Chapter Nine). The interviews also allowed the University researcher to visualise through the eyes of the participants, the inter-relationship between the conceptual intersections, through the eyes of older people. Throughout both phases of data collection the stories depicted by the participants brought to life the connections between the conceptual intersections of mobility, independence and social inclusion in later life. The participants described mobility and independence in later life with positive connotations linked to ideals of quality of life, well-being and social inclusion; whilst being less mobile or immobile in later life was associated negatively with dependence and social exclusion. Being able to do things for themselves without relying on others was important to all of the participants, as well as interdependence. This outlines the inter-relationships between the meanings that older people give to the concepts of social inclusion, independence and mobility in later life, and confirms the discussion in Chapter Three (sub-section 3.4). It also confirms the use of the rainbow design, dotted lines and arrows, as a way of demonstrating these inter-relationships.

7.6 Summary

This chapter has described the findings of the Getting Out and About project in relation to the first research question, 'what patterns of travel behaviour are associated with later life?' It has provided an overview of the key aspects of travel behaviour in later life, including the travel patterns, needs and expectations of the participants of this study. The chapter has explored travel-based mobility in later life, by defining the terms, its importance and the participant's motivations for undertaking it. It has also presented the factors that impact travel-based mobility in later life. These factors have been used to develop the conceptual framework for mobility, as discussed in more detail within Chapter Nine. The substitution and/or supplementation of one form of mobility for another and how the data collection allowed the University researcher to visualise the inter-relationships between the conceptual intersections has also been examined. The next chapter presents

the findings from both phases of data collection, in relation to the second research question, 'in what ways can information and communication technologies support the travel-based mobility of older people, and what are the limitations?'

Chapter 8: Findings – The ways that information and communication technologies can support later life travel-based mobility

This chapter follows on from the previous chapter in presenting the findings from the two phases of empirical data collection that underpin this study. These two phases of empirical data collection are distinct, and thus, inform specific parts of the research questions, as outlined in Table 9. This chapter focuses on presenting the most significant findings in answer to the second research question. Like the previous chapter, this chapter highlights the relevant links between the empirical data and literature and policy. The references here though, are purposefully brief and descriptive, as a more in-depth analysis of these issues is offered in the following discussion chapter.

Table 9: The phase of empirical data collection primarily being drawn upon in order to inform the specific parts of the second research question.

Research question 2: In what ways can information and communication technologies support the travel-based mobility of older people, and what are the limitations?

2a)   Does accessible travel information assist older people in getting out and about?

2b)   Would the provision of tailored handheld navigational devices support older people in getting out and about further and more often?

2c)   Do older people substitute physical with virtual journeys, and if so, how do they feel about it?

Chapter number	Chapter 8		
Research question	2		
	2.a	2.b	2.c
Phase of empirical data collection primarily drawn from	Phase One: MAPPED project	Phase One: MAPPED project	Phase Two: Getting Out and About project

In response to research question 2a and 2b the data is drawn primarily from the MAPPED project (Op. Cit.), whereas for question 2c the evidence is from the Getting Out and About project. There are occasional instances though, where data from both phases of the data collection has informed specific parts of the second research question, and so where applicable these are clearly visible within the text, at the appropriate point. This chapter is split into four sections. The first section, 8.1, provides background information to the second research question, 'in what ways can information and communication technologies support the travel-based mobility of older people, and what are the limitations?' The types of information and communication technology that the participants have access to, and make use of, are explored. This section also looks at what motivates these older people to make use of information and communication technology. The data collected through the use of the hypothetical vignettes in the Getting Out and About project is also presented in this section. The second part of this chapter, 8.2, directly informs research question 2, 'in what ways can information and communication technologies support the travel-based mobility of older people, and what are the limitations?' by focusing on the ways that information and communication technology can support travel-based mobility in later life. This section also answers the three sub-questions of the second research question by providing specific examples of how information and communication technology can support travel-based mobility in later life. This section is divided into three sub-sections. Sub-section 8.2.1 responds to research question 2a, 'does accessible travel information assist older people in getting out and about?' The second sub-section 8.2.2 refers to research question 2b, 'would the provision of tailored handheld navigational devices support older people in getting out and about further and more often?' Sub-section 8.2.3 answers research question 2c, 'do older people substitute physical with virtual journeys, and if so, how do they feel about it?' Section 8.3 looks at the remainder of research question 2 'in what ways can information and communication technologies support the travel-based mobility of older people, and what are the limitations?' by highlighting the limitations of information and communication technology in supporting the travel-based mobility of older people. Despite the positive connotations of the overarching aim of this study, it is important to acknowledge that, in terms of the potentially supportive role that information and communication technology can have in later life, there is also a pessimistic side. This section explores such issues through its focus on the barriers to using information and communication technology in later life, such as financial cost, lack of adequate training courses, and poor design. Alongside this there are limitations in the level of support that information and communication technology can provide older people, for instance such technology does not replace the need for human interaction. This section uncovers such limitations in order to realise the full potential of information and communication technology in supporting travel-based mobility in later life. The fourth section of this chapter, 8.4, provides a summary of the key findings in answer to the second research question.

8.1 Older people and their access and use of information and communication technology

This section provides background information to research question 2, 'in what ways can information and communication technologies support the travel-based mobility of older people, and what are the limitations?' This section is divided into three sub-sections and draws on the data from both phases of the empirical data collection. The first sub-section, 8.1.1, examines the types of information and communication technology that the participants have access to, and make use of. Sub-section 8.1.2 looks at their motivations for using information and communication technology in later life, whilst the final sub-section, 8.1.3, explores the level of awareness of information and communication technology amongst the participants.

8.1.1 The types of information and communication technology that older people have access to and make use of

There is an important distinction between measuring the 'access to' and 'use of' information and communication technology, as has been discussed in the literature review chapter (sub-section 3.5.3). Having access to information and communication technology does not necessarily mean that it is being made use of, and alternatively if someone is making use of information and communication technology it does not mean that their access route is straightforward. In order to increase use of information and communication technology by socially excluded groups within England, the previous government rolled out policies and schemes which aimed to increase the availability of computers and the internet through public access points, such as the UK online centre network and public libraries (Cabinet Office, 2004: 1). Alongside a number of short courses covering basic computer skills, such as the 'Skills for Life', at local colleges and through charities, including Age Concern, in a bid to increase the number of older people using information and communication technology (Cabinet Office, 2004: 1). However, this research does not aim to evaluate the success or failing of such measures. Instead it explores whether the participants have access to, and make use of, information and communication technology, as well as the reasons for their use or non-use. The data reveals some interesting patterns in the ways that the participants use or do not use information and communication technology, as discussed below.

Due to the restrictions over time and the limited financial resources of the MAPPED project (Op. Cit.), it was decided that all of the participants should have previous

experience of using either a mobile telephone, or the internet, before taking part in the field trials, as stated in the methodology chapter. Five out of the seven participants used either a mobile telephone or the internet on a daily basis, and the remaining two on a weekly basis. Despite these initial similarities in the amount that each participant used either a mobile telephone or the internet, when probed further within the interviews; these seven participants discussed vastly different experiences of accessing and using information and communication technology. Not all of the seven participants used both a mobile telephone and the internet. Those who owned a mobile telephone discussed how owning a mobile telephone was synonymous with accessing one; describing their use in terms of how it fulfilled a need:

"……I only use it for just what I want, so text and phone".

Female aged 67 years old

However, those who used the internet described a wider range of experiences in terms of both access and use. Five of the seven participants owned their own computer and so had access to the internet at home. The other two participants did not use the internet: one had used a friend's internet but did not enjoy the experience and so had chosen not to use it again, and the other participant had no desire to try. The five participants who stated that they regularly used the internet at home reported either a love or hate relationship with it. Two of the five participants described using the internet for many day to day tasks, the examples they gave were: searching for information; banking and paying bills; and booking holidays and days out. As the quote below illustrates, this experience of using the internet was one of enjoyment:

Interviewer: *Would you say there is anything that you don't like about the internet?*

Female aged 67: *No I think its great (laughs) I wish it was around a long time ago, we use it a lot.*

Although not all of the participants described such a positive experience of using the internet. The remaining three out of the seven participants described their relationship with a computer and the internet as problematic, stressful or something which they undertook out of a sense of necessity, or duty, rather than for pleasure:

"I have got a computer which I find very tiresome, I get very frustrated with the internet, but that's a lack of expertise I think".

Male aged 80 years old

Similarly to the participants of the MAPPED project (Op. Cit), the participants of the Getting Out and About project had differing experiences in terms of accessing and using information and communication technology. The sample for the Getting Out and About project included ten participants who regularly used information and communication technology, and ten that had either tried and did not get on with, or had never used information and communication technology. During the Getting Out and About project it was possible to explore, in more depth, a number of topics that arose during the MAPPED project (Op. Cit.), thus, distinguishing the types and the ways that older people use information and communication technology. Nineteen of the twenty participants owned and regularly used a landline telephone, the remaining participant instead chose to use a mobile telephone, as he stated that he could not afford to have both. Nine of the participants owned a mobile telephone, three of which kept it in case of emergencies, whilst six used it once a month or more. When probed about the functions that they used on the mobile telephone, it became evident that there was a difference between using the mobile telephone for making calls and texting.

> *"The best way to communicate is the way we are doing now, face-to-face, the next best way is to talk to somebody on the phone, I don't really enjoy texting".*

> *Male aged 70 years old*

Two participants stated that they enjoyed using the texting option, whilst the remaining seven said that they did not use it and probably never would. As the quote below highlights, these participants felt that a mobile telephone should be something simple and easy to use, which they valued over a mobile phone with all the lastest gadgets.

> *"A mobile phone is a mobile phone not a camera, I'm afraid I am still at that stage".*

> *Male aged 70 years old*

It became apparent that use of a personal computer is not necessarily corelated with use of the internet. Twelve of the twenty participants had previously used a personal computer, nine of which had also used the internet. As with the participants of the MAPPED project (Op. Cit.), the participants who had used a computer and/or the internet discussed a variety of experiences in terms of access and use. Two of the participants stated that they did not have access to a personal computer and the internet within their own home, one gaining access at the public library and the other in the comunial area of the Sheltered Housing complex where they were a resident. Both stated that they would

prefer to have instant access to a personal computer and the internet within their own homes, although they could not afford to do so.

8.1.2 Motivations for using information and communication technology in later life: Remaining independent and able to do things for oneself

The participants of the Getting Out and About project cited a number of motivations for their usage of information and communication technology, all of were connected to a sense of being independent and able to do things for themselves. Five of the participants talked of using information and communication technology within their working lives, and having transferred these patterns of usage into their private lives. The older old discussed use of computers at work as a new phenomenon which had began just before they had retired, this they said had made them inquisitive to learn more upon retirement:

> *"I used a computer in the office just before I retired, at that time computers were pretty new but I did have two of them on my desk. They forced them on me, one was for emails and the other was what they called an all-in-one which meant it did several jobs, um and I used it when I had to and that was all. I had no idea what I was doing, and so I went on a course a few years ago when I decide I ought to keep up with what's going on in the world, that's why I got it".*

> *Male aged 78 years old*

The younger old, including the two participants who were still working part-time, discussed the use of mobile telephones, computers and the internet as part of their day-to-day role at work. They stated that over time things had changed within their working environments, suggesting that they had no choice but to learn such skills as it had become part of their job description, and without such knowledge they would have been unable to do their jobs. As the quote below shows, this usage at work gave these participants the skills and confidence to be able to use information technology within their private lives:

> *"….I actually enjoy new technologies…..I think I have learnt some of it through experimental learning, um but yes I have learnt most of it through working, it's been absolutely essential, I probably wouldn't have accessed them at all had I not needed to".*

> *Female aged 65 years old*

Six of the participants that did use information and communication technology stated that, in the first instance, they had begun to use it to keep in touch with friends and family. They found this helpful for remaining in contact with both, those who live at a distance within the

UK, and particularly useful for those who live overseas. All six of these participants stated that, in such circumstances, it was the convenience and the low cost of keeping in touch with friends and family via information and communication technology which had allowed them to consider using it in the first place. Three of them also highlighted the fact that it was their family or friends that had introduced them to using certain types of information and communication technology, as the quote below illustrates:

> "Actually Skype is what my father uses, he lives abroad and he is almost ninety, it's essential because the cost of sending information and even talking on the telephone is high, so he has pushed me into using it".

> *Female aged 65 years old*

However, the data shows differences in the reasons why the participants used a mobile telephone, opposed to sending an email. The mobile telephone and landline telephone were described as a tool to aid communication with family and friends. For those participants with family and friends living at a distance, especially those who were overseas, the telephone was considered essential. One of the participants suggested that just by hearing her children's voices she knew if they were okay or not:

> "I prefer to hear my kid's voices so that I know they are okay, I can tell by their voices what's going on, you know that sort of thing".

> *Female aged 75 years old*

The data demonstrates that the participants felt differently about using email services as a form of communication. By contrast the participant's feelings about their use of email differed to that of the telephone. All of the participants considered email to be something that is more suitable for keeping in touch with friends and colleagues, rather than family members, describing it as being less personal than the telephone. None of the participants made reference to tasks like being able to send photographs as email attachments. When probed further about whether they used email to send personal items such as photographs, and what they felt about it. The participants suggested that it was something they liked the idea of, yet they had not had the chance to use themselves. The one participant who had received photographs via an email from his son stated that he had enjoyed the experience and so was thinking about attending a course to learn more about digital photography, so that he could reciprocate the gesture. The participants who made regular use of email used it to keep in touch with friends or other members of organisations they belonged to. Those who used email were likely to use it on a weekly basis, or perhaps twice a week. Email was considered to be less intrusive than the

telephone, and so some of the participants felt that it suited certain communication situations better than others:

> "I do have friends that I email and what I like about email is that it isn't intrusive, as if you telephone somebody unless they are going to ignore the telephone it demands that they deal with you in your time scale, whereas with email and texting to a large extent what you do is you can drop an idea or a thought into someone else's mind and they can respond in their own time, so I find it's not intrusive and that's why I use it".

> *Female aged 65 years old*

The participants also discussed several other motivations for their use of information and communication technology during the interviews. One of the participants said that after a friend had recently upgraded their mobile telephone they had given them their old mobile telephone. Before being given this mobile telephone the participant stated that he was not interested in purchasing one for himself, as he did not like the idea of having a private conversation in a public space. Nonetheless he said that he had started to use it as he felt that, as it was a gift, it would be discourteous not to at least have a go. To overcome his concerns about using it in public he decided that if he was uncomfortable in particular surroundings then he would not answer. This particular participant had only been using this mobile telephone for a couple of days before he came to the interview, but had already made several telephone calls, and was thinking of experimenting and trying to use the texting option soon. He also indicated that once he had gotten used to this particular telephone he was highly likely to upgrade it to something newer on the market. It was interesting to see how he had changed his perspective once given the opportunity to have a go with the technology, which is also something that was evident in the findings of the MAPPED project (Op. Cit).

Three of the participants that regularly used information and communication technology stated that it was purely out of 'fascination' that their use had developed. These participants used the internet on a weekly or daily basis, and they personally owned lots of the 'gadgets' that were currently on the market, such as satellite navigation systems, the recently released models of mobile telephones, and digital cameras. Before purchasing information and communication technology they described how they would conduct detailed research into the products via the internet. This fascination did not mean that they were confident in using the technology, for example as two of the three participants discussed difficulties with instruction booklets. However, the fascination did mean they were more inclined to have a go and try or test the technology. The final motivation for

using information and communication technology that the participants described was connected to the internet which they felt was as a valuable source for information. The participants liked having so much information available at their finger tips; however, they did feel that their skills in searching for information on the internet could be improved. As the quote below shows, one of the participants who had not used the internet suggested that it was becoming obvious to him that the only place that information was available was on the internet:

> *"….but now we are getting more and more where the only way you can get information is on the internet, in fact the only information they give you is on the internet".*

> *Male aged 68 years old*

This alone had forced him to think about learning how to use the internet and maybe buying his own computer and an internet connection, something he was still considering for the future at the time of the interview. In the main, the participants were aware of what they could use information and communication technology for, whether they decided to use it or not, as the following sub-section explains.

8.1.3 Awareness of the functions of information and communication technology

During the individual interviews of the Getting Out and About project, hypothetical vignettes were used to put each participant into the same two scenarios. This method allows, a "systematic comparison of individual responses to different behaviours" (Barter and Renold, 1999: 3). In this case, the hypothetical vignettes were used to place the participants in different mobility situations, in order to explore their feelings over the potential of information and communication technology for assisting later life travel-based mobility. The intention of the hypothetical vignettes was to explore the participant's reaction to a figurative situation. Characters were created and used in order to see how the participants would react to these situations, regardless of their own personal circumstances and level of use of information and communication technology. Vignette A (see, Box 1 below) was designed to explore the participant's awareness of the functions of a computer and the internet; it soon became evident that, even if the participants had never used a computer or the internet before, they were still knowledgeable about what they could potential be used for. Vignette B (see, Box 2 below) was intended to explore whether the participant's would instantaneously think to use information and communication technology in this type of urgent situation, or not.

Box 1: Vignette A

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<u>Vignette A</u>

John is 68 years old and lives on his own in a flat near to Bedford Place in Southampton.

He has two children, Mary who is 40 years old and lives in Bournemouth, she is a single mother with two young children of her own, and James who is 37 years old and lives in New Zealand with his wife and three young children of his own.

His son James has suggested that John purchase a personal computer.

Issues identified for probing:

i. What kinds of things could John use the computer for?

</div>

Vignette A revealed that whether or not the participants had access to, and regularly used a computer or the internet, most of them were aware of what this kind of technology could be used for. Two participants stated that they did not know what a computer was for and so were unable to comment on this vignette. Of the remaining eighteen participants all identified a potential use of the computer for John to be communicating with his children and grandchildren, particularly those in New Zealand. This quote, from a female participant aged 65 years old who stated that she has no desire or need to use a computer or the internet, shows that her awareness is high, despite not wanting to use such technology herself:

> *"I think you can use it for email can't you. He could have conversations on the chat line; he could set up his own website (pause). They do electronic books now don't they (pause) um, grocery shopping…..I do understand the significance of the communication aspect most definitely, and he can obviously communicate with his son in New Zealand as well".*

> Female aged 65 years old

This illustrates the fact that the majority of this sample of older people made informed decisions over whether they wished to use information and communication technology or not.

Box 2: Vignette B

<u>Vignette B</u>

Angela is 75 years old and lives on her own in the city centre. She suffers from mild arthritis, but otherwise is in fairly good health.

Her friend had moved to a Sheltered Housing complex on the East side of the city. Angela is unfamiliar with this part of the city, but plans to visit her friend travelling by bus.

When Angela gets to the bus stop she realises that she has missed the bus, and the next one is not for another hour which will make her late.

Issues identified for probing:

i. What do you think Angela would do next and why?
(Probe for use of technology such as a mobile phone)
ii. What do you think Angela would do if she was attending an appointment, instead of visiting a friend?
iii. What do you think Angela would do if it was raining?
iv. What do you think Angela would do if it was dark?
v. What would you do in that situation and why?

The analysis of Vignette B demonstrates that ten out of the twenty participants suggested that Angela would use her mobile telephone to either, call her friend to tell her she is running late, or call for a taxi if she had missed the bus. Nine of the participants felt that if Angela missed the bus for an appointment rather than meeting a friend that she would act differently because they felt it is more important to be on time for an appointment. Two of the participants that had not previously thought Angela should use a mobile to contact her friend when she was running late, suggested that Angela would use a mobile phone to contact the place of her appointment so that she could inform them that she may be late, or to call for a taxi. If it was raining, twelve of the participants felt that Angela would not have gone to visit her friend in the first place. Of the remaining eight participants, six felt that Angela would have carried on her routine just with an umbrella or waterproofs. Sixteen of the participants felt that Angela would not have gone to visit her friend at all if it was dark, especially by bus. Of the remaining four participants three felt that Angela would go home if she had missed the bus in the dark, whilst the remaining one thought she would go home to telephone for a taxi. None of the participants thought that Angela would wait in the dark for the next bus.

When the participants were placed in the scenario themselves though, there was a visible change in their suggested reaction. One participant stated that they would have a mobile phone with them to ring their friend on. Two stated that if they had their mobile phones with them then they would use them to call their friend; however, they also felt that it was unlikely that they would have their mobile phones with them, as they usually did not:

> *"I don't like being late, and I can afford a taxi, not regularly but in that situation.*
> *And had I got my mobile phone with me I would be able to phone for a taxi,*
> *but the chances are I wouldn't have it with me".*

> *Male aged 70 years old*

One participant stated that they would ask the people walking by in the street until they found someone who agreed to let them use their mobile phone. None of the remaining sixteen participants suggested that they would use a mobile telephone themselves; instead they stated that they would go home and ring their friend to rearrange the visit for an alternative date. This therefore highlights that the participants had different solutions to this scenario depending on whom it was based upon. The participants were more likely to suggest that Angela would own, know how to use, and have with her a mobile telephone, which she would use in this situation. When thinking about themselves however, the participants were less likely to think about using a mobile telephone in this situation. In a similar vain to the first hypothetical vignette this shows that the participants are aware and appreciate the functions of such technology, but that they choose for it not to be a part of their everyday lives.

8.2 Examples of the ways that information and communication technology can support travel-based mobility in later life

This section explores the ways in which information and communication technology can support travel-based mobility in later life. During the MAPPED project (Op. Cit.), handheld navigational devices with specifically tailored accessibility information were designed and tested with a sample of older people and people with disabilities. There were limitations with the actual handheld navigational devices that were trialed, which included the poor GPS signal strength, the small screen and buttons, and the poor quality colours and maps that made the device difficult to use, as discussed in the methodology chapter (section 5.3 and 5.4). Despite this though, the participants felt that the overall concept and functions of the handheld navigational device, and the quality of accessibility information available at the touch of a button, were excellent. This section informs research question 2, 'in what ways can information and communication technologies support the travel-based mobility

of older people, and what are the limitations?' by focusing on the ways that information and communication technology can support travel-based mobility in later life. This section also answers the three sub-questions of the second research question providing specific examples of how information and communication technology can support travel-based mobility in later life. This section is split into three sub-sections. Sub-section 8.2.1 responds to research question 2a, 'does accessible travel information assist older people in getting out and about?' and the data is drawn from the MAPPED project (Op. Cit.). Sub-section 8.2.2 informs research question 2b, 'would the provision of tailored handheld navigational devices support older people in getting out and about further and more often?' and the data is also derived from the MAPPED project (Op. Cit.). The third sub-section, 8.2.3, informs research question 2c, 'do older people substitute physical with virtual journeys, and if so, how do they feel about it?', and the data is obtained from the Getting Out and About project. The following sub-section provides an evaluation of the MAPPED project (Op. Cit.), which in turn is a demonstrable example of how information and communication technology can support later life travel-based mobility.

8.2.1 Tailored handheld navigational devices

In this sub-section, the findings of MAPPED project (Op. Cit.) are presented in order to highlight the potential of handheld navigational devices for supporting later life travel-based mobility. In a report by the Disabled Persons Transport Advisory Committee (DPTAC, 2002: 10) many of the participants felt that, if it was easier to get hold of information about public transportation services, then they would use them more often. Theoretically, the handheld navigational device is able to provide the user with a wealth of travel information at the touch of a button. However, as this sub-section explores, the participants encountered a number of issues whilst testing the devices, which limited the scope of the field trials. Some of these issues were avoidable given that the handheld devices and the software were in the development stage. The DPTAC (2002: 12) report also stated that many disabled people "believe that the people responsible for the planning and development of public transport and the pedestrian environment pay too little attention to their needs". This finding also came out of the MAPPED project (Op. Cit), as those testing the devices felt that they were not designed with their needs in mind (further detail discussed below). This was particularly interesting given that the scope of the project was to design a devise suitable for use by people with disabilities, and should be considered by similar projects and designers in the future. As discussed in the methodology chapter (section 5.3), the MAPPED project (Op. Cit.) involved various groups of people testing the tailored handheld navigational devices in everyday travel situations, so for example attending an appointment at the hospital or visiting the theatre.

The handheld navigational device was tested by various user groups including people with disabilities and older people. As the data for each group revealed very similar results, those presented within this thesis are from the sample of older people, as discussed in Chapter Five). The participants were asked to evaluate the handheld navigational devices in two stages, the first focused on the handheld device itself, and the second on the MAPPED software. The participants had many comments on both areas which are summarised in sub-sections 8.2.1.a and 8.2.1.b. As is highlighted in the sections below, there were several 'issues' with both the handheld device and the MAPPED software which did make it difficult for the participants to use. Therefore, this evaluation provides insights which are pivotal to the success of such devices in the future and must be considered by future designers in this field. Encouraged throughout the whole design process is the use of methods, such as focus groups, which facilitate discussion between user groups that enable designers to learn about the key issues and concerns of those who will be purchasing and using the end product, such as older people and people with disabilities. This section culminates with sub-section 8.2.1.c, which discusses how the tailored handheld navigational devices tested during the MAPPED project (Op. Cit.) are an example of information and communication technologies supporting later life travel-based mobility.

8.2.1.a The handheld device

The seven participants of the MAPPED project (Op. Cit.) had a variety of opinions about the handheld device, which are explored within this sub-section. Generally the participants thought that the handheld device was smaller than they would have liked. Five out of the seven participants thought the screen was too small, and six out of the seven participants thought the keypad was too small: "well the keys were a bit awkward to use really for people with fat fingers, they were too close together" (Male aged 70 years old). Four of the participants also felt that the lettering printed on the keys was too small:

Male aged 80:	The lettering on the keypad, the symbols are too small, actually the letters and figures are too small, the keypad is ridiculously small for the people it's designed for, and its not even clear, is it?
Interviewer:	Why is it not clear?
Male aged 80:	Because the bright reflection from the screen, it's difficult to see because of all the reflections. I don't think a lot of people could see this.
Interviewer:	How did you find using the handheld?

> *Male aged 80:*   *Because it is so small it is difficult to use…I mean I've got clumsy fingers now (laughs) you need dainty little fingers to use the keypad I think, its too small….and I think this screen is too reflective.*

The participants also highlighted the fact that during sunny weather it was difficult to see the screen, and three participants suggested a reflective screen would improve the handheld device. The participants were happy to use the stylus as a screen pointer, however, they did feel that it would be a good idea to connect it to the device somehow, so that it could be easily found if they dropped it: "The stylus is quite useful, but it has to be used very precisely, and the people who are going to use this are people who cant use it precisely, a lot of them, because they have got the judders. It would be good if it was connected to the handheld so you couldn't drop it" (Male aged 80). Three of the four female participants felt that the handheld device was slightly heavy and expressed concern about having to carry it around for long periods of time: "I did find it slightly heavy and carrying it tired me out a bit" (Female aged 67). None of the participants stated that they had felt unsafe whilst walking around with the handheld device in their hands during the trials. However, three of the participants did acknowledge that it could be a possible target for crime:

> *Interviewer:*   *And how did you feel walking around holding the handheld?*
>
> *Male aged 70:*   *Well I didn't have any problems, I felt safe but I could see how it could be easily grabbed out of your hand.*

The participants had several suggestions for improving the handheld device. This included, providing a carry case and a neck strap, instead of having to carry the device continuously. Making the handheld device waterproof was also recommended as an improvement by four of the participants. One participant suggested that, "there should be a grip on the hard casing, a bit of non-slip grip because we are talking about old people here and wearing gloves in the winter" (Female aged 67). Changing the design of the handheld device by making it wider and spreading the keys out, and "putting the keys on a slide out panel, so that you could have a bigger keyboard and also of course a bigger screen which would make it easier to use" (Female aged 73). When asked if they would pay for such a device if it was available in the future, two of the seven participants said no, the remaining five all said that it would depend on the cost but that they would be keen if they thought it was reasonable:

> Interviewer: So if such a device was available in the future would you pay to use it?
>
> Female aged 66:   Um, it depends how much I would have to pay (laughs) but I think it is a brilliant idea.

Interviewer:	Do you have an idea of how much you would like to pay?
Female aged 66:	Thinking of what you pay for a mobile phone, probably up to one hundred pounds.
Interviewer:	So you would prefer to pay for the device in a one off payment?
Female aged 66:	Yes.
Interviewer:	And what about updating things like the maps, would you be willing to pay extra for stuff like that?
Female aged 66:	There again it depends how much, and how much it would be worth, depends on the type of update, how useful that update would be to me.

8.2.1.b The MAPPED project software

This sub-section reviews what the participants thought about the MAPPED project (Op. Cit.) software. There were some problems in terms of the development of the software, which meant that a number of the functions included in the original design, could not be tested. In these cases the participants were asked to evaluate how useful such features would be in the future development of the software. There was a mixed reaction from the participants about whether they thought the MAPPED project (Op. Cit.) software was user friendly or not. Three of the seven participants thought that it was user friendly: "I think it was quite user friendly, you could go from one action to another easily" (Female aged 66 years old). Two participants thought that it was fairly difficult to navigate between the screens: "well it was fairly difficult coz you had to keep going back to certain stages to progress on" (Male aged 70 years old). One female participant suggested that she had a few problems getting the device to do what she wanted it to do because she isn't very good with technology generally: "well I wasn't very adept at using it because again I'm not so good with technology, I could see it sort of working ok, (laughs) but I couldn't always get it to do what I wanted" (Female aged 67 years old). And the remaining two participants felt that if they were given more opportunity to use the device they would pick it up fairly easily: "well I mean with a bit of help (laughter) it wasn't too hard. No I feel that if you used it several times you would be able to use it quite well" (Male aged 80 years old).

During the trials there was an issue over the strength of the GPS signal received by the handheld devices. In the locality in which they were tested, several of the roads had a low signal or no signal at all. This did impact the trials to an extent, although the participants

were very patient and once discovered these roads were avoided during the trials that followed: "The signal strength of the GPS was not adequate, no; it didn't receive in a lot of places; well in fact in most places we tried it which isn't very good really if you are trying to navigate a town" (Male aged 70 years old). All seven of the participants felt that the quality of the maps could be improved. They suggested that using brighter colours, rather than the pale shades present during the trials, and using colours which contrast, would improve the visual appearance of the maps by enhancing the definition. Three participants thought that it would be a good idea to have a number of these handheld devices available to borrow from public libraries: "I think it could be a very useful thing, quite how people would access them or whether you could maybe borrow them from a central point, say a library, and say leave a deposit which could be returned when you brought it back intact; I think it could be, especially if you are new to the area I think that could be very good" (Female aged 73 years old). One participant also suggested that the companies involved with developing this type of technology, and technology in general, could invest "some of their profits back into local or national schemes where the ordinary populace are involved in learning about technology, government has done it in the past like setting up computer cafes and things but they tend to withdraw the funds after a couple of years and it would be nice if industry could back it up" (Male aged 71 years old).

The participants thought that the Points of Interest function was "useful, if you go to an unfamiliar place you could have a look at that and see which ones you wanted to visit" (Male aged 70). They also felt that the journey planner was equally as useful when undertaking an unfamiliar journey or, if necessary, to check if there was an alternative route:

> *Interviewer:* *And do you think the journey planner would be something you would make use of as a regular bus user yourself?*
>
> *Female aged 67:* *Yes, I can see that it would be useful because as you're out and about you haven't always got your timetable or you don't know which other buses to catch.*

The participants thought that the accessibility information was extremely helpful, however two of the participants felt that they would not use this at this particular time in their lives, although they may need it in the future. One participant summarised this view: "the handheld would certainly be useful if you're in a wheelchair or with a friend that's in a wheelchair, you know to find out if there were steps on route, and also where you could park; I suppose another thing with wheelchairs you need to know about steep slopes as well, which this did tell us" (Male aged 80 years old). Other studies have found that older people undertake journeys that avoid "steep gradients, even on short distances to shops"
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(McKie, 1999: 535). These are avoided through the use of "taxis, buses, and family or neighbours' cars" (McKie, 1999: 535). Therefore, older people would find the accessibility information element of the MAPPED software useful. Overall, the participants were generally positive about the functions that were working on the prototype version tested during the field trials. Of the functions were not working on the prototype version tested during the field trials, the participants felt that "the audio output option would be extremely useful, it's particularly important for poorly sighted people who can't read road street names" (Male aged 80 years old). The participants also agreed that, "the user feedback option would be very good, its one very good way of keeping it updated" (Male aged 80 years old).

8.2.1.c The handheld device and MAPPED software: an example of how information and communication technology can support later life travel-based mobility

Despite the problems during the field trials and the limitations of the handheld navigational devices and the MAPPED project (Op. Cit.) software, the participants all expressed positive views over the future of the concept: "I think it could be a very useful thing, especially if you are new to the area I think that could be very good" (Female aged 73 years old). However, all of the participants did feel that the prototype tested during the field trials should have been better designed with disabled people and older people in mind: "I think the handheld is a brilliant concept, as long as it is researched better" (Female aged 66 years old). Since undertaking the field trials and writing this, a period of a little over a year, there have been a number of developments within this technological field. This was anticipated, as with most types of technology, ideas evolve and transform. The availability of information through mobile telephones has increased significantly during this time, and is particularly evident through examples such as the iPhone, which enables users to browse the internet and download applications that contain specific travel information. This naturally questions the need for a tailored handheld navigational device. It is not possible to say whether the provision of tailored handheld navigational devices would support older people in getting out and about further and more often, as that would depend on the individual. However, the tailored handheld navigational device tested during the MAPPED project (Op. Cit.) is an example of how information and communication technology can support travel-based mobility within later life, by providing up-to date travel and accessibility information.

8.2.2 Accessible travel information

This sub-section explores how accessible travel information can support later life travel-based mobility, by looking at the types of travel information that older people require, and how that information is accessible. The participants of the MAPPED project (Op. Cit.) discussed various ways in which they sourced travel information, including printed information, telephone services, the public library, the internet, and satellite navigational devices. This would vary depending on the mode of transport being used to undertake the travel-based mobility. For example, participants travelling by car would be more likely to use a printed map or a satellite navigational device, whereas those travelling by bus were more likely to use a telephone service or printed timetable information. All seven participants stated that they would never undertake an unfamiliar journey without planning it in some way. Planning an unfamiliar journey involved searching for travel information such as maps and timetables:

> *"Well it's planning, if we go on an unfamiliar journey, we get in the local area and we see that there is a bus going or a train going somewhere, ah pamphlets, the information bureau we normally go into there and pick up things. Its all planned anyway I mean we don't just go and stand at a bus stop and hope that something comes along, you've got to work it out, well, if you have got any sense you do anyway".*

> Male aged 71 years old

Another participant discussed the importance of travel information, and give the example of knowing the return times of public transport services so that they did not get stranded (Female aged 73 years old). Four of the seven participants stated that they were happy to plan their unfamiliar journeys using more traditional methods, such as printed maps and timetables, rather than newer methods such as a satellite navigational device.

> *Interviewer:* *Would you consider purchasing a sat. nav. yourself?*
>
> *Male aged 71:* *Not at this stage because I get enjoyment out of actually planning it with the old maps sort of thing and if it's a series of places we are going to go through I would write that down and then my wife does the navigation, but it's normally planned.*

However, one of these four participants was considering purchasing a satellite navigational device which he described would be a help in assisting him to continue driving:

Interviewer:	Why are you considering purchasing a sat nav.?
Male aged 80:	Not for getting around locally, or anything like that, but I feel that erm because of increasing age and increasing density of traffic you need a bit of extra help, even if you have got a good navigator reading a map, you have got to look down to read a map and you have got to look at lots of signs, they tend to get more confusing as you get older because you cant do the selection as fast as you used to be able to, so if you have got something like a sat nav. Saying get in the right hand lane (laughs) three times, you know as your approaching a junction or a roundabout it's an enormous help.

All seven of the participants felt that instant access to travel information through a mobile phone, or similar, was a fantastic idea even if they were not likely to use such a service themselves. One participant felt that travel information could be improved if a user-centred approach was applied:

Interviewer:	How do you think travel information could be improved and made more accessible to you?
Female aged 66:	Well they could think in a disabled person's way, they could put themselves in the place of a disabled person, or elderly person, and think how would we get from a to b, how would we find the easiest point for public conveniences and those sort of things. Some people feel this town is disabled friendly but if you had to go there with a wheelchair, which we have had to do occasionally, you will find that it's not completely disabled friendly, because they have not put themselves in a wheelchair and gone out to see how friendly it is.
Interviewer:	So real life testing of places…
Female aged 66:	That's right yes; if people put themselves in a wheelchair situation it would improve it.

One participant stated that travel information is available but that often getting hold of it is more complicated.

Interviewer:	Do you feel that there is adequate travel information available to you?
Female aged 66:	If you look for it, but you have got to look for it. You have got to sort of either go on the internet, or go to a travel shop to find leaflets, and you don't always get all the information you want.

Another participant suggested that it is not feasible for everyone to access timetable information via the internet. And that the Romance information service, which provides

real time information regarding the next bus to arrive at the bus stop, was reliable where and when working:

> *Interviewer:*   *What about the timetable information….?*
>
> *Female aged 73:*   *That's very poor. I know you can get it online, but that's not feasible for everybody. They have got this Romance thing, sometimes that seems to be working and sometimes not, that's quite good when it's working.*

Four participants felt that obtaining hardcopies of timetables and travel information was increasingly becoming more difficult: "Getting hold of the timetables that is sometimes a little more difficult…one problem is that sometimes they change and you don't realise this, because unless you have got a paper printed copy they don't put it at the stops" (Female aged 67 years old). Two participants felt that reinstating the centralised bus station in the city centre would help people who were unfamiliar with the city and would also mean that accessible travel information was available in one place: "I do manage but a bus station in the city centre would be useful, and I should think anybody else coming into the town would find it quite hard having to find all the different stops because there is no central place really" (Female aged 67 years old).

8.2.3 Virtual mobility: A way of enhancing independence and social inclusion in later life

This sub-section looks at the data from the Getting Out and About project to investigate the ways that information and communication technology can support mobility and independence in later life. The MAPPED project (Op. Cit.) focused on a specific type of information and communication technology and how it could support later life travel-based mobility. However, the Getting Out and About project explored, in broader terms, how information and communication technology can support mobility and independence in later life. The argument here is that through its facilitation of virtual mobility, or the substitution or supplementation of a physical with a virtual journey, information and communication can support later life travel-based mobility by provided older people with an alternative form of mobility. Virtual mobility provides older people with an alterative form of mobility that they can make use of as much or as little as they wish, and therefore, is a way of enhancing mobility and independence in later life, which can then lead to social inclusion. This potential is recognised in accordance with the limitations of virtual mobility and the barriers that restrict access and use of information and communication technology in later life, as will be discussed later in this chapter. This sub-section explains

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the ways that the participants of the Getting Out and About project substitute or supplement physical with virtual journeys and how they feel about doing so. The participants of the Getting Out and About project stated that they used the following ways to substitute or supplement physical with virtual journeys (most used to least used): landline telephone calls; mobile telephone calls; email; mobile telephone texting; online shopping; and Skype. The participants of the Getting Out and About project said that they did not use the following ways to substitute or supplement physical with virtual journeys: instant messaging; and social networking. The participants had differing opinions about virtual mobility, which also varied depending on the mode of technology in question. For instance, ten participants thought that online grocery shopping was a good idea, although they did not use it themselves; six participants had a negative reaction, believing it only to be of benefit to people who were immobile. As the quote below illustrates, three participants stated that they knew others who used such services and had thought about trying them in the future, and one revealed that he used such services every so often and that he liked the convenience of having heavy items delivered to his door, he continued to say that he would use such services more regularly if his wife allowed him to.

Interviewer:	*What do you think about shopping for your groceries online?*
Male aged 78:	*Well the answer is I just don't do it because I don't believe the payment over the internet is good news, especially when I can just go down the road myself. And anyway you can't see what they get for you, they will give you rubbish, I mean when you go to the supermarket I bet you don't pick the first banana that you get to, you look at them and pick one out, but the answer is that you would just go and do your own thing while you can. Now if I was in a state where I couldn't get out of the house that's a different matter, I might be forced into it, I wouldn't like it but I might be forced into it.*

The participants felt that substituting or supplementing physical with virtual journeys was useful in certain context, such as keeping in touch with friends and family abroad, to leave a message so as not to disturb someone, and if they were to became immobile. For example, as the quote below illustrates, twelve of the twenty participants of the Getting Out and About project felt that they would be more likely to make use of online services if they were to become immobile:

> *"If I am mobile then I have no need to use online (services) in the first place because I think the participation of going shopping is a physical thing which I wouldn't want to lose, but if I became totally immobile then yes I would do things online."*
>
> *Female aged 67 years old*

These twelve participants suggested that they would be more likely to use internet services, such as online grocery shopping and email, if they became permanently immobile. The participant's stated that during temporary spells of immobility they would be more likely to ask for help from family and friends rather than use an online service. The participants also felt that future generations who have grown up using information and communication technology would be more confident in using it and so they would benefit more from virtual methods of mobility. During these discussions the participants vocalised the interaction between the forms of mobility, this helping the University researcher to visualise how a number of factors may have an impact upon mobility in later life, as well as the relationships between them. The data therefore gave meaning to the different parts of the conceptual framework and these forms of mobility, as is discussed more detail in Chapter Nine (section 9.2.1).

8.3 The limitations of information and communication technology in supporting mobility and independence in later life

So far this chapter has focused on the positive aspects of how information and communication technology is used by older people, as well as how it can support travel-based mobility in later life. There are though, of course, negative connotations as well. Therefore, this section looks at the remainder of research question 2, 'in what ways can information and communication technologies support the travel-based mobility of older people, and what are the limitations?' highlighting the limitations of information and communication technology in supporting the travel-based mobility of older people. This section is split into two sub-sections. The first sub-section, 8.3.1, focuses broadly on the barriers to using information and communication technology that the participants stated they had experienced in later life. The following sub-section, 8.3.2, looks more specifically at the concept of virtual mobility; by exploring what the participants felt the obstacles were in terms of being able to substitute physical with virtual journeys in later life.

8.3.1   Barriers to using information and communication technology in later life

Within the literature review it was suggested that use of information and communication technology, such as computers, the internet, and mobile telephones, was increasing amongst older people within the UK (Shepherd and Bryson, 2007). Despite these increments however, there is still evidence that the digital divide is becoming an age divide (Steyaert and Gould, 2009). There are still barriers that inhibit some from being able to make use of information and communication technology, such barriers are not dependent on age and maybe applicable to other groups or individuals within society. However, the barriers that are discussed within this sub-section were identified by the older people taking part in this study and so here have pertinence for later life. The most frequent reason cited by the participants for not using information and communication technology was their lack of desire to do so: "I'm just not interested, I never have been you know" (Female, aged 75 years old). Another participant stated: "I have never bothered with it; I have never desired to use a computer" (Male, aged 77 years old). Three participants felt that the cost of information and communication technology was a barrier in their use.

> *"Yes the cost of a computer is an issue for me, I am only entitled to a small amount of pension and so I cannot afford to have a computer and run it, I have got other concerns that I spend my money on therefore I really feel that I could not afford to run a computer".*

> *Female, aged 67 years old*

The other barriers to using information and communication were linked directly to the individual. The participants cited both a lack in knowledge or skills, and a lack in confidence, as barriers to their using information and communication technology, particularly computers and the internet.

> *"I really don't understand computers, they are a complete mystery to me and I have got no reason to use one, and I'm not very brainy when it comes to it".*

> Female, aged 77 years old

8.3.2 The obstacles to substituting physical with virtual journeys in later life

During the interviews the participants of the Getting Out and About project were probed about how they felt about being virtually mobile. The ways that the sample of older people thought virtual mobility can support mobility and independence in later life have already been discussed within this chapter (sub-section 8.2.3). However, not all of the participants felt that virtual mobility could support the mobility and independence of all older people. This sub-section looks at what the participants felt the obstacles to substituting physical with virtual journeys in later life were.

8.3.2.a Inequality of access and use

Five of the participants felt that both access to, and use of, information and communication technology was unequal between older people, and so meant that whilst some could use virtual methods of mobility, it would be more difficult for others to be able to. These five participants all stated that the cost of information and communication technology was not affordable for all older people. One of the participants stated: "it's not possible for me to buy my own computer because of the cost, once I have paid my bills I have only got £23 a week to live on, so you know I'm limited" (Female aged 65 years old). In order for virtual mobility to provide a plausible way of substituting physical with virtual

journeys, then this technology would need to be readily available in every household. Public access through libraries and internet cafés could still allow people to supplement physical with virtual journeys. Rightly the participants identified that not everyone can afford information and communication technology in their own homes. However, this was not the only issue raised by the participants, it is evident from the data of the MAPPED project (Op. Cit.) that if information and communication technology is designed poorly then this can impact who will use it. As has been discussed in this chapter (section 8.2), the participants of the MAPPED project (Op. Cit.) described how things like the small keypad and screen impacted their use of the handheld device. The participants of the Getting Out and About project also felt that not all older people would possess the right skills to be able to make use of information and communication technology. One participant stated that: "If I had the right skills and a computer I might use it yeah" (Female aged 71years old). However, others described how they had already taken computer courses to learn the skills for them to be able to use information and communication technology, but that now they could not remember what they had previously learnt and so did not use such technology anymore.

8.3.2.b Lack of desire to use information and communication technology in later life

Four of the participants of the Getting Out and About project stated that they did not desire to use information and communication technology. There is a possibility that this lack of desire could decrease in the future, as this could be cohort specific. For Example, if younger cohorts grow up with an increasing amount of use of information and communication technology, they may be more likely to sustain such use during later life. However, it is unlikely that this will decrease as far as zero, and thus, potentially there will always be some who do not desire to use information and communication. In order for virtual journeys to become a valid substitute for physical journeys in later life, older people have to be willing to use information and communication technology. As the quote below illustrates this willingness to use information and communication technology is subject to change depending on the situation:

Interviewer: *Have you ever shopped for your groceries on the internet?*

Male aged 70:   *Yes, I only did it once, because it didn't work very well. I found it difficult to tell them when I wanted things delivered because of the slots....I probably didn't persevere with it enough, and I only did it once, and I found it difficult to find a delivery time slot, and there were a couple of things that I couldn't find. We talked about what would happen if I didn't have a car, well I would shop online, yes definitely for my groceries.*

8.3.2.c Preference for face to face communication

"The best way to communicate is the way we are doing now face-to-face, the next best way is to talk to somebody on the phone. I really don't enjoy texting".

Male aged 70 years old

As the quote above suggests, twelve of the participants stated that they prefer face to face communication over virtual communication. Two participants specifically talked about how 'impersonal' they felt a computer was, stating that they prefer to talk to someone over the telephone for advice or when making a booking.

Interviewer: *Would you ever consider using information and communication technology to communicate with your friends and family?*

Male aged 65:   *I have tried but it's not got the same magic in it, there's something about the computer as a system it's an impersonal thing, I don't seem to be able to express my feelings. When you write a letter you can express your feelings but with the computer you cannot do it.*

The participants discussed the usefulness of several forms of information and communication technology, including mobile telephones as the quote below highlights. Despite this discussion the participants felt that using such technology was not their preferred choice. The quote below also shows how one participant relies upon her landline telephone without realising:

"Ah no I hate mobile phones (both laugh), my son gave me one a tiny little thing and in the end I gave it to my granddaughter, I don't like that you know. They are handy if you are out and about and you want to phone someone or something happens and you can notify them but apart from that I can't be bothered with it. It's not that I'm old fashioned it's just I don't like that type of technology you know what I mean, I have got a landline phone, and I much prefer that. I prefer to hear my kids voices so I know that they are ok, I can tell by there voices what's going on".

Female aged 75 years old

8.3.2.d Could limit or stop physical journeys altogether

Another important issue which was raised by three of the participants of the Getting Out and About project was that, in encouraging older people to substitute physical with virtual journeys, it may lead to such physical journeys not being undertaken at all:

Interviewer:	Do you think that information and communication technology can support the travel-based mobility of older people?
Female aged 65:	Well this sort of thing I should think could make them lazy, and not to make the effort because it's easier and less stressful than to make the effort and go out. I think that is why lots of people like to go out because it is what they have done all of their life and they know if they stick indoors you are going to get more and more into that habit and you are going to get more into that rut. When you have actually become immobile then it will come into it's own for older people, but I think until such time as that happens if you can make the effort then you should most definitely get out.

This is not how this study perceives virtual mobility. In fact this is why the description of virtual mobility specifies 'supplementing or substituting physical with virtual journeys'. This way of thinking does not discourage older people from undertaking physical journeys, instead it demonstrates that there are a range of alternatives which can support older people to remain independent, for as long as possible into later life. The heterogeneity of later life means that there is no 'one size fits all' answer as to what extent virtual mobility can help any individual; this is ultimately dependent on their personal circumstances.

8.4 Summary

This chapter has described the findings from both phases of data collection in relation to the second research question, 'in what ways can information and communication technologies support the travel-based mobility of older people, and what are the limitations?' It has outlined the types of access to, and use of, information and communication technology that the participants of this study described, as well as their awareness and the motivations for using such technology. The chapter has explored the ways that information and communication technology can support travel-based mobility in later life, using the specific examples of tailored handheld navigational devices, accessibility information, and virtual mobility. It has also outlined the limitations of information and communication technology in supporting the travel-based mobility of older people, in terms of the barriers to using information and communication technology, and the obstacles to substituting physical with virtual journeys in later life. The following chapter discusses the findings, from this and the previous chapter, in relation to the existing literature and policy.

Chapter 9: Discussion of the findings

This chapter discusses the findings of the empirical data collection and the literature review, in relation to the specific research questions set out within this thesis. The chapter is structured according to the key themes that arose during the literature review and analysis of the empirical data collection, and therefore offers commentary on the findings presented within the two previous chapters (Seven and Eight). The narrative also focuses more broadly on whether the experiences and perspectives of this group of older people correspond with current academic literature, policy and thinking in this area. As is examined more closely in the sections below, the findings of this study reveal that there are parallels and discrepancies between, what was uncovered during the empirical data collection, and the current debates within existing literature and policy. This chapter is split into five sections. The first three draw together the findings from the literature review and the empirical data collection, in order to provide answers to the research questions. The first section, 9.1, corresponds to research question 1, focusing on understanding travel behaviour within later life. In this section, the significance of travel-based mobility within later life, as well as the factors that impact such mobility, are explored. The second section of the chapter, 9.2, also relates to research question 1, by presenting the conceptual framework for mobility in later life that has been further developed to take into account the findings of the empirical data. In the third section, 9.3, research question 2 is reviewed. Here the types of access and use older people make of information and communication technology are examined, as well as determining whether information and communication technology can support the travel-based mobility of older people. The differences between access to, and use of, information and communication technology in later life are explored. This section also examines the relevance of this research in the debate regarding the digital divide becoming another façade of social exclusion. The applicability of virtual mobility as a tool for social inclusion is also discussed. The fourth section, 9.4, explores the inter-relationships between the thematic topics and conceptual intersections, in the form of transportation and information and communication technology as facilitators of mobility, independence and social inclusion in later life. The fifth section, 9.5, reflects upon the chosen research strategy and the results that were produced, by reviewing the decision to undertake a qualitative interdisciplinary approach and surmising the interdisciplinary contribution to knowledge (as discussed further in the following chapter, section 10.1). It is here argued that the success of the application of a social science lens over the field of transportation studies is verified by the innovative and original contribution that the conceptual framework for mobility in later life makes. The final section, 9.6, provides a summary of the key issues presented within the chapter, highlighting the pertinent themes of this study.

9.1 Understanding the significance of being mobile and independent within later life

This section draws together the findings of the literature review and the empirical data to develop an understanding of travel behaviour in later life, in order to answer the first research question. In doing so, it also enables an exploration of mobility in later life, thus providing a deeper understanding of the concept within this context. This section is divided into five sub-sections. The first, 9.1.1, focuses on the impact of the localisation of transportation systems and services for older people. The second sub-section, 9.1.2, provides a brief overview of the key aspects of travel behaviour undertaken during later life, as discussed in the literature review and findings chapters. The third sub-section, 9.1.3, explores the heterogeneity of later life, and the notion that older people are a diverse group of individuals, and later life is a heterogeneous experience. Sub-section 9.1.4, looks at older people's notions of independence, and how the elements of choice and control impact upon travel-based mobility. The discussion in this part of the chapter focuses on the significance of travel-based mobility within later life, as well as the motivations and factors that impact such mobility. It is also connected to the development of the conceptual framework for mobility in later life which is presented in section 9.2. The fifth sub-section, 9.1.5, examines socially inclusive independence and the complexity of mobility in later life.

9.1.1 The localisation of transportation

The privatisation of public transportation systems, such as bus and train companies, has lead to transportation services being co-ordinated at a local level. The combination of the "local specificities" of transport provision (Grieco, 2009: 3), with the localisation of transportation services, denotes that interventions and innovations in one area may not be suitable in another area. For example, a scheme designed for a flat area may not be suitable in a mountainous area (Grieco, 2009: 3); similarly a system used in an urban region may not be transferable to a rural locality. Therefore, the possibilities for the nationalisation and internationalisation of successful transportation schemes are limited. This may limit the practical output of some types of transportation research, and therefore should be considered when undertaking transportation research. The localisation of transportation services is individualised further when considering the vast range and complexity of impairments in later life that warrant solutions to transport difficulties. For instance, the introduction of a bus pass for people aged 60 years old and over entitling them to free local and national bus travel at certain times of the day, in April 2008,

excludes those who are unable to make use of the bus service. This is an example of the need for localised, individualised solutions to transportation issues and difficulties, as the following paragraph explains.

There is no doubt of the positive outcomes that the previous government can boast of the introduction of free bus travel for people aged 60 years old and over and people with disabilities, in terms of ensuring, in principle, equal access to the bus service. However, when considering the introduction of the free bus pass from other perspectives, it has not led to equal access to the bus service. For example, one local council revealed that the implementation of this scheme resulted in unavoidable cuts in the frequency and routes offered by the local bus companies (Goulder, 2007: 2). Narrowing in further to look at the perspectives of individual people using this service highlights further inconsistencies. There is no social or economic benefit of the bus pass for those individuals who are unable to use the regular bus service due to, for example, poor health. Campaigns such as the Help the Aged campaign for Travel Tokens (Help the Aged, 2007b), which supports the nationalisation of travel tokens that can be used on community transport schemes such as dial-a-ride services. These travel tokens enable those not able to use the regular bus service to benefit from the free bus travel, highlight the fact that despite the best intentions of schemes such as the free bus pass, there is still has someway to go before equal access can be achieved. This thesis has drawn attention to a disparity between policymaking and real life experience. When thinking about the increasing numbers of older people as the process of population ageing advances, it is essential that policymakers and transport planners better understand the diverse and complex needs of older travellers. It is therefore argued that it is becoming increasingly necessary for policy makers and transport planners to, where possible, look at transportation issues and difficulties from a localised, individualised perspective, as well as considering the broader societal and economic aspects.

9.1.2 Travel behaviour in later life

The participants of both phases of data collection were asked questions about their travel behaviour, including their travel needs and expectations, in order to provide some general interpretations of this area. Most previous research has focused narrowly on travel needs (for example, Help the Aged, 1998; Social exclusion Unit 2006; and Su and Bell, 2009). Few studies have looked at both the travel needs and expectations of older people (with the exception of, Alsnih and Hensher, 2003; and DfT, 2001). As discussed in Chapter Seven (sub-section 7.1.5), the participants felt they needed reliable, accessible and

affordable transportation; whereas they expected clean, safe and quick transportation, with friendly and helpful staff. Given the differences in the participants' accounts of transportation needs and expectations, it is clear that future research should also focus on both of these concerns. The findings of the literature review and the empirical data show that there are both similarities and differences in the patterns of behaviour of older people when they are travelling. An example of a similarity is in the mode(s) of transportation that older people use, and the increased reliance on public transportation, such as buses as people age (also found in, Help the Aged, 2007a). There were differences in the average number and distance of journeys undertaken by the participants. This was dependent on the mode of transportation being used, so for example, car drivers tended to travel further and more often than bus users. The participants also described how they undertook fewer journeys, travelling shorter distances to familiar essential places, such as healthcare practitioners and the grocery store, as they had grown older (Social Exclusion Unit, 2006: 90).

Demonstrated in the findings of the empirical data were also differences in the participants' travel behaviour which were dependent on their personal circumstances. The examples given were linked to: individual health status; physical and mobility constraints; social networks; the household composition and the relationships within them; access to a car and driving cessation; access to safe, accessible, reliable and affordable public transportation services; accessible travel information; and even grocery shopping habits, as it was found that some people like to shop everyday and others once a week. The participants stressed the importance of being able to get out and about, stating that they value travel-based mobility as a part of their everyday lives. The ability to shop for their own groceries, or help friends and family members with day to day tasks was not only described as pleasurable, but was also cited as an important part of their sense of independence. Through asking older people about their motivations and the barriers that impact their travel-based mobility, this study presents a holistic overview of the key aspects of travel behaviour in later life. This not only provides valuable insights into the lives of older people today, but also highlights the importance of transportation, particularly public transportation systems and services for maintaining independence in later life. It is therefore imperative that the government utilise measures, such as the LTPs, "specifically address the needs of older people and in particular the most excluded" (Social Exclusion Unit, 2006: 89). This study also suggests that future research makes use of the 'voices' of older people in order that the needs of older people are brought to the fore of transportation research and policy debates. Reflected in the participant's explanations of their travel behaviour is the heterogeneity of later life, as considered below.

9.1.3 The heterogeneity of later life: the diverse experiences, attitudes and aspirations of older people

This thesis demonstrates that later life is not a homogeneous experience for all older people (Nelson and Dannefer, 1992). Like the rest of the life course, there may be similarities in some experiences, although often these experiences will differ from one person to another (Nelson and Dannefer, 1992). This section shows the diversity in the experiences, attitudes and aspirations of older people. Older people are a "heterogeneous group whose diverse needs ought to be taken into account in this regard" (Locher et al, 2005: 12). It is important to "understanding this diversity matters when deciding how to prioritise policies that might affect different groups of older people" (Becker and Boreham, 2009: 7). Within policy at local, national and international level, people from the age of 65 years old to end of life are often grouped together and described as 'older people' (for example, DfT, 2001; ONS, 2005; and Social Exclusion Unit, 2006). There are examples within some academic literature, in particular Gerontological literature, where divisions have been made between the 'younger old' or those aged 65 to 74 years old, and the 'older old' or those age 75 years and over (see, Grundy, 1991: 133). However, even these distinctions do not convey the variety of older people's attitudes, experiences and aspirations, reflected in the empirical data collected during this study. The most prominent example of this diversity was during the interview discussions which focused upon use and access of information and communication technology, throughout both phases of empirical data collection. The participants demonstrated a vast range of experiences from the 'technophobic' to 'silver surfers': some used information and communication technology regularly, whilst others were anxious at the thought, or simply did not feel the need to try. In order to deal effectively with the outcomes of processes like population ageing, it is here argued that policymakers, academics, transport planners, the media and the general population, must fully understand the potential impact of this heterogeneity of later life, as is discussed in more detail within Chapter Ten (section 10.2).

Where possible, it may help by avoiding grouping 'all' older people together, as is frequently the norm in many outputs, such as public policy documents, research findings, and media articles (for example see, HM Government, 2009). Although it is often not possible to distinguish the individual characteristics of all older people, more attention must be given to the different life experiences of older people. The empirical data shows that these differences can be cohort specific. For example, the participants discussed their use of information and communication technology in terms of specific tasks, such as searching for information on a specific topic, or emailing a friend or relative living abroad (also found by, Selwyn, 2004: 378). However, the participants did not give any examples

of using information and communication technology for entertainment purposes, such as watching clips on "you tube" and social networking, which differs to the descriptions given by younger cohorts (see, Selwyn, 2004: 378). Other divergence may not be age related. Physical impairments and driving cessation are more common, nevertheless are not exclusive, amongst the oldest old. The value of the life course approach is that it acknowledges these differences in life experiences. There is a need to consider that current cohorts of older people have life experiences that are very different to their peers within contemporary society (Arber and Evandrou, 1993: 10). The empirical data reflects these differences in life experiences. For example, the older old, who may have had less opportunity to use information and communication technology during their lives, than the younger old. Undoubtedly their experiences, attitudes and aspirations towards such technology will differ. The life course approach therefore takes into consideration the different life experiences of individuals, such as employment history, geographical locality, family and social networks, socio-economic and demographic characteristics (Arber and Evandrou, 1993: 10). The life course approach also acknowledges that experience is created through different historical forces when particular cohorts of people are located in a specific time period (Hareven and Adams, 1982: 2). This is particularly useful when focusing on a field that is continually changing, such as information and communication technology.

9.1.4 Independent individuals: Choice and control in later life

During the individual interviews, whilst discussing the participants use or non-use of information and communication technology, and in some cases the available modes of transportation, the importance of being able to make decisions about their own lives, was reflected by the participants. The participants shared similar values about choice, whether they chose to use information and communication technology or not. The participants talked about decisions in later life as either being a choice, or something that was a compulsory decision, often connected to their age or health status, such as driving cessation. These types of choices were closely linked to the sense of control that the participants felt they had over their own lives. Most of the participants described the choice to use, or not use, information and communication technology as a personal decision that they had made for themselves. This choice was not forced upon them, as was obvious in the way the participants communicated it as an empowering choice, which gave them control over this part of their lives. However, not all of the decisions made by the participants were discussed in this way. Other decisions were not conveyed as a choice; instead they were described as outside of the participant's control. Examples of these were driving cessation on account of poor health, and not being able to use a

computer due to poor eyesight. These choices were forced upon the individual through their own personal circumstances.

The different types of decisions and choices that older people undertake should be considered by policy in this area. For example, encouraging older people to remain living independently in their own homes for as long as possible, is an area of policy that is currently developing across a range of government departments (see, Barnes et al, 2004; ODI, 2006; and CLG, 2008a). As stated in the literature review, there are individual and societal benefits of this approach. Those for the individual are linked to their quality of life through maintaining a level of independence. Whilst the advantages for society are the possible reductions in the cost of state health and social care, especially institutional care such as nursing homes, which is especially important when thinking about the demographic changes of population ageing. The development of supporting policy areas, like the personalisation of services, individual budgets and direct payments, alongside assistive technology like smart homes and tele-care, are also a significant part of the success of this approach. If policy makers are targeting specific sub-groups of older people with a choice (i.e. to remain living independently in their own homes), and offering them specific ways of achieving this (i.e. through the use of assistive technology), then it is essential that the types of decisions and choices made by older people, and the ways in which they make them are understood. This sub-section has described the key aspects of travel behaviour in later life. The following sub-section examines socially inclusive independence and the complexity of mobility in later life.

9.1.5 Socially inclusive independence and the complexity of mobility in later life

Travel behaviour in later life is complicated by the varying needs, expectations and requirements of different people. The inter-relationships between the meanings that older people give to the concepts of social inclusion, independence and mobility in later life were discussed within the literature review (see, Chapter Three, section 3.4). Older people have their own interpretation of what mobility and independence means to them, and it is usually connected to their individual lifestyle circumstances. For example, an older person with access to a car may interpret mobility and independence differently than an older person without access to a car. These interpretations then impact notions of quality of life and well-being in later life. The term socially inclusive independence recognises these individual interpretations, by identifying the "role of family, friends, communities, social institutions and government provision in contributing to experiences of well-being and a sense of being valued and respected by others" (Plath, 2008: 1365).

However, it is not as easy to find a definition of mobility that takes these individual differences into account. Mobility may be "conceived as referring to the ability of the individual to gain access through movement to the facilities he or she desires" (Metz, 2003: 375). Although, this study argues that mobility is not simply about movement, but that in fact there are many factors that influence the concept and which warrant further exploration. The technological advances of the information age are changing how the concept of mobility is understood. This also means that interpretations of the theoretical underpinning of the concept of mobility are undergoing radical transformation. There is a need to "articulate the concept of mobility in a way to allow valid empirical measurement" (Metz, 2000: 150). This is increasingly important with the prospect of an ageing population, especially in understanding "how mobility enhances quality of life" in later life (Metz, 2003: 375).

Mobility has been defined as one of the core aspects of independence in later life (Audit Commission, 2004a: 7-8), and is associated with quality of life in later life (Metz, 2000: 149). Analysis of the Dutch National Travel Survey 1979–1994, shows the significance of mobility in later life increases when it determines whether one can live independently or not (Tacken, 1998: 380). From this perspective mobility is considered a physical action; it is about being able to visit friends and family, the local food shop, or the chemist. A number of reasons why levels of physical mobility may decrease as people age, including poor design of transportation systems and services, the affordability of travel, and the onset of physical or mental ill-health (Metz, 2003: 375). There is a gap in academic research and understanding of mobility in later life, which is important for further research to address, particularly as the demographic changes of the ageing population are visible (Metz, 2003: 375-384). However, mobility in later life is particularly complex to understand due to the vast range of possible situations and experiences that older people may undergo (Schlag et al, 1996). For example, older people are more likely than their younger counterparts to have a physical or mental disability or impairment which impacts their mobility (Schlag et al, 1996). Older people are increasingly likely to rely upon public rather than private modes of transport as they age (Help the Aged, 2007a). The principles of inclusive design advocate that better design is design for all, an example of this is buses with low flooring and accessibility ramps that are designed to assist those with mobility problems to get onto the vehicle, are also useful to people with pushchairs or large items of luggage. In a similar vein, this research argues that understanding socially inclusive independence and the complexity of mobility in later life is important in understanding the mobility of the general population. The next section focuses on how the conceptual framework for mobility in later life in later life has been developed to take into account the findings of the empirical data.

9.2 Conceptual framework for mobility in later life

This section builds upon the discussion in Chapter Three (section 3.6) around the development of the conceptual framework for mobility in later life. The conceptual framework presented in Figure 11 of this chapter, has advanced from the version that was based upon the findings of the literature review, as presented in Figure 4. This augmentation takes into account the results from the analysis of the empirical data collected for the Getting Out and About project. In order to test the conceptual framework and strengthen its underlying theoretical basis, the participants of the Getting Out and About project were asked questions that were designed to explore the factors that impact their travel-based mobility within later life (in line with research question 1b). Thus, the modified version of the conceptual framework is based upon the findings from the literature review and the empirical data from the Getting Out and About project. There are similarities between the two versions of the conceptual framework for mobility in later life, for example, the same design and titles of each of the layers of the rainbow have been utilised. However, as discussed in more detail below, the interviews with older people highlighted the fact that the remaining conceptual intersections of social inclusion and independence were missing from the conceptual framework. As the layers of the conceptual framework have been discussed in Chapter Three (sub-section 3.6.1), rather than repeat this, here the discussion moves forwards to consider how the empirical data gives meaning to the layers of the conceptual framework, as well as the literature and theory that were utilised as its basis. This section is divided into four sub-sections which determine the process in which the conceptual framework has been developed. In the first sub-section, 9.2.1, the discussion explores how the qualitative empirical data collected during the Getting Out and About project gives meaning to literature and theory that form the basis of the conceptual framework for mobility in later life. The second sub-section, 9.2.2, explains the adaptation of the forms of mobility from a box to an arrow shape, as well as the addition of the three boxes: the first worded 'outcomes e.g. grocery shopping, volunteering'; the second 'independence/ interdependence/ dependence'; and the third 'leading to social inclusion/ exclusion'. The third sub-section, 9.2.3, clarifies how the conceptual framework for mobility in later life equates with the participants experiences, by highlighting how it fits with two of the participants experiences drawn from the data. The final sub-section, 9.2.4, evaluates the conceptual framework by setting out the limitations and future application in relation to the policy, practice and academic environment and work around mobility in later life.

Figure 11: The conceptual framework for mobility in later life based upon the findings from the literature review and the empirical data from the Getting Out and About project.
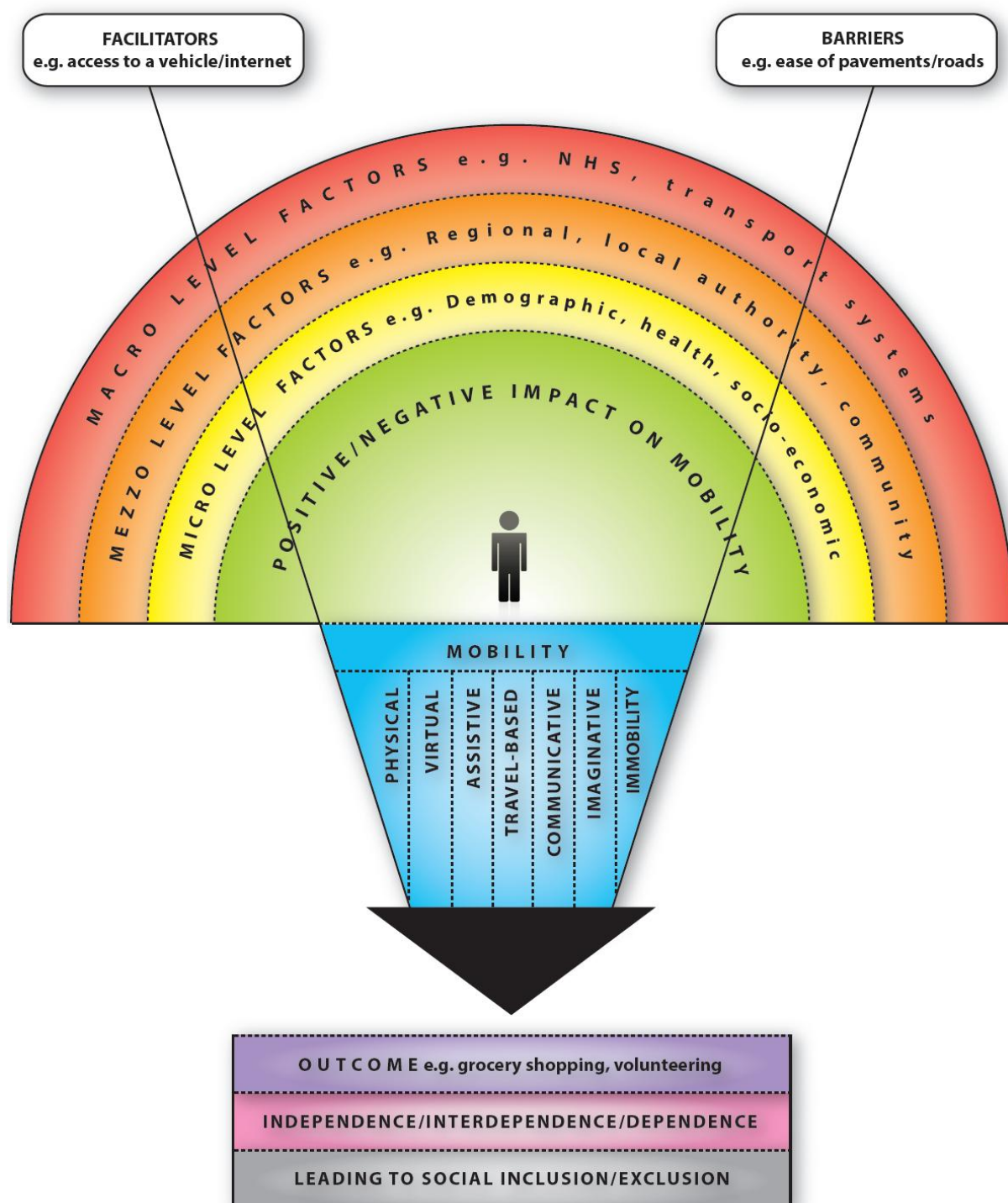
9.2.1 The development of the conceptual framework with the empirical data - qualitative data giving meaning to literature and theory

Throughout this research the development of the conceptual framework followed an iterative trajectory, which meant that it was possible to test whether the issues highlighted within the existing literature were relevant to the participants during the data collection. The first version of the conceptual framework for mobility in later life outlined in Chapter Three (Figure 4) presents the findings of the literature review. In this chapter, the second and final version of the conceptual framework for mobility in later life, as shown in Figure 11, was developed to take into account the findings of the empirical data collection, alongside the findings of the literature review. This 'holistic' view therefore presents the existing interpretations of mobility alongside the factors that older people themselves have identified as impacting upon their mobility in later life; thereby, grounding the conceptual framework in the participant's experiences of mobility in later life. The grounded theory approach to the collection and analysis of the empirical data meant that the researcher had an opportunity to "replicate, extend or refute" (Joffe and Yardley, 2004: 57) the findings from the literature review. Where necessary they were then able to revise the conceptual framework. Similarly to the literature review, the data analysis also highlighted a range of factors that impact mobility in later life, from the micro through to the mezzo and macro level. The analysis of the data revealed the extent to which the participants may, or may not, have 'control' over some of these factors. For example, one of the participants explained how a health issue, such as asthma, at times limited their physical and travel-based mobility. It was only through the discussions with the participants that it became clear that this type of factor would have a continual impact on their mobility; however, the precise impact may vary from day to day. Some of the participants stated that they had good days, where they were able to get up and get out the house, and bad days where they struggled to get out of bed and might not leave the house. The participants also mentioned a number of factors that they had some level of 'control' over, for example, the day of the week or time of day that they went to the supermarket. However, whether the participant's had control or not over these factors, it was the interaction between these factors that proved to have the largest influence over their mobility. For example, a participant described how she wanted to visit a friend across town on a Sunday. She felt physically well enough to make the journey, although when she arrived at the bus stop she found that the bus service to her friend's house did not run on a Sunday, she was not able to afford the financial cost of a taxi and was therefore unable to make the journey. In order to convey the complexity and diversity of the interaction between the factors that impact mobility in later life, the conceptual framework utilises the rainbow design with arrows and dotted lines, as discussed in Chapter Three (sub-section3.6.1).

9.2.2 The adaptation of the forms of mobility box and the introduction of an additional layer on the conceptual framework

Throughout the data collection and analysis of the Getting Out and About project, it became apparent to the University researcher that the first version of the conceptual framework (presented in Figure 4) did not connect to the remaining conceptual intersections of independence and social inclusion. This was evident when the participants made several references to the links between mobility and independence in later life (as discussed in Chapter Seven). There were also associations between a lack of mobility and the feeling of isolation and exclusion, which were very visible when the participants discussed a reduction in their mobility due to health problems or driving cessation. This clarified the relationship between the conceptual intersections, as depicted on the conceptual framework for mobility in later life shown in this chapter (Figure 11). An 'outcome' layer was then added to the conceptual framework, an example being grocery shopping and volunteering. Underneath this layer two further layers 'independence/ interdependence/ dependence' and 'leading to social inclusion/ exclusion' were also added. This separates the outcomes from the consequences, which then lead to social inclusion/ exclusion. The three boxes and their separation by dotted lines, signifies the interaction between them and the fact that there may be a time delay in this process. The conceptual framework therefore depicts mobility as a means to an outcome, such as grocery shopping or volunteering. This then impacts notions of independence/ interdependence/ dependence and leads to social inclusion/ exclusion in later life. For example, the participants described how immobility can often lead to dependence and would therefore lead to social exclusion, whereas virtual mobility has the potential to initiate independence and lead to social inclusion. It was also felt appropriate to change the presentation of the forms of mobility from a box to an arrow shape; this decision was for aesthetic reasons. The following sub-section looks at how the conceptual framework fits with examples from the data of the Getting Out and About project.

9.2.3 How the conceptual framework for mobility in later life can be applied in practice

In this sub-section, to determine how the conceptual framework for mobility in later life can be applied in practice, it is compared with the experiences of two of the participants from the Getting Out and About project. This is particularly important given that it was the stories of the participants themselves that gave meaning to the findings from the literature review, and allowed the University researcher to test and augment the first version of the

conceptual framework. The demographic characteristics of each of the example participants are set out in Box 3 and 4 below.

Box 3: Example One

<u>Example One</u>

Female aged 65 years old
Retired
Divorced
Educated to G.C.S.E level
White British
Lives alone
Rents a flat
Partially sighted and has a chronic illness (asthma)
In receipt of state pension
Self-reported level of activity – not active
Self-reported level of general health – don't know

In Example One, a retired female aged 65 years old, discussed how she felt that the introduction of free national bus travel, for people with disabilities and people aged 60 years and over, by the previous government has had a negative impact upon her mobility. This was due to the changes to the bus route in her local area, which meant that she now has to catch two buses rather than one to get into town. Combined with the onset of chronic asthma, this led her to the decision to purchase a car that she uses a couple of times each week to fetch grocery shopping and visit friends. She lives on her own and is in receipt of a state pension. Often she struggles to pay her bills, but she saved the money to be able to purchase a car by cutting down on her weekly grocery bills. The financial cost of fuel and parking limit the number of car journeys that she is able to make each week. Her poor health means that she has "good days" where she was able to get out of the house and "bad days" where she struggles to get out of bed and does not leave the house. Her car, telephone and computer are her "lifeline": with the car she is able to get to the grocery store when she is physically well enough, which supports her travel-based mobility; and her telephone, computer and the internet provide her with a way to talk to her daughter and granddaughter who live about two hours drive away fro her, facilitating virtual and communicative mobility when she is unable, or has no desire, to leave the house. This example shows how the factors that impact mobility in later life, as defined in the conceptual framework, interact to determine the type of mobility undertaken. It highlights the interaction between these factors, for example, when something is a barrier or it limits one form of mobility (i.e. poor health and travel-based mobility), there are also

other factors that can act as facilitators, and can support other forms of mobility (i.e. telephone and computer, and virtual and communicative mobility). By placing immobility as an outcome on the conceptual framework, it also demonstrates that on occasion an older person may experience barriers and therefore, may be temporarily or permanently immobile.

Box 4: Example Two

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<u>Example Two</u>

Female aged 67 years old
Retired
Married
Educated to Degree level
In receipt of state pension
Mixed heritage: White and Asian
Lives with spouse/partner
Owns own house
Mobility problems linked to multiple sclerosis
Careers are family members
Self-reported level of activity – fairly active
Self-reported level of general health – fairly good

</div>

Example Two is a retired female aged 67 years old, who noted how the recent introduction of free national bus travel, and her husband, have a positive impact upon her mobility; whilst her health has a negative impact. The introduction of free national bus travel means that she is able to visit her daughter, who lives in a nearby city, more frequently. Her husband's poor health means that she undertakes the grocery shopping for both of them, and his preference for fresh food means that she goes shopping almost everyday of the week. She commented on how her husband's needs increased the instances that she goes out, revealing that if he was not there then she would go out less. However, on occasions, her own health problems limit her level of mobility, and when she is unable to get out of bed she telephones her son, who lives nearby, and he comes round to take care for her and her husband. She also stated that her membership of clubs and societies gives her a reason to leave the house, on a regular basis. She is not a computer user and has not used the internet before, however, she stated that she regularly uses her landline telephone to communicate with friends and family. This example also shows the range of factors that impact on mobility in later life, as well as the way that they interact with one another. It also demonstrates more clearly the role of social and community networks and living arrangements in impacting mobility in later life. The next sub-section explores the application, value and limitations of the final version of the conceptual framework.

9.2.4 The application, value and limitations of the conceptual framework for mobility in later life

The fact that the conceptual framework for mobility in later life is grounded in both the findings of the existing literature, and the empirical data collected during this study strengthens the underlying arguments. It should be noted though, that there are limitations in any one research project, such as the amount of data that can be collected and the types of questions that can be asked. Therefore, the limitations of the chosen approach to developing the conceptual framework are discussed here. The conceptual framework presented within this thesis is embedded in the specific culture of the Southern English geographical locality in which the research was carried out. For example, perceptions and attitudes towards older people remaining independent and living in their own homes may differ in other geographical areas. As the sample was limited to a small number from this geographical locality in Southern England, it is recommended that further research is undertaken, in order to take forward the ideas and thinking presented here (as outlined in further detail in the conclusion chapter, section 10.3). To test and reinforce the conceptual framework for mobility in later life offered within this thesis, further research that looks at the views of different groups of older people, including: those who have restricted mobility, those who reside in institutional care homes, and those who are becoming less mobile is recommended. It is also suggested that further research which explores the experiences of other groups of people, such as people with disabilities and children and young people, could be conducted in order to strengthen the arguments and application of the conceptual framework. As this study primarily draws upon literature, policy and empirical data with a specific focus on older people and their experiences during later life, the application and value of the conceptual framework presented in this thesis is in relation to work with older people. However, this does not mean that the conceptual framework is not applicable to other age groups throughout the life course. As there may be additional factors that impact upon the mobility of other age groups throughout the life course which this study has not taken into account. For example, such factors include the role of school and physical education classes, in influencing the mobility of children and young people; as well as the role of work and training in influencing the mobility of individuals between the ages of 16 and 65 years old. Whilst there are no limitations on how or where the conceptual framework may be used in the future, it is felt that there are three specific target audiences that would find it a useful tool. The following three sub-sections will explain how.

9.2.5.a Health and Social Care Assessment toolkit

Health and Social Care Assessments are conducted by Health and Social Care Practitioners such as Social Workers, Nurses, Care Manager, Occupational Therapists, and Rehabilitation Staff. Also known as 'assessments of need', they provide an opportunity to discuss an individuals health and social care needs, as well as producing an individual care plan with information on the support and services that are available to them, for example, home help, healthcare, assistive technology or residential care. As part of this assessment, Practitioners in adult's services across England can utilise the Common Assessment Framework for adults, which is a standardised approach to conducting a holistic assessment of adults needs. The conceptual framework for mobility in later life could become part of the Practitioners Health and Social Care Assessment toolkit if it was included in the Common Assessment Framework. It could help Practitioners who are undertaking an assessment of need, by determining the level of mobility/immobility of the older person, as well as the factors that influence mobility in later life, including the levels at which these factors operate and the interaction between them. The conceptual framework will also give Practitioners a clear indication of the facilitators and/or barriers to mobility in later life, as well as the various forms of mobility that older people can make use of. This would help Practitioners to show older people that there are a range of alternatives to physical mobility, and to define the appropriate support and/or services available to the older person.

9.2.5.b Guidance for voluntary groups, older people and others

The conceptual framework for mobility in later life can be made into a guidance document that national voluntary groups and others (such as, Age UK, University of the Third Age, Pensioner Groups and Day Centres) can disseminate and use with older people. Used in this way the conceptual framework will enable older people to distinguish the range of factors that impact upon their mobility, including the facilitators and/or barriers, for example why they are not able to get a dial-a-ride bus to the supermarket. It will also mean that older people will have the ability to visualise the different forms of mobility, enabling them to see that they may have choices about their mobility that allow them to retain their independence, such as the use of virtual mobility and online grocery shopping services, if they so wish.

9.2.5.c The academic, policy and planning environment

Alongside the person-centred application and value described above, the conceptual framework for mobility has a theoretical output for use in the academic, policy and planning environment. In the academic environment the conceptual framework will feed into the emerging 'mobilities' paradigm, providing an example of the range of factors that impact upon mobility in later life, as well as highlighting the various types of mobility that are evolving within contemporary Western society. Building upon Urry's (2007) five conceptions of mobility, this conceptual framework highlights seven forms of mobility that are pertinent in later life. It is hoped that this will contribute to academic debate around mobility, and that further research with other groups of people, such as children and young people, will test this supposition (as discussed in Chapter Ten, section 10.3). It has been suggested that, in order for the concept of mobility to advance, there needs to be a clear understanding of what it means, which will "allow valid empirical measurement that captures the key elements of this common human experience" (Metz, 2000: 150). However, this conceptual framework identifies a wide range of factors that impact upon mobility in later life, as well as the interactions between them. Therefore, this study argues, in contrast to Metz (2000: 150), that undertaking quantitative analysis of the concept of mobility would be challenging from a methodological viewpoint, due to the diversity of the underlying individual influences on mobility in later life. The conceptual framework is also a useful tool for policy makers and planners who would benefit from being able to consider the range of factors that impact on mobility in later life, as well as the interaction between these factors. It would highlight different forms of mobility to policy makers and planners, which would enable them to think about the choice(s) that older people may or may not have regarding their mobility in later life. Furthermore, it demonstrates to both policy makers and planners how their own work, and the decisions that they make throughout the course of their work, can have an impact upon older people, and mobility in later life. For example, it may help transportation planners to visualise the importance of accessible modes of transportation and regular public transportation services for older people wishing to retain their independence. In the academic, policy and planning environment the conceptual framework can assist individuals and groups who are wishing to obtain a greater understanding of the factors that impact mobility in later life, and the interaction between the factors that impact mobility in later life. It is a useful visual aid that will help to develop this understanding, and ultimately promote discussion and debate in this area.

9.3 Virtual mobility: A tool for social inclusion in later life

This section brings the findings of the second research question together, examining the applicability of virtual mobility as a tool for social inclusion within later life. It is here argued that information and communication technology can potentially expand the trajectories to mobility and enhance independence in later life, whilst maintaining the principles of individual choice and control. Therefore, virtual mobility, as a substitute or supplement of travel-based mobility, has particular benefits for individuals who may be less mobile, such as older people and people with disabilities. There are three sub-sections to this part of the chapter. The first sub-section, 9.3.1, focuses on understanding the difference between 'access to' and 'use of' information and communication technology in later life. The second sub-section, 9.3.2, gives some examples of the ways that information and communication technology can support the travel-based mobility of older people. The third sub-section, 9.3.3, explores whether information and communication technology is enhancing existing social divisions by focusing on the debate about the digital divide becoming a façade of social exclusion.

9.3.1 Understanding older people's access to, and use of, information and communication technology

People aged 65 years old and over are the group of people least likely to have access to, and use information and communication technology, within their own homes (Haezewindt and Christian, 2004). The patterns of access and use of information and communication technology undertaken by the participants showed differences between, having 'access to', and 'use of', information and communication technology. One was not necessarily correlated with the other, for example an older person may have access to a computer and the internet at their home, although but not have the skills to be able to make use of it. On the other hand, an older person may have the skills to use a computer and the internet, but not have access to one at home. This mirrors the distinction between 'individual' exclusion from services where a service is unaffordable, and 'collective' exclusion where the service is unavailable or unsuitable (Gordon et al, 2000: 56). For example, an older person who may have access to a computer and the internet at their home, although not have the skills to be able to make use of it, would be experiencing 'collective' exclusion from services, while an older person who may have the skills to use a computer and the internet, but not have access to one at home, would be experiencing 'individual' exclusion from services. Thus, alongside explorations of the digital divide, this study argues that it is important to consider the type(s) of exclusion from information and communication technologies that older person are experiencing.

The findings of the empirical data demonstrate that the majority of the participants are either choosing to use information and communication technology or not. For example, a female respondent aged 67 years old said: "no I think it's great (the internet) (*laughs*) I wish it was around a long time ago, we use it a lot"; and a male respondent aged 77 years said: "I have never bothered with it; I have never desired to use a computer". The reasons the participants of the Getting Out and About project gave for not using information and communication technology were: that they used to use a computer and the internet although they no longer did so because they had lost interest and did not need to use it for any reason; that they had never had the opportunity but would like to in the future; that it was too expensive; that poor health (for example bad eyesight) had stopped them; and that they did not use a computer and the internet because they had no interest in doing so. The reasons for making use of information and communication technology given by the participants within both phases of the data collection included: keeping in touch with family and friends, particularly those living at a distance; a fascination for technology; a source for information; and receiving such technology as a gift and not wanting to offend the person who gave it by not using it. These findings were similar to other published research in this area (Selwyn, 2003; 2004).

In particular, the participant's dialogue around their use, or non-use, of information and communication technologies corresponded with Selwyn's (2003: 108; 111) discussion over the 'relevance' of information and communication technology in individual lives. The findings reflected this agency, in that the participants who used information and communication technologies discussed the 'purposes' of that use. In all cases the participants suggested that their motivations for using information and communication technology were directly linked to a personal need, for example the need to maintain contact with family abroad. Selwyn (2003: 111) also commented on the structural circumstances that prevent people from using information and communication technologies, such as "social and economic forces" that an individual is unable to change. This was less obvious in the data from the Getting Out and About project, although an example was that for many of the 'younger old' participants it was their use of technology during their working lives that had sparked an interest which they had pursued during their retirement. During both phases of data collection, the participants cited very few examples of 'surfing the internet' for enjoyment and entertainment. Instead they stated that they used the internet to find out information on a specific topic or question, or to complete a task such as send an email or book a holiday. This usage may not be typical of all older people that use information and communication technologies, however, it is important to note that this type of usage is different from younger generations or "net generations" (Bennett et al, 2008: 775). These younger generations have been "immersed in technology all their lives", and use the internet more widely for entertainment through, for

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example, social networking sites, chat rooms, and online gaming sites, as well as the internet as a source of information (Bennett et al, 2008: 775). Although these cohort differences are certainly interesting, they are outside of the reach of this study.

9.3.1.a Do older people substitute physical with virtual journeys and how do they feel about substituting physical with virtual journeys?

The results of the Getting Out and About project show the ways that older people substitute physical with virtual journeys, and their feelings on this topic. The participants of this study made use of the following methods to substitute physical with virtual journeys (starting with the most used to the least used): landline telephone; mobile telephone conversations; email; mobile telephone texting; online shopping; and Skype. None of this sample made use of instant messaging services, such as msn or social networking sites. Although this is not necessarily the case for older people in general, who have been cited as making increasing use of this type of technology (see, Gammell, 2009: 1). Looking at the sample as a whole, there was a mixture of attitudes towards the idea of substituting or supplementing physical with virtual journeys. It was clear that individual attitudes were often linked to their previous experiences with information and communication technology, and those who have had the opportunity to use information and communication technology were more likely to express positive feelings towards virtual mobility. For example, the participants who had used a typewriter or a computer in their current employment, or before retirement, were more likely to own their own computer and have internet access in their own homes. Those who had not used information and communication technology before retiring, were more probable to state that they had no desire to use information and communication technology in later life. These were also likely to be the participants who stated that they owned a mobile telephone, although rarely used it, as it was often left at home for an "emergency situation". Further quantitative research could explore whether there is a link between these attitudes and the socio-economic and demographic characteristics of individuals, such as social class and gender.

9.3.2 Autonomous ageing: The ways that information and communication technologies can support mobility and independence within later life

Whether the participants of the Getting Out and About project made use of information and communication technology, or not, all of them felt that there were particular circumstances when information and communication technology could support mobility and independence. The participants felt that virtual mobility would be most useful in certain situations, such as keeping in touch with friends and family abroad, during spells of immobility, and as a non-intrusive method of communication that would enable them to leave a non-urgent message for others to retrieve at their leisure. The participants felt that information and communication technology can enhance later life patterns of travel-based mobility by providing older people with an alternative when they are unable, or do not wish to make a physical journey. Thus, there are certain contexts that virtual journeys can help older people to sustain independence in later life for as long as possible by assisting them to undertake the IADL (such as grocery shopping) that are essential for ADL (such as feeding oneself). This research has highlighted how information and communication technology can support mobility and independence in later life, through the examples of accessible travel information and services, handheld navigational devices, and virtual mobility (see, sub-sections: 8.2.1; 8.2.2; and 8.2.3). There are barriers, meaning that information and communication technology is not widely available to all older people, and thus, there are limitations of the impact of this type of support. However, this may change in the future, as the participants of the Getting Out and About project described the differences between cohorts. They felt that as future generations will have grown up using information and communication technology, they will find it a more natural and an 'easier' part of their everyday lives. The participants went on to describe how future generations would therefore benefit more than current cohorts of older people from using information and communication technology to support their travel-based mobility.

9.3.3 The need for appropriate digital inclusion strategies to prevent the digital divide becoming a façade of social exclusion

Current patterns of access and use of information and communication technology have contributed to the debate over whether the digital divide is becoming another, "façade of social exclusion" (De Haan and Rijken, 2002; Steyaert and Gould, 2009: 744). Research shows that those with a higher income, who are younger, more educated, and of Western ethnicity are more likely to have access to, and use, the internet (Steyaert and Gould 2009: 744). Although the number of people aged 65 years old and over that are using the internet is increasing steadily (Shepherd and Bryson, 2007), this age group does include

the lowest number of users. Older people are less likely to own a computer and have internet access within their home than any other age group (Harwood, 2007: 247-248). There is therefore a requirement for digital inclusion strategies that consider the diverse needs of older people. The need for training and educational programmes for older people to be able to learn how to use information and communication technology is recognised by the government (see, Cabinet Office, 2004: 38). However, some the participants of the Getting Out and About project discussed an inability to be able to access such training, as is explored further in the following chapter (sub-section 10.2.3). Individuals who are not able to access or use online public, private and voluntary sector services are more likely to become excluded as digital inclusion compounds other forms of social exclusion (Sinclair, 2009: 1). Delivering services through technology has the potential to save the government money; this could have a positive benefit if it is reinvested, in other areas, such as healthcare and education (Sinclair, 2009: 1). Although, providing services in both digital and non-digital formats will not reduce the cost of delivering these services (Sinclair, 2009: 1). In order to tackle the digital divide the government must make sure that individuals have the skills to be able to use information and communication technology, access is relatively low cost and straightforward, and individuals are motivated, or have the desire to use it (Sinclair, 2009: 1). Plus, there are also wider industry level concerns which exclude individuals from accessing and using information and communication technology, such as: poor usability and accessibility; and direct and indirect age discrimination (Sinclair, 2009: 1). Unless these issues are adequately addressed then the digital divide will remain a façade of social exclusion, rather than information and communication technology facilitating social inclusion.

9.4 The significance of transportation and information and communication technology in the inter-relationships between the conceptual intersections in later life

During the literature review the inter-relationships between the conceptual intersections of social inclusion, independence and mobility in later life were defined (see, Chapter Three, section 3.4). In short, these were connected by older people wanting to avoid dependence and social isolation. Being mobile and independent was therefore linked to quality of life and well-being in later life, whilst acknowledging the individual differences of older people. Furthermore, the literature review went as far as to outline connections between the thematic topics and the conceptual intersections (see, Chapter Three, section 3.5). Key in this discussion was the role of transportation and information and communication technology as a facilitator of mobility, independence and social inclusion in later life. Throughout the interviews the University researcher was able to further explore the significance of transportation and information and communication technology as a

facilitator of mobility, independence and social inclusion in later life. It became obvious that information and communication technology and/or transportation play a significant role in the participant's ability to be mobile and independent. Some of the participants described, for example, easy access to a car and no mobility related health problems; whilst others discussed how they had given up driving on account of poor health, which had resulted in more complex travel behaviour. These relationships with information and communication technology and/or transportation then seemed to have an impact upon the participant's quality of life and well-being, for instance: in the main, those that had difficultly getting out and about were unhappy, even tearful about their lifestyle; whilst those who had no difficulties were content and happy about their lifestyle. The inter-relationships between the thematic topics and the conceptual intersections can therefore be seen in the role of transportation and information and communication technology as a facilitator of mobility, independence and social inclusion in later life.

9.5 Interdisciplinarity: The value of a social science lens over the field of transportation studies

Interdisciplinarity is achieved by bringing together the distinct components from two or more disciplines (Nissani (1997). Disciplines provide a way of dividing knowledge and organising institutions within academia (Nissani, 1997: 201-213). One of the strengths of interdisciplinarity is that it offers "new ways of looking at traditional aspects of society" (Nissani, 1997: 201-213). This research therefore utilised an interdisciplinary approach to formulate an original connection between the thematic topics of transport, technology and older people. This interdisciplinary approach involved the juxtaposition of perspectives from the disciplines of: social work studies; gerontology; human geography; social policy; sociology; and transportation studies, utilising the concepts of social inclusion, independence and mobility as intersections. Ultimately, this research applied a social science lens over the field of transportation studies, which was achieved through the utilisation of a distinct theoretical, methodological, epistemological, and ontological approach, as outlined within Chapter Six. This section is split into two sub-sections. The first sub-section, 9.5.1, discusses the value of qualitative insights in a traditionally quantitative field, and the second sub-section, 9.5.2, explores the strengths and weaknesses of employing this particular interdisciplinary approach for moving forward the field of mobility in later life.

9.5.1 The value of qualitative insights in a quantitative world

The scope of the EPSRC FUTURES project was to look at "the role of new technologies in progressing towards more sustainable urban mobility" (EPSRC FUTURES project, Op. Cit.). The EPSRC FUTURES project (Op. Cit.) encompassed a number of projects from various disciplines, including transportation studies, engineering, environmental science and social science. Locating a single discipline that was able to connect the three key EPSRC FUTURES project (Op. Cit.) research topic areas of people, systems and vehicles, alongside the thematic areas of transportation, technology, and older people, was a challenge. The decision to embark upon an interdisciplinary approach within this particular research project was undertaken for several reasons. The lack of existing intersections between the thematic topics of transport, technology and older people, itself highlighted the need for an interdisciplinary approach. However, the paucity of qualitative empirical research within the field of transportation studies (Lanzendorf, 2003: 6) was also a justification. The limited use of qualitative methods within transportation studies means that there is a lack of valid, reliable, and replicable methodologies for the collection of qualitative data within this field. Therefore, it was considered necessary to use methods

from other disciplines that have a stronger qualitative tradition. The social sciences were therefore selected. Metz (2000: 150) states that traditional transportation research draws upon quantitative methodologies to map current patterns of travel behaviour which are then used to predict and plan for future use of transportation systems and services. However, the nature and scale of technological advances within the transport field mean that it is now essential for research to consider the surrounding "social, behavioural and motivational dimensions" (Lyons and Urry, 2006: 3). Amalgamating the philosophical, methodological, theoretical and epistemological ideas from the social science, with those from transportation studies, means that this research is able to look at such aspects. The shift towards multi-discipline and multi-method ways of working means that this research has the potential to enable the discovery of new ways of looking at traditional aspects of society (Nissani, 2001: 213), thus increasing the applicability of the research to several fields through interdisciplinary observations.

9.5.2 Interdisciplinarity as a means of pushing traditional research fields forward

The challenges and particular strengths and weaknesses associated with interdisciplinary research activity have been critically discussed within the academic arena for some time (Salter and Hearn, 1996: 154). The very nature of interdisciplinary research means that it can lack the depth of knowledge and understanding that research from traditional disciplines generates (Golde and Gallagher, 1999: 283). Such arguments consider interdisciplinary research to highlight a broader picture by focusing on the breadth of knowledge and understanding of several topics. However, in order to build up an adequate view of the various parts of society, the ability to shift from one perspective to another is an integral part of the sociological imagination (Wright Mills, 1959: 211-212). Although, the complexity of undertaking interdisciplinary research should not be underestimated, as making sense of a broad spectrum of topics and issues can be challenging (Nissani, 1997), both from the researchers' perspective and in terms of the outcomes of the research more generally. One of the most challenging aspects of undertaking interdisciplinary research is the perception and understanding of disciplinary terminologies and working norms (Bishop Hubbard, 2006: 267). As a result, this thesis contends that interdisciplinarity may prove more successful between disciplines that have similar terminologies and working norms, such as research that combines social science disciplines like social work, sociology, gerontology and social policy, and possibly applying this to one or two other disciplines, like this study has with transportation studies and human geography.

9.6 Summary

This chapter has explored the key themes that arose during the analysis of the empirical data collection, offering an in-depth analysis of the findings presented within the two previous chapters (Seven and Eight), in relation to the specific research questions set out at the beginning of this thesis (Chapter One). The chapter has shown that there are both similarities and differences between what was discovered through the empirical data collection, and the current debates within existing literature and policy. The importance of understanding mobility and independence in later life, as well as the heterogeneity of later life are significant findings from the empirical data collection. In this chapter the conceptual framework for mobility in later life has been redesigned to reflect the findings of the empirical data collection. The version presented in this chapter is the final version and as such includes the adaptation of the forms of mobility box, and the introduction of an additional layer on the conceptual framework. Here the limitations, application and value of the conceptual framework for mobility in later life were also defined. The chapter has also provides an overview of the inter-relationships between the thematic topics and the conceptual intersections, and the value of this interdisciplinary study in terms of pushing the traditional research field of transportation studies forward, through the use of qualitative methods, such as interviews and hypothetical vignettes. The next chapter is the final part of the thesis, and delineates the conclusions and recommendations of this study. It also outlines the limitations of this research, alongside the contribution that it makes to knowledge.

Chapter 10: Conclusions and recommendations

This is the final chapter of the thesis; it provides conclusions to the study, and recommendations for public policy and future research in this area. The chapter is divided into four sections. The first section, 10.1, provides broad conclusions to this research in relation to the aims and objectives set out within the introductory chapter (section 1.3). This section also outlines the value of this research to the social work discipline, and the relevance of the interdisciplinary approach utilised within this research, particularly to the fields of transportation studies, gerontology, sociology and human geography. In addition, this section highlights the contribution to knowledge and the limitations of this research. The second section of this chapter, 10.2, outlines a number of recommendations for policy that enhance mobility and independence, and therefore lead to social inclusion in later life. These recommendations focus specifically on encouraging older people to remain independent and on ways, in which, information and communication technology can support mobility and independence in later life. In the third section, 10.3, a number of further areas of research that could develop out of this study are outlined. This section explores methods and theoretical directions that could be explored as a result of the findings of this study. The final section of this chapter, 10.4, provides a summary of the key points of this chapter, and the concluding comments of the thesis.

10.1 Conclusions

This section of the chapter presents the conclusions of the thesis; it is split into five sub-sections. In the first, 10.1.1, broad conclusions to this research, in relation to the research aims and objectives, are brought together. Sub-section, 10.1.2, outlines the value of this research to the social work discipline, and the third, 10.1.3, the wider interdisciplinary relevance of this research. The fourth sub-section of this chapter, 10.1.4, surmises the original contribution to knowledge that this study provides. The fifth, 10.1.5, focuses on the limitations of this research, and how, upon reflection, they could have been managed in a different way.

10.1.1 Broad conclusions in accordance with the research aims and objectives

This sub-section provides broad conclusions to this research by reviewing whether the aims and objectives were achieved. This research examines whether current transportation and technological systems and services meet the needs of the increasingly ageing population. The overall aim of this research was to explore whether information and communication technology offers older people an alternative to physical mobility through its facilitation of other forms of mobility, such as virtual mobility, thus increasing independence in later life. The key challenge was to connect the thematic topics of transport, technology and older people. In order to achieve this, two distinct phases of empirical data collection were utilised. The first phase, the MAPPED project (Op. Cit.), demonstrated how accessible information and services, in the form of tailored handheld navigational devices, can potentially assist the mobility and independence of older people, by helping them to plan familiar and unfamiliar journeys. The second phase, the Getting Out and About project, showed how information and communication technology can support mobility and independence in later life through virtual methods of mobility. The three research aims were defined as follows:

1. To examine the literature that exists around travel behaviour and the use of information and communication technology in later life, and ascertain whether the 'voices' of older people are included in these types of research.

2. To explore the intersections between the thematic topics of transportation, technology and older people.

3. To consider the value of qualitative insights within the field of transportation studies.

The University researcher feels that the three research aims of this study were achieved. However, as this is an exploratory study, in order to support the arguments set out within this thesis, it is recommended that further research is undertaken in this area, as set out later in the chapter. The first research aim was to review the literature and policy around the thematic topics of transportation, technology and older people, in order to determine whether the 'voices' of older people are included in this type of research. This was accomplished in Chapter Two, which demonstrates the existing knowledge around the topics of travel behaviour and information and communication technology in later life. The findings demonstrate that there gaps in this knowledge, such as the lack of existing data that explores familiar and unfamiliar journeys, and although some studies listen to the 'voices of older people, there is room for further research that does so in the future. The second research aim was to explore the intersections between the thematic topics of

transportation, technology and older people. As has been explained within Chapter Three, this aim was achieved through exploring the conceptual intersections of social inclusion, independence and mobility. This trajectory, which recognises the individual differences of older people, and emphasises quality of life and well-being over dependence and social isolation in later life, is original and highlights a way forward for future research in this area. The third research aim was to consider the value of qualitative insights in the field of transportation studies, which has traditionally given precedence to quantitative methods and approaches. As an interdisciplinary study, this research reveals a wealth of knowledge around travel behaviour in later life. Although, it has also identified that the field of transportation studies traditionally relies upon a quantitative approach and research methodologies, therefore there is a need for research within the field to draw on the perspectives of older people by listening to their 'voices', through the use of qualitative methods. The third research aim was achieved through the use of an interdisciplinary approach and qualitative data collection methods that allowed the researcher to listen to the 'voices' of older people, as well as the discovery of new knowledge. Within the literature review the quantitative focus of current transportation modelling methods was criticised for providing insufficient understanding of what motivates people to undertake travel, thus limiting the impact of policy and planning around such behaviour (Jones, 2002: 4). Utilising qualitative methods alongside traditional quantitative methods, like modelling applications, will reinforce knowledge in this and other key transportation policy and planning areas (Jones, 2002: 9). Using existing data alongside the qualitative insights gained during the study, this research demonstrates that a mixture of qualitative and quantitative methods and approaches can provide valuable insights within a field, or across several fields. This is visible in the way that the results of the qualitative empirical data collected during this study have been developed alongside the existing knowledge, in order to build a conceptual framework around mobility in later life.

The two research objectives were also accomplished through the literature review and the qualitative empirical data collection. As envisaged in the introductory chapter, the nature of the material that was uncovered during the literature review and the data collection did determine how these were achieved. The two research objectives were to:

1. Examine the factors that impact travel-based mobility and the use of information and communication technology in later life, by undertaking a review of literature and policy, and through the 'voices' of older people obtained during primary qualitative empirical data collection.

2. Explore the possibility of developing a conceptual framework for mobility in later life, and the contribution this would make to social theory, practice and debate, such as the 'mobilities' paradigm.

The first research objective was to examine the factors that impact travel-based mobility, and the use of information and communication technology in later life. This was undertaken through a review of literature and policy in these areas, and via primary qualitative empirical data that enabled the 'voices' of older people to be heard. Examining the actual experiences of older people alongside the existing literature and policy means that this study presents a holistic overview of the facilitators and/or barriers that impact these aspects of later life (as discussed in Chapter Seven). This moves away from existing research that often takes a one sided view by specifying only the barriers. The second research objective was to explore the possibility of developing a conceptual framework for mobility in later life, in order to contribute to social theory, practice and the debate, such as the 'mobilities' paradigm. There are visible gaps in the academic interpretations of the theoretical understanding of the concept of mobility, as discussed in Chapter Three. By asking the participants of the Getting Out and About project questions around the factors that impact their mobility, this thesis not only demonstrates the value of qualitative methods and the 'voices' of older people in revealing new knowledge in this area, but also develops the theoretical and practice-based understanding of mobility. Disseminated appropriately, the conceptual framework for mobility in later life will contribute to the development of social theory and debate linked to the 'mobilities' perspective, alongside social work practice, policy and planning and generally in relation to work with older people. To date such a framework is missing within the existing literature. Naturally at this stage it could be deemed questionable how much this conceptual framework for mobility in later life will contribute towards social theory and debate, such as the 'mobilities' paradigm. However, as this is the first conceptual framework of its kind, it is intended to disseminate it in the form of conference papers, posters and journal articles in peer review journals. It is hoped that others will not only use it as conceptual framework, but that it will also generate further discussion in this area. The following part of this chapter looks at the value of this research to the field of social work.

10.1.2 The value of this research to the field of social work

The themes and issues explored within this research include: mobility, ageing and quality of life; mobility, technology and social inclusion; and the diversity of the life course. These themes and issues are of particular concern to the field of social work. Although this research may not be deemed as contributing to the traditional practice-base of the social work discipline, when considered in line with the characteristics determined by the Joint University Council and Social Work Education Committee (JUC-SWEC), as stated below, there is a visible role for this type of research in taking the social work discipline forward. JUC-SWEC outlined the 'distinctive characteristics' of social work research within the UK

Social Work Research Strategy in Higher Education 2006-2020 (JUC-SWEC, 2006: 3), which they specified as:

- The use of a broad range of research methods and an acceptance of different linkages between research methods and research questions
- Underpinning by the quest for both usefulness and theoretical contributions so that research is not characterised as only pure or applied
- A concern with social inclusion and social justice
- A focus on social change
- Work with stakeholders in different aspects of the research process and managing the complex power relationships involved

JUC-SWEC (2006: 3)

This study contributes through a definite concern with social inclusion, as well as the theoretical and practical output of the conceptual framework for mobility in later life. Social work research can "only ultimately make sense as research that is congruent with the professions' social mandate" (Lorenz, 2004). Social work research and the practice of social work are intertwined. Therefore, it is argued that the value of social work research lies not only in academic settings, but also in its relevance for social workers and service users. The value of this research for the social work discipline is in demonstrating the ways that information and communication technology can help service users, such as older people, and people with disabilities, to maintain their independence. Expanding the social work discipline with this kind of knowledge is not only of value to service users and social workers, but could also be a key element in the success of future health and social care policies and initiatives concerned with promoting social inclusion, well-being and independence later life. The individual and societal benefits of the inclusive potential of technology are discussed further in the policy recommendations section (10.2) below.

10.1.3 The wider interdisciplinary relevance of this research

The social work discipline also occupies a place that is responsive to changes within the wider social science community (Orme and Powell, 2007: 988). This means that, the outcomes of this research, including the findings of the empirical data and the conceptual framework for mobility in later life, are relevant to a number of social science disciplines, including sociology, gerontology, social policy, psychology, and media and communication studies. This thesis covers topics and issues that are linked to mobility in later life. These are pertinent to many disciplines, therefore the relevance and scope of this interdisciplinary research is vast. This study may also be significant to the wider fields of transportation studies and human geography, as discussed in sub-section 10.1.4 below.

Interdisciplinary research can be encouraged and developed in different ways, including forging links with short institutional visits, particularly at early career stages. Researchers from different disciplines need to learn from each other; their language, concepts, theories, literature, data and methods, in order to fully engage in trans-disciplinary research that transcends the boundaries of conventional disciplines (Salmons and Wilson, 2007: 1). Although important, engaging and training early career researchers across disciplinary fields will not, on its own, mean that the future of interdisciplinarity is successful. It is essential that established researchers dissect the disciplinary barriers and channels of thought, if interdisciplinary research is to be embraced in the wider academic community. Cross-disciplinary training that co-ordinates effort from two or more academic disciplines, and merges researchers from postgraduate level to professorial level would strengthen knowledge transfer partnerships (Salmons and Wilson, 2007: 1). As this thesis demonstrates through its original contribution to knowledge in the form of a conceptual framework for mobility in later life, the value of interdisciplinary research is that it can provide new insights within traditional areas that can be shared between disciplines.

10.1.4 The original contribution to knowledge

The application of a social science lens over the field of transportation studies is not in itself an original idea (for example see, Lyons and Urry, 2006; Pickup and Town, 1983). Similarly, scholars have emphasised the value of qualitative data and insights within the field of transportation studies (for example, Marsden et al, 2008; and Musselwhite and Haddad, 2008). The originality of this research lies in the choice of an interdisciplinary approach to explore the thematic topics of transportation, technology and older people, and the unique use of the concepts of social inclusion, independence and mobility as intersections between these topics. The exploration of the inter-relationships between the conceptual intersections of social inclusion, independence and mobility in later life (as outlined in Chapter Three, section 3.4; and picked up in Chapter Nine, section 9.4) is a valuable contribution to knowledge. Social inclusion in later life is connected to perceptions around mobility and independence; older people want to avoid being dependent and isolated, and associate being mobile and independent with quality of life and well-being in later life. However, older people's experiences of the period of later life vary significantly from one another, and this heterogeneity of later life further complicates mobility, independence and social inclusion in later life. The concepts of social inclusion, independence and mobility in later life are multi-faceted, and it is essential that policymakers, planners, academics, older people themselves, the media and the general population, both understand and value the intricate inter-relationships between them.

An original contribution to knowledge has developed through the conceptual framework for mobility in later life, which is the first of its kind to visually describe the factors that impact mobility in later life. The strength of the conceptual framework for mobility in later life is that it has evolved from both the findings of the existing literature and the empirical data collected during the Getting Out and About project. The sheer range of factors that impact mobility in later life, and the interaction between the layers of the conceptual framework, as noted within the literature review and the empirical data collection, is clear. The use of the rainbow shape, dotted lines and arrows to describe these layers and their interaction is therefore critical to its application. The resulting conceptual framework presented within this thesis provides a visual description of the factors that impact mobility in later life, which is applicable to a number of audiences in relation to work with older people, such as health and social care practitioners, voluntary organisations, academic, and policy and planning departments (as discussed in the previous chapter (sub-section 9.2.4). Within the fields of the social sciences, transportation studies and human geography there is increasing interest in the concept of mobility, and scholars are exploring it from a range of perspectives (as previously discussed within Chapter Three, section 3.3). However, as there is limited "interchange with the rest of the social sciences" when research into transportation and communication systems is undertaken (Urry, 2007: 19). This means that research into transportation and communication systems can lack the examination of the "complex social processes that underlie and orchestrate the uses of such transports" (Urry, 2007: 19). The 'mobilities' paradigm acknowledges that, "the social sciences are undergoing a paradigm shift in which it is becoming less about the social and more about the mobile" (Urry, 2007: 20). It transcends this divide by focusing on the interchange between transportation and society (Urry, 2007: 20). Thus, the aim for the interdisciplinary conceptual framework for mobility in later life is for it to undertake a trans-disciplinary trajectory, where it will "transcend the boundaries of the conventional disciplines" (Salmons and Wilson, 2007: 1) such as transportation studies, the social sciences and human geography, whilst strengthening the development of the 'mobilities' paradigm. Finally, the utilisation of hypothetical vignettes to explore older people's awareness of the functions of information and communication technology, irrespective of whether they were already users or not, was a novel approach not often seen within the field of transportation studies. The participants engagement with the hypothetical vignettes, and they therefore proved to be an effective data collection method, providing a number of interesting findings. Not only does this highlight the value of qualitative methods in transportation studies; it also demonstrates the significance of being able to use a range of methods, from various disciplines via an interdisciplinary approach.

10.1.5 The limitations of this research

This sub-section explores the limitations of the research. By exploring the limitations of this research and the rationale for further use, despite these criticisms, this sub-section strengthens the academic rigour of the research. Qualitative research is often based on small, unrepresentative samples of a particular population (Rubin and Babbie, 2009: 41). The exploratory nature of qualitative research means that it can raise more questions than it is able to answer, instead being able to "hint at the answers and give insights into the research methods that could provide definitive answers" (Rubin and Babbie, 2009: 41). In addition, this qualitative research was undertaken within the confines of a doctoral study, which meant that there were practical limitations over both the timeframe and the amount of financial resources that could be drawn on. This meant it was impossible for this single project to focus upon the multitude of issues that emerged along the way. It is therefore essential that the limitations of the research are acknowledged, in order to note how to improve its reliability, validity and replicability. Highlighting these limitations is also pivotal in discussing how to take this research forward. The interdisciplinary approach taken by this research not only forms part of the originality but, conversely, could also be argued to be bringing limitations to this research. Interdisciplinary research demonstrates the broader breadth of knowledge through an understanding of several topics or disciplines (Nissani, 1997). Some, therefore, may argue that this means the study may lack a precise focus. However, the University researcher argues that this is not the case. As the research explores the intersections between the thematic topics of transportation, technology and older people, and is even more worthwhile when considering that the trajectory chosen to connect them is not visible within existing literature. This is an exploratory piece of research that highlights how an interdisciplinary approach can provide new insights within traditional disciplines. The findings are initial observations that might satisfy the objectives purported by the research, although warrant further in-depth investigation in order to improve the academic rigour of the underlying arguments.

The increment of studies employing mixed method research strategies, has led to a rise in the number of articles that explore the usefulness of the sole use of qualitative or quantitative methods within a particular study (for example in Health Care research: Sale et al, 2002). The rationale for utilising a qualitative approach to the data collection and analysis is outlined in detail within the Chapter Five (sub-section 5.1.3). However, in this case, the iterative nature of qualitative methods was significant in the development and flow of the research, as surmised by Rubin and Babbie (2009: 36-37):

"*Social constructivist researchers are more likely to use qualitative methods and begin with a more flexible plan, one that values subjective processes and the need for the research processes to evolve as more observations are gathered, rather than being determined completely in advance*".

As one of the research aims was to consider the value of qualitative insights within the traditionally quantitative field of transportation studies, it may be suggested that a mixed method triangulated approach could also have achieved the same result. However, the research aims, objectives and questions required an in-depth exploration; one which is not obtainable from quantitative data (Rubin and Babbie, 2009: 36). Others may also be critical of the use of convenience and purposive samples, and the access routes used within this research to identify older people aged 65 years old and over. As explained within the methodology chapter, access to the participants was sought through Gatekeepers at local organisations, charities and clubs for older people aged 65 years old and over. Using such a method could raise questions, as it may be considered exclusionary in that it is targeting specific groups of older people, rather than older people more broadly. It is therefore suggested that further research studies other samples, such as people in different situations in later life like older people who are immobile, older people who live in rural localities, and older people who reside in institutional care; as well as people with disabilities, and younger people (discussed in more detail later in this chapter, section 10.3).

As the University researcher became involved in the MAPPED project (Op. Cit.) at a late stage of its development, this meant that, the University researcher was not involved in all of the key decisions, particularly as many of the methodological decisions had already been made. With the benefit of more time and, subsequently more involvement at the beginning of the project, it may have been possible to increase the rigour of the methods used. The chosen methods of questionnaire, travel diaries and individual interviews proved successful in that the data gained provided an accurate overview of the experiences of the participants during the field trials. However, at times the need to fill in a travel diary for every journey proved a little monotonous for the participants, and so perhaps the design might have been improved if the University researcher was involved at an earlier stage. With hindsight, the use of participatory visual methods (as discussed in, Packard, 2008) might have been useful and insightful here. It would have been interesting to see the outcomes of giving the participants cameras during the field trials, and then following up with the interview technique of photo elicitation, where the participant and researcher "examine the photographs together as a way of both explaining the images and generating information that would not have been captured without the photos as a

prompt" (Packard, 2008: 65). This is certainly a method that the University researcher would like to explore in the future.

An aim of the Getting Out and About project was to increase the range of difference between the demographic and socio-economic status of the participants. Although this was achieved in comparison to the scope of the participants of the MAPPED project (Op. Cit.), who had very similar demographic and socio-economic backgrounds, there is room for future research to take this further. It may be insightful to explore the mobility patterns of males against females, the younger old versus the older old, and those living in rural as opposed to urban localities. If conducting the Getting Out and About project again, it might have been beneficial to have asked some of the interview questions in a quantitative method, to a larger population first. Thus, the interview questions could then have focused in on the issues that warranted specific qualitative probing. The decision to change the data collection instrument used during the Getting Out and About project, from focus groups to individual interviews, was a good decision; however it might have been useful to use both individual interviews and focus groups during this stage. The interaction of the focus group method may have highlighted other factors that impact mobility in later life that were not visible in the interviews. The conceptual framework for mobility in later life is not in itself considered a limitation of this research. However, it is important to note that the conceptual framework for mobility in later life is a culmination of the findings of this research, which is limited by its focus on later life; therefore future research may take it in a new direction. It is hoped that other researchers will drawn upon and explore the ideas set out in the conceptual framework for mobility in later life, which will feed into its theoretical and practical development.

10.2 Policy recommendations

In this section policy recommendations are made in relation to how information and communication technology can support later life travel-based mobility. This section is split into four sub-sections. The first sub-section, 10.2.1, encourages policy makers to listen to the 'voices' of older people in order that society is better equipped to deal with their travel needs and expectations. The second sub-section, 10.2.2, focuses on understanding the heterogeneity of later life, and the diversity of mobility and independence in later life. The third theme of recommendations, in sub-section 10.2.3, focuses on the need for digital inclusion strategies that outline specific measures to encourage older people to use information and communication technology. These are: inclusive design, equality of access, and appropriate training. The fourth sub-section, 10.2.4, determines a strategy for maintaining independence in later life. In this sub-section the ways that virtual mobility can be promoted as a tool to support mobility and independence in later life are explored. These policy recommendations, and several issues that should be considered prior to their implementation, are presented in Table 10, and discussed in further detail in the sub-sections below.

Table 10: Policy recommendations and issues to consider prior to implementation.

Policy recommendations	Issues to consider	Discussed further in sub-section
Mobility and travel behaviour in later life: Listening to the 'voices' of older people	− Equality of access to transportation systems and services − Travel needs and expectations in later life − Factors that impact mobility in later life (highlights listening to voices reveals new knowledge - link to time of day, day of week) − Local Authorities to include the needs of older people in local policy initiatives and planning (such as Local Transport Plans; and Local Area Agreements) − To listen to older people's fears around crime and youth culture	10.2.1
Understanding the heterogeneity of later life: The diversity of mobility and independence in later life	− The experiences, needs and aspirations of older people − Diversity of older peoples needs and expectations − Independence – choice and control: choice or enforced what impact does this have on quality of life, and sense of independence in later life	10.2.2
Digital inclusion strategies that consider the diverse needs of older people	− Inclusive design − Equality of access and use in later life − Appropriate training for older people	10.2.3
Promoting virtual mobility as a tool to support mobility and socially inclusive independence in later life	− Older people's access and use of information and communication technology − Application as a health and social care policy or initiative	10.2.4

10.2.1 Mobility and travel behaviour in later life: Listening to the 'voices' of older people

The Audit Commission (2004a) identified seven dimensions of independence as being: housing and home; neighbourhood; social activities, social networks and keeping busy; getting out and about; income; information; and health and healthy living. This study has explored the getting out and about dimension. The findings demonstrate the importance of being able to get out and about in later life: "I think it's important for everybody to be mobile, otherwise you deteriorate health wise" (Female aged 76 years old). This research also shows that through listening to the 'voices' and experiences of older people, it is possible to gain new knowledge and understanding of the issues that impact upon their lives. These are visible in the data that highlighted the factors that impact mobility in later life (Chapter Seven, section 7.3). Transportation is a vital part of the lives of almost all individuals; therefore, in order to understand how it impacts upon people's lives, it is necessary to learn more about the social and cultural aspects of its use (Lyons and Urry, 2006). This sub-section outlines recommendations for policy that would enhance the travel-based mobility of older people. It is essential for transportation policy to recognise the implications of the demographic changes of population ageing, and take appropriate measures. Given that the findings of this study suggest that, in the main, older people undertake increasingly shorter, more familiar journeys as they age. Alongside the localisation of transport systems and services, it seems logical that LTPs are the starting place for specific strategies that outline the travel-based needs of older people.

This study, as well as the Social Exclusion Unit (2006: 89) report, found that older people have reported concerns about crime and safety that have prevented them from using public transport, including feelings of intimidation on buses, and unlit bus stops and stations. The previous government made "efforts to tackle issues of crime and transport as they affect older people", with schemes such as the Help the Aged Neighbourhood Warden Support Schemes (Social Exclusion Unit, 2006: 91). However, little policy up until now has focused on this issue. Therefore, policy makers need to listen to older people's fears about crime and youth culture and try to assist locally with problem areas. Future policies that promote equal access to transportation systems and services are recommended. The current concessionary fare scheme for buses could be seen as a 'one size fits all' approach that excludes individuals who are not normally able to use the bus service, due to limited mobility or poor health status (Help the Aged, 2007b). Therefore, it would be useful to review the current concessionary fare scheme for buses through the perspectives of people that are able to use and people that are not able to use (users versus non-users).

10.2.2 Understanding the heterogeneity of later life: The diversity of mobility and independence in later life

This study demonstrates the diverse needs, experiences and aspirations of older people and the heterogeneity of later life, as previously discussed in Chapter Nine. It is recommended that, in tackling forms of age discrimination, it is vital for policymakers, planners, academics, the media and the general population to understand this heterogeneity of later life. Current classifications of older people as individuals aged 65 years and over provide a measure of the period of later life. However, as this thesis has shown, when looking at the perspectives of individuals aged 65 years old and over, there are many differences. Understanding these individual differences is important in terms of maintaining independence and sustaining quality of life in later life. Solutions that suit one person may be inappropriate for another person: for example, internet grocery shopping might help a frail person to stop bending and lifting heavier items, however, another person may view it as something that limits opportunities to socialise with others. Older people value having choice and control over their own lives (Audit Commission, 2004a: 3). Choice and control in later life can, however, be problematic. It is not always possible, particularly during later life, to make choices that maintain independence; for example, age-related impairments and health status may lead to compulsory choices, such as driving cessation or not being able to use a computer due to poor eyesight. It is therefore essential for policymakers to understand that individual choices are not made in a vacuum; they can be forced on an individual as a result of age-related impairments and declining health status, and this means that later life is a heterogeneous period of life.

10.2.3 Digital inclusion strategies that consider the diverse needs of older people

The data shows that older people, who make use of information and communication technology, do so for a number of reasons and have a variety of different patterns of usage, ranging from regular internet users to sporadic mobile phone users. This research has demonstrated the value of information and communication technology in the lives of some older people. This sub-sub-section outlines two recommendations for policy that would enhance the inclusivity of information and communication technologies for older people. The first proposes that groups of older users are involved from the initial planning stage of a technological products and services, and that this is continued throughout the design process. This user involvement could be, for example, in the form of focus group discussions that would ultimately enhance the inclusive potential of the design; as better design is better for all who use it, not just for older people. The second recommendation is

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the equality of access and use of information and communication technology in public spaces. Despite the work undertaken by the previous government, such as creating public access points through the UK Online Centre Network, and the Information and Communication Technology Skills for Life programme (Cabinet Office, 2004: 1). There is still more that the government and technological developers can do in order to ensure information and communication technology is affordable and accessible for all. The participants of the Getting Out and About project discussed a number of concerns around public access to information and communication technology and the availability of training courses to be able to use them. This included one participant who stated that, in his local library only one of the two computers was in use and this had been the case for several months. Another participant described how he had been on a waiting list for a place on a computer training course for over six months due to a lack of funding. In response to the Digital Britain report (DCMS/DBIS, 2009), Clark (2009: 1) a Senior Development Officer from the National Institute of Adult Continuing Education (NIACE) suggests that "a widespread programme of public education must be integral to any future initiatives for a Digital Britain, otherwise people will continue to be marginalised". In line with this, the thesis recommends that the government and technological developers invest in, and facilitate, appropriate training programmes to make sure older people are able to gain the skills to be able to use information and communication technology. There is therefore room for further policies that support the equality of access and use of information and communication technologies.

10.2.4 Promoting virtual mobility as a tool to support mobility and socially inclusive independence in later life

The ageing of the population is a critical policy issue (Grundy, 1991: 133). Therefore, this research recommends that the government increase public awareness of the growth in numbers of older people, particularly highlighting the oldest old; alongside the issues that relate to this, such as sustaining effective health and social care services, adequate financial resources, and suitable housing and transportation options. This thesis argues that the success of future health and social care policies and initiatives concerned with social inclusion and later life, as the population continues to grow older and for longer, is linked to the utilisation of information and communication technologies. As has been demonstrated by this study, information and communication technologies have the potential to sustain socially inclusive independence (Plath, 2008: 1365), by offering service users, carers, social workers and other individuals in society choice and control in their lives. Virtual mobility as a supplement or substitution of physical mobility offers individuals more choice and greater independence. The participants cited a number of motivations for using information and communication technology, including: learning the

skills whilst in employment; keeping in touch with friends and families (especially overseas); being given information and communication technology as a gift; pure fascination; and a source of information. Alongside this a number of barriers to using information and communication technology were also highlighted by the participants, such as: lack of desire; lack of knowledge/skills/confidence; cost; access; and not being able to remember instructions. Exploring both the motivations and barriers to using information and communication technology in later life has shown that if older people have a reason to use information and communication technology, then they are more likely to try it and even persevere with it. If information and communication technology has a purpose in an individual's life, such as facilitating a connection between family and friends living overseas, then it is more likely that the information and communication technology would become a part of their everyday life. Thus, similarly if virtual mobility has a purpose in an individual's life, it is likely that it would become a part of their everyday life. The concept of 'rational ignorance' (Casey et al, 2009: 3) is important here. 'Rational ignorance' is when "many people do not feel 'the need to know', or wish to bother to do so" (Casey et al, 2009: 3). Even so "everyone should be given the chance to become informed, active and engaged in the digital world and targeted outreach is needed to encourage participation through motivation and opportunities to learn" (Casey et al, 2009: 3). If virtual mobility is to be considered a tool that can support later life mobility and socially inclusive independence (Plath, 2008: 1365), it is vital that key individuals, such as social workers, careers, policymakers and transportation planners, receive guidance on how this can be achieved. The following paragraph discusses how this could be achieved.

In order to encourage older people to be virtually mobile, there is firstly a need to improve the training and literature available. One suggestion is that Local Authorities develop online and offline training courses on how to use computers and the internet that focus the needs of users with particular impairments, this could include guidance on the use of the mouse, and changing the font size of web pages and other programmes. Hardcopies of guidelines could also be produced so that the notes could be referred back to, this may help with cognitive issues, such as memory loss. In order to encourage older people to use such services it is worth ensuring that they are able to afford to use internet grocery shopping services. Deliveries to people aged 65 years old and over could be made at a reduced concessionary rate, or even free of charge to those on a low income. Also there should be no minimum order amount as this might exclude people living on their own or those on a low income from using such a service. Concessionary fares for internet shopping may encourage more people aged 65 years old and over to explore the use of these services. Computer and internet skills could also be learnt through social networks, and even local intergenerational projects, where skills are usually swapped between generations, such as grandparents and schoolchildren. As this topic of virtual mobility is a

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developing area with a limited existing knowledge, it is therefore suggested that further research, as discussed in the section below, is needed to strengthen the evidence base of the policy recommendations set out in this section.

10.3 Areas for further research

This section discusses areas of further research highlighted during this study. The nature of this exploratory qualitative research means that this thesis provides initial observations rather than fully explored answers (Rubin and Babbie, 2009: 41). Thus, there are a number of topics and issues that would benefit from further examination. In this section, three suggestions for future research in the area of mobility are made. The first takes a theoretical focus, and is concerned with the development of academic understanding of the concept of mobility and further exploration of the 'mobilities' paradigm. The second suggestion is from a methodological stance, and looks at the interdisciplinary benefits of understanding the social and cultural aspects of transportation, and using qualitative methodologies in the field of transportation studies. The third area focuses on how further research around the topics of virtual mobility, independence and later life could develop understanding in this area. As this research demonstrates, academic interpretations and the theoretical development of the concept of mobility, and the 'mobilities' paradigm is in its infancy. Therefore, there is room for further research that will develop the theoretical underpinning of the concept of mobility. This evolving area has significant scope for additional empirical research. The conceptual framework presented in this research is grounded in the findings from both the literature review and the empirical data collected as part of this study. These initial observations are valuable, however, there is a need for further research to investigate in greater detail, for example, examining the factors that impact upon the mobility of different groups of such as individuals with disabilities, younger people and other samples of older people from different parts of the UK. This would reveal new insights about mobility, which in turn would aid the development of the theoretical understanding of mobility and shed more light onto the 'mobilities' paradigm.

Within this research, qualitative methodologies have been used to explore the social and cultural aspects within the field of transportation studies. The application of a qualitative approach is increasing within the field, as discussed in Chapter Two. However, there are many other methodologies and approaches that could be utilised to explore this area. The localisation of transportation means that transportation issues impact upon individual localities differently (Grieco, 2009: 3). There is scope for research to empirically investigate these scenarios; of particular interest are comparisons between transportation

issues in urban and rural localities. In relation to this topic area, it is suggested that future research could explore the following: are there differences in mobility patterns of older people living in rural, opposed to urban localities; the mobility patterns of the younger old versus the older old; access and usage patterns of information and communication technologies by older people living in rural and urban localities; and the benefits and drawbacks of virtual mobility for older people in rural and urban localities. Exploring mobility issues, travel behaviour and access and use of information and communication technologies, throughout the life course would also provide much needed data in this area. There are a number of methodologies and approaches that would be useful for future research in this area. Ethnographic and visual methodologies could provide a range of data and insights not previously explored within this field. It is recommended that future research, which explores the concept of mobility, utilises both qualitative and quantitative methods. In the previous chapter the complexity of quantitatively measuring mobility was discussed, however these claims might raise some contention amongst scholars and so further research could explore this statement. These suggested studies would provide new data and insights within this research topic area of mobility in later life. The final recommendation is for developing understanding in this area through further research around the topics of virtual mobility and independence in later life. Demonstrated within this research is the inclusive potential of information and communication technology, particularly when linked to maintaining independence in later life, facilitated through virtual modes of mobility. This study argues that information and communication technology offers older people an alternative to physical mobility through its facilitation of virtual mobility, thus increasing independence in later life. Although, it is suggested that further research in this area would enable a more detailed evaluation of the statement. In order to strengthen these arguments and the conceptual framework for mobility in later life, it is proposed that further research that takes this forward is vital.

10.4 Concluding reflections

In conclusion, this thesis has shown the value of utilising an interdisciplinary approach and qualitative methods, within the field of transportation studies. This is reflected through an original contribution to knowledge, in the form of a conceptual framework for mobility in later life that visually explains the factors that impact upon mobility in later life, and draws upon the existing literature and the empirical data collected within this study. Advances in information and communication technology are changing the ways that people communicate and access information. Mobility within the information society is becoming more than a physical action, as for example, virtual methods of mobility are being acknowledged as an alternative to physical mobility (Urry, 2007). This thesis has discussed the embryonic forms of mobility, which it has defined, in terms of later life, as including, travel-based, assistive, physical, virtual, imaginative, communicative, and immobility. The data has highlighted the fact that the ability to communicate through instant messaging, email and internet grocery shopping can advantage older people by, for example, providing them with regular contact to family living abroad. It has also shown a number of drawbacks to virtual methods of mobility, such as it replacing physical face to face contact with people. This study reveals the diverse needs of older people, which it argues is important for future research, policy and planning, in relation to later life to consider. It also shows the significance of transportation, particularly public transportation in the lives of older people today.

The research draws attention to the potentially inclusive role of information and communication technologies within society. Information and communication technologies are rapidly developing, and so it is vital that further research be undertaken in order to understand more about the relationship between the individual and information and communication technology. This will assist in determining the inclusive potential of information and communication technology. The thesis has demonstrated that in offering older people an alternative to physical mobility, through the facilitation of virtual mobility, information and communication technologies can, potentially increase independence in later life, as it supports the principles of choice and control by expanding rather than narrowing the trajectories to mobility in later life. For this to be possible though, the individual's in question need to have the desire and skills to be able to use information and communication technology, as well as being able to gain access to such technology. As an aid to physical and travel-based mobility, virtual mobility has particular benefits for older people, people with disabilities, and those who are frail, immobile or becoming less mobile, alongside the population more generally. However, it is recommended that further

research in this area is conducted, in order to determine how far the evolving forms of mobility will affect the lives of older people, as well as the population in general, both now and in the future. This research argues that virtual mobility is a valuable tool that should be utilised in the future development of policies that support social inclusion and well-being in later life.

Appendices

Appendix 1: Table to show 2008-based principal population projections for United Kingdom by age last birthday in thousands, and based on low fertility/high life expectancy/low migration variant projection (000's).

Ages	2008	2012	2016	2020	2028	2036	2046	2058	2066	2076	2083
65-69	2,757	3,278	3,533	3,239	3,850	4,052	3,524	4,237	3,860	4,183	3,885
70-74	2,399	2,480	2,814	3,292	3,186	3,904	3,429	4,028	3,971	3,798	3,963
75-79	1,985	2,060	2,195	2,432	2,824	3,206	3,639	3,406	3,955	3,630	3,878
80-84	1,455	1,548	1,654	1,844	2,506	2,498	3,304	2,847	3,436	3,620	3,394
85-89	918	958	1,059	1,186	1,526	2,130	2,427	2,829	2,678	3,392	3,280
90-94	321	436	503	585	871	1,229	1,550	2,311	2,161	2,645	2,961
95-99	86	94	136	180	307	520	916	1,351	1,645	1,694	2,194
100 and over	11	13	16	24	59	149	361	724	1,183	1,594	1,960
Total aged 65-84	8,596	9,366	10,196	10,807	12,366	13,660	13,896	14,518	15,222	15,231	15,120
Total aged 85+	1336	1501	1714	1975	2763	4028	5254	7215	7667	9325	10395
Total aged 65+	9932	10867	11910	12782	15129	17,688	19,150	21,733	22,889	24,556	25,515
Total population (all ages)	61,393	62,741	63,885	65,051	67,241	68,988	70,618	71,921	72,564	73,343	73,868

Source: Adapted from a table presented in National Population Projections 2008 (see, ONS, 2008).

Appendix 2: List of policy documents and reports examined during the literature review

Policy/ document title	Year	Released by	Type	Topic(s)	Synopsis/key points	Available at	Reference
Developing an Integrated Transport Policy: An invitation to contribute	1997	Department for the Environment, Transport and the regions (DETR)	Green paper	Transport	Integrated transport policy supporting environmental sustainability and an inclusive society	http://www.dft.gov.uk/about/strategy/whitepapers/previous/developinganintegratedtransp5697	DETR (1997)
A New Deal for Transport: Better for Everyone	1998	Department for the Environment, Transport and the regions (DETR)	White paper	Transport	Better public transport would encourage more people to use it, as well as outlining the importance of the car. Set out the need for Local Transport Plans (LTPs) between councils, businesses, operators and users. Integrated transport policy which supports sustainability by providing people with more travel choices.	http://www.dft.gov.uk/adobepdf/187604/A_new_deal_for_transport_be1.pdf	DETR (1998)
Social Focus on Older People	1999	Office for National Statistics	Report	Demographics Ageing population	Social Focus on Older People looks at the experiences, lifestyles and attitudes of people aged 50 or over in the United Kingdom. It covers the topics: Population structure; Family life; Living arrangements; Geographical distribution; Housing; Labour market; Education and training; Leisure activities; Religious activities; Participation in voluntary work; Personal safety; Travel; Income; Income distribution; Wealth; Health; Health behaviour; Daily Living; Social care; Caring and Health care.		
Social Exclusion and the provision of public transport	2000	Department for the Environment, Transport and the regions (DETR)	Report	Social exclusion	Examines the connections between public transport and social exclusion in urban and rural areas across England. States that public transport is not just a means of access, there are social, health, economic and symbolic functions of public transport which transport planners and providers must be aware of.	http://www.dft.gov.uk/pgr/inclusion/se/socialexclusionandtheprovisi3262	DETR (2000a)
Transport Act 2000	2000	HM Government	Act of Parliament	Transport	To achieve the goals set out in the White Paper (DETR, 1998)	http://www.opsi.gov.uk/ACTS/acts2000/pdf/ukpga_20000038_en.pdf	
Transport 2010: The 10 year plan	2000	Department for Environment, Transport and the regions (DETR)	White paper	Transport	To achieve the goals set out in the White Paper (DETR, 1998)	http://www.dft.gov.uk/adobepdf/165259/tenyearplan	DETR (2000b)
Older people: Their transport needs and requirements	2001	Department for Environment, Transport and the regions (DETR)	Report	Transport	Aimed to improve public services for older people by meeting their needs better through listening to their views and encouraging their contribution	http://www.dft.gov.uk/pgr/inclusion/older/olderpeopletheirtransportnee3260	

Policy/ document title	Year	Released by	Type	Topic(s)	Synopsis/key points	Available at	Reference
National Service Framework for Older People	2001	Department of Health	Best Practice Guidance	Health and social care	First comprehensive strategy to underline the need for more effective integrated health and social care services for older people, and the promotion of independence and well-being in later life. 10 year programme of action. Set out eight standards for the integration of services for older people on a national scale, which were concerned with the following: standard one, rooting out age discrimination; standard two, person-centred care; standard three, intermediate care; standard four, general hospital care; standard five, stroke; standard six, falls; standard seven, mental health in older people; and standard eight, the promotion of health and active life in older age.	http://www.dh.gov.uk/dr_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4071283.pdf	DH (2001)
Securing Our Future Health	2002	Sir Derek Wanless	Independent review	Evidence-based assessment of the long-term resource requirements for the NHS.	Highlighted the need to ensure that older people remain healthy and active for as long as possible into later life. Suggesting the implementation of means tested individual care budgets with payments being paid directly to the individual was a way for older people to retain choice and control. This report sparked controversy and media attention, as the idea of putting individuals in the later stages of life in charge of their own care was not considered appropriate in all circumstances. However, the government argued that they wanted to put people first by allowing people to live their lives how they wish.	http://webarchive.nationalarchives.gov.uk/+/http://www.hm-treasury.gov.uk/consult_wanless_final.htm	Wanless (2002)
Making the Connections: Final report on Transport and Social Exclusion	2003	Social Exclusion Unit	Report	Social exclusion	Measures to address transport related social exclusion. Called for improved public services to build on the 'Local Transport Plans' set out within 'Transport 2010: The 10 year plan'.	http://www.cabinetoffice.gov.uk/media/cabinetoffice/social_exclusion_task_force/assets/publications_1997_to_2006/making_transport_2003.pdf	Social Exclusion Unit (2003)
All Our Tomorrows: Inverting the triangle of care	2003	Association of Directors of Social Services and Local Government Association (ADSS, LGA)	A joint discussion document on the future of services for older people	Health and social care	A joint discussion document to promote wider discussion on the future of health and social care for older people.	http://www.lga.gov.uk/lga/aio/21170	ADSS (2003)

Policy/ document title	Year	Released by	Type	Topic(s)	Synopsis/key points	Available at	Reference
Our future in our hands: putting people at the centre of social care	2004	Local Government Association	NHS contribution to debate to reform adult care services for 21st century	Health and social care	In response to ADSS (2003), this paper argued that well-being, independence and choice were essential in the development of successful future adult social care.		LGA (2004)
Choosing health: Making healthy choices easier	2004	Department of Health	White paper	Health and social care	This White paper aims to place health promotion at the heart of the NHS. This involves a big change in attitude, among NHS staff and the public, in helping people choose healthier lifestyles and giving them greater control over their health.	http://www.dh.gov.uk/dr_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4120792.pdf	
Independent living in later life	2004	Department of Work and Pensions	Research report 216	Independence	Presents findings from a qualitative study which explored older people's understanding of independence, and how service needs and behaviour in approaching services impacted their ability to live independently.	http://research.dwp.gov.uk/asd/asd5/rports2003-2004/rrep216.pdf	Barnes et al (2004)
Focus on Older People: Overview Report	2004	Office for National Statistics	Report	Demographics Ageing population	Focus on Older People combines data from the 2001 Census and other sources to illustrate its topic and provide links to other information.	http://www.statistics.gov.uk/downloads/theme_compendia/foop05/Olderpeople2005.pdf	
Link-Age: Developing networks of services for older people	2004	Department for Work and Pensions	Report	Ageing strategy	The government implementation the Link-Age Plus pilot scheme of integrated joined-up services accessed via a single gateway, this scheme evaluated the successes of services for older people focused on local need.	http://www.yorkshirefutures.com/system/files/ww_docs/EGA02%20Link-Age%20Developing%20networks%20of%20services%20for%20older%20people.pdf	DWP (2004)
Breaking the Cycle	2004	Social Exclusion Unit	Report	Social exclusion	Reviews the work of the Social Exclusion Unit and identifies priorities for future action.	http://www.cabinetoffice.gov.uk/media/cabinetoffice/social_exclusion_task_force/assets/publications_1997_to_2006/breaking_report.pdf	

Policy/ document title	Year	Released by	Type	Topic(s)	Synopsis/key points	Available at	Reference
The drivers of social exclusion: A review of the literature for the Social Exclusion Unit in the Breaking the Cycle series	2004	Jonathan Bradshaw, Peter Kemp, Sally Baldwin and Abigail Rowe Office of the Deputy Prime Minister (ODPM)	Literature Review	Social exclusion	*Drivers* are factors that cause social exclusion. It is clear from the evidence that the association between drivers and social exclusion is not a simple one: there are difficulties in understanding the direction of the relationship between drivers; they interact and overlap; and there are problems in determining the underlying cause.	http://www.cabinetoffice.gov.uk/media/cabinetoffice/social_exclusion_task_force/assets/publications_1997_to_2006/drivers_literature.pdf	
The impact of government policy on social exclusion among older people: A review of the literature for the Social Exclusion Unit in the Breaking the Cycle series	2004	Chris Phillipson and Thomas Scharf Office of Deputy Prime Minister (ODPM)	Literature Review	Social exclusion	1 of 4 reviews commissioned by the Social Exclusion Unit to help assess the impact of policy across all life stages. Reviews the literature about the impact of government policy on social exclusion amongst older people. Examines the background to issues relating to social exclusion in old age, identifies the range of policies used to tackle exclusion, and considers evidence about the impact of policies designed to integrate older people into social and community life.	http://www.cabinetoffice.gov.uk/media/cabinetoffice/social_exclusion_task_force/assets/publications_1997_to_2006/impact_older.pdf	Phillipson and Scharf (2004)
Enabling a Digitally United Kingdom: A Framework For Action	2004	Cabinet Office	Report	Digital inclusion	To encourage digital take-up and identify at risk groups. Examined ways to widen access to digital technology across all sections of society. Looks how people use digital technology and gives recommendations to increase access.	http://www.cabinetoffice.gov.uk/media/cabinetoffice/corp/assets/publications/reports/digital/digitalframe.pdf	
e-Government: reaching socially excluded groups?	2005	Report prepared by IECRC and Citizens Online for the IDeA	Report	Digital inclusion	eGovernment and digital technology can produce many benefits for local authorities and citizens. Studied eGovernment and digital access activities of 78 local authorities found that the benefits of digital transformation frequently fail to reach socially excluded groups.	http://www.idea.gov.uk/idk/aio/1075006	Foley et al (2005)
National Service Framework for Long Term Conditions	2005	Department of Health	Publication	Guidance	Expansion of the NSF to support people with long-term neurological conditions to live as independently as possible	http://www.dh.gov.uk/dr_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4105369.pdf	
Excluded Older People: Social Exclusion Unit interim report	2005	Social Exclusion Unit	Report	Social exclusion	Report presenting the responses to a consultation exercise with older people carried out to discover their views and experiences of service provision in England and identifying policy areas which need to change as a result of these findings.		

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Policy/ document title	Year	Released by	Type	Topic(s)	Synopsis/key points	Available at	Reference
Inclusion Through Innovation Tackling Social Exclusion Through New Technologies	2005	Office of Deputy Prime Minister (ODPM)	Report	Digital inclusion	Explores the potential that Information and Communication Technologies have to improve service delivery and quality of life for the most excluded groups. Information and communication technology is key to addressing exclusion and meeting complex needs. Explores how information and communication technology can be used to make mainstream public services - including education and training, health, employment and benefits and housing - more effective, efficient, and accessible for socially excluded groups.	http://www.cabinetoffice.gov.uk/media/cabinetoffice/social_exclusion_task_force/assets/publications_1997_to_2006/inclusion_final_report.pdf	ODPM (2005)
Independence, Well-being and Choice: Our vision for the future of social care for adults in England	2005	Department of Health	Green Paper	Adult health and social care	Outlined the radical reform of adult social care in England. This included a framework for the implementation of direct payments and individual budgets. The personalisation of services through the introduction of individual budgets for older people using social care and other local authority services, to buy in the services they need.	http://www.dh.gov.uk/dr_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4106478.pdf	DH (2005a)
Opportunity Age: Meeting the challenges of ageing in the 21st century	2005	Department for Work and Pensions	Cross-government strategy	Ageing population	Cross-government ageing strategy This strategy focused specifically on the issues facing people as they live longer, healthier lives (Audit Commission, 2004a). It was the first strategy of its kind to deliver the values of active independence, quality and choice for older people, and was also the first time that any UK government had focused jointly on all of these issues (DWP, 2005: xiii). The strategy focused on three key areas: work and income; active ageing; and services.	http://www.dwp.gov.uk/policy/ageing-society/strategy-and-publications/opportunity-age-first-report/	DWP (2005)
A New Pension Settlement for the Twenty-First Century	2005	Pensions Commission [The Turner Report]	Report	Pensions	Sets out the Pension Commission's conclusions on the likely evolution of the UK pension system if policy is unchanged, and makes recommendations for a new policy direction. Recommendations are based on two key elements: the automatic enrolment of employees into either a new National Pensions Savings System or into existing company pension schemes, with an option for employees to opt-out, and with a modest compulsory employer matching contribution; and reform of state pension provision in order to make it simpler to understand and less means-tested.		Pensions Commission (2005)
Excluded older people	2005	Social Exclusion Unit	Report	Social exclusion	The key issues highlighted in the report are independence, choice, prevention of exclusion and isolation. This report is the first feedback from the consultation on the needs of excluded older people		
Multiple Exclusion and Quality of Life amongst Excluded Older People in Disadvantaged Neighbourhoods	2005	Scharf, Phillipson and Smith, Social Exclusion Unit	Report using empirical data	Social exclusion	Highlights the experiences of older people affected by multiple forms of social exclusion.	http://www.communities.gov.uk/documents/corporate/pdf/788124.pdf	Scharf et al (2005)

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Opportunity Age - Volume Two: A social portrait of ageing in the UK	2005	Department for Work and Pensions	Ageing strategy	Ageing strategy	What is it like to grow old in the UK in 2005 for people who are already in old age, and the generation about to follow them?	http://www.dwp.gov.uk/policy/ageing-society/strategy-and-publications/opportunity-age-first-report/volume-2/	
A Sure Start to Later Life: Ending inequalities for older people	2006	Social Exclusion Unit	Report	Social exclusion	Government plans to mitigate the exclusion, poverty and isolation experienced by older people. Based on the 'Sure Start model' created for children and families. The 'Sure Start to Later Life' was piloted through a programme called 'Link-Age Plus' designed to test the suitability of the approach for older people, and other programmes including 'Partnerships for Older People Projects' and 'Local Area Agreements'. Emphasised the argument to join up services for older people (Social Exclusion Unit, 2006).	http://www.communities.gov.uk/documents/corporate/pdf/913275.pdf	Social Exclusion Unit (2006)
Our Health, Our Care, Our Say: A new direction for community services	2006	Department of Health	White paper	Health and social care	Outlined the future plans for the whole health and social care system, including a shift in the way services are delivered. The White Paper has four main aims: Health and social care services will provide better prevention services with earlier intervention; people will have more choice and a louder voice; more will be done to tackle inequalities and improve access to community services; and there will be more support for people with long-term needs.	http://www.dh.gov.uk/dr_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4127459.pdf	
Securing Good Care for Older People: taking a long-term view	2006	King's Fund	The Wanless social care review	Health and social care	Review of the challenges facing social care and the resources needed to meet them over the next twenty years. Funding proposals include restricting means-testing for personal care and putting in place a free package of basic care, topped up by personal contributions matched by the state.	http://www.kingsfund.org.uk/research/publications/securing_good.html	Wanless (2006)

Policy/ document title	Year	Released by	Type	Topic(s)	Synopsis/key points	Available at	Reference
A New Ambition for Old Age: next steps in implementing the National Service Framework for Older People	2006	Department of Health	A report from Professor Ian Philp, National Director for Older People, DH	Health and social care	Sets out the priorities for the second phase of the original NSF. The report highlighted three themes: dignity in care, joined-up care and healthy ageing. The report acknowledged that there are still deep-rooted negative attitudes and behaviours towards older people which impact on their experience of and quality of care.	http://www.dh.gov.uk/dr_con sum_dh/groups/dh_digitalas sets/@dh/@en/documents/ digitalasset/dh_4133947.pdf	
Our Health, Our Care, Our Say: Making it happen	2006	Department of Health	Report	Health and social care	This updates DH (2006a) discussed some of the progress being made, such as trialling of individual budgets for social care users, the development of new approaches to prevention, and shifting care.	http://www.dh.gov.uk/dr_con sum_dh/groups/dh_digitalas sets/@dh/@en/documents/ digitalasset/dh_4140065.pdf	DH (2006b)
Strong and Prosperous Communities - The Local Government White Paper (2 volumes)	2006	Communities and Local Government	White paper	Local communities	The aim of this White Paper is to give local people and local communities more influence and power to improve their lives. It is about creating strong, prosperous communities and delivering better public services through a rebalancing of the relationship between central government, local government and local people.	http://www.communities.gov .uk/publications/localgovern ment/strongprosperous	
Independent living: A cross-government strategy about independent living for disabled people	2006	Office for Disability Issues	Strategy to support independent living	Independence	A five year strategy for independent living. The aims of the strategy were that: disabled people, including older disabled people, who need support to go about their daily lives will have greater choice and control over how support is provided; disabled people, including older disabled people, will have greater access to housing, education, employment, leisure and transport opportunities and to participation in family and community life.	http://www.officefordisability. gov.uk/docs/wor/ind/ilr- executive-report.pdf	ODI (2006)
Concessionary fares for older and disabled people: Local Authority Guidance	2006	Department for Transport	Local Authority Guidance	Transport	On April 1st 2008 the local entitlement for free bus travel was extended to allow bus travel throughout England. It means that whether using the bus locally, or when visiting other parts of the country, older and disabled people will be able to travel for free.	http://www.dft.gov.uk/pgr/re gional/buses/concessionary/ informationlocalauthorities/	
Independence, Choice and Risk: A guide to best practice in supported decision making	2007	Department of Health	A guide to best practice	Decision making	Supports the principle of empowerment through managing choice and risk transparently in order to enable fair appraisal of the decision process, should it become necessary. It can be used to promote choice, while managing risk proportionately and realistically. It should have a two-fold use - in multi-disciplinary teams to foster a common approach to risk and, in organisations as the basis for corporate policies, as well as in contractual and other agreements. The aim should be to have a common approach to risk among all parties concerned in delivering health and social care, which will promote the sharing of responsibility for risk in a transparent and constructive way.	http://www.dh.gov.uk/dr_con sum_dh/groups/dh_digitalas sets/@dh/@en/documents/ digitalasset/dh_074775.pdf	

Policy/ document title	Year	Released by	Type	Topic(s)	Synopsis/key points	Available at	Reference
Meeting the Aspirations of the British People	2007	HM Treasury	Pre-Budget Report and Comprehensive Spending Review, October 2007	Ageing Strategy; independent living; personalisation of services	The Economic and Fiscal Strategy Report and the Financial Statement and Budget Report contain the Government's assessment of the medium-term economic and budgetary position. They set out the Government's tax and spending plans, including those for public investment, in the context of its overall approach to social, economic and environmental objectives.	http://www.official-documents.gov.uk/document/cm72/7227/7227.pdf	HM Treasury (2007a)
Public Service Agreement 17: Tackle poverty and promote greater independence and wellbeing in later life	2007	HM Treasury	Public Service Agreement	Independence; poverty; social exclusion	To ensure the specific needs of the older population are given due priority. The PSA set out the outcomes the government seeks to achieve in the Comprehensive Spending Review period to promote improvements in independence and well-being in later life for the longer term	http://www.hm-treasury.gov.uk/d/pbr_csr07_psa17.pdf	HM Treasury (2007b)
Putting People First: A shared vision and commitment to the transformation of Adult Social Care	2007	HM Government	Ministerial concordat	Adult health and social care; independent living	Following HM Treasury (2007a), this revealed a shared ambition across government to put people first through a radical reform of public services, which would enable people to live their own lives as they wish, confident that services are of high quality, are safe and promote their own individual needs for independence, well-being and dignity. Amore rounded approach to adult social care is outlined.	http://www.dh.gov.uk/dr_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_081119.pdf	
Lifetime Homes, Lifetime Neighbourhoods: A national strategy for housing in an ageing society	2008	Communities and Local Government	Government strategy	Independent living	This strategy will help older people live independently in their own homes for as long as possible; aims to provide a national housing and advice information service linked with local housing information services ; introduce new rapid repairs and adaptation services; and increase funding for the Disabled Facilities Grant.	http://www.communities.gov.uk/documents/housing/pdf/lifetimehomes.pdf	CLG (2008a)
Don't Stop Me Now: Preparing for An Ageing Population	2008	The Audit Commission	Report	Adapting public services for an ageing population	Councils need to engage with older people in commissioning, designing, and delivering both mainstream and targeted services.	http://www.audit-commission.gov.uk/SiteCollectionDocuments/AuditCommissionReports/NationalStudies/DontStopMeNow17July08REP.pdf	
Health and Social Care Act 2008	2008	HM Government	Government Act	Health and Social care	Aimed to enhance the safety and quality of care and improve public health.	http://www.opsi.gov.uk/acts/acts2008/pdf/ukpga_20080014_en.pdf	HM Government (2008)

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Policy/ document title	Year	Released by	Type	Topic(s)	Synopsis/key points	Available at	Reference
Never Too Late for Living: Inquiry into services for older people	2008	All Party Parliamentary Local Government Group	Report	Services for older people	The report focused on setting out key recommendations to address "a crisis in services for older people".	https://member.lgiu.org.uk/whatwedo/Publications/Documents/APPG%20Never%20too%20Late%20for%20Living.pdf	APPLGG (2008)
Local Transport Act	2008	HM Government	Government Bill	Transport	A government bill that meant Local Authorities had to react to local transport needs.	http://www.opsi.gov.uk/acts/acts2008/pdf/ukpga_20080026_en.pdf	
Delivering digital inclusion: An action plan for consultation	2008	Communities and Local Government	Action plan	Digital inclusion	Outlines the key issues relating to the use of digital technology and argues why digital exclusion is an increasingly urgent social problem.	http://www.communities.gov.uk/documents/communities/pdf/1001077.pdf	CLG (2008f)
Technology Futures and Digital Inclusion	2008	Communities and Local Government	Research report	Digital inclusion	Developments in digital technology over the last decade have been rapid and widespread, and that there is no reason to believe that the coming decade will have any less change. The developments in digital technologies have been matched by widespread adoption in the UK of digital radio, TV and the internet. The challenge of the last decade was digital inclusion, but as more and more of the population see the benefits of digital technologies the challenge now becomes one of understanding offline consequences of the online world.	http://www.communities.gov.uk/documents/communities/pdf/1000410.pdf	CLG (2008c)
Understanding Digital Exclusion	2008	Communities and Local Government	Research report	Digital exclusion	Used recent quantitative data sets to understand the trends in the take up of digital technologies. The report highlights the benefits that the different wider digital technologies can bring to socially vulnerable groups, and profiles which individuals or groups are most likely to be digitally disadvantaged and then considers some of the key barriers to digital equality. Recommending what approaches should be employed to achieve digital equality in the UK.	http://www.communities.gov.uk/documents/communities/pdf/1000404.pdf	CLG (2008b)
Community Perspectives on Digital Inclusion: Qualitative Research to Support the Development of the Digital Inclusion Strategy	2008	Communities and Local Government	Research report	Digital inclusion	Summarises insights and experiences from community and third sector organisations involved in initiatives aimed at opening up digital technologies to excluded communities.	http://www.communities.gov.uk/documents/communities/pdf/1000419.pdf	CLG (2008d)

Policy/ document title	Year	Released by	Type	Topic(s)	Synopsis/key points	Available at	Reference
An Analysis of International Digital Strategies: Why develop a digital inclusion strategy and what should be the focus?	2008	Communities and Local Government	Research report	Digital inclusion	Provides results from the analysis of documents and contact with Digital Inclusion experts in various countries undertaken by IECR.	http://www.communities.gov.uk/documents/communities/pdf/1000425.pdf	CLG (2008e)
Review of Older People's Engagement with Government	2008	John Elbourne	Report	Engagement with Government	Recognises the importance of providing the means for older people to give their views, as well as a need for strong structures to capture views and ensure they are heard. A pre-requisite for this is welcoming diversity. By hearing the views of individuals and the collective voice of older people as citizens, there is a real likelihood that increased influence will bring about changes in attitudes to how society views older people and will positively shape behaviours for the future. Also, by understanding needs and aspirations, policy makers and service providers will be able to plan for and deliver policies and services that really meet the requirements of local older populations.	http://www.dwp.gov.uk/docs/john-elbourne-181108.pdf	
Research and development work relating to assistive technology 2008-09	2008-09	Department of Health	Report	Digital inclusion	The report covers research and development work carried out by or on behalf of any government department in relation to equipment that might increase the range and independence of older and disabled people. The current report outlines the role of assistive technology in making independent living easier for older people and disabled adults and children. The report describes the wide range of government-funded projects supporting the development, introduction and evaluation of assistive technology. Relevant projects funded by the EU have also been included.	http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_102241	
Preparing for Our Ageing Society	2009	Department for Work and Pensions	A discussion paper	Ageing Strategy	A review of the cross-government ageing strategy 'Opportunity Age' (DWP, 2005)	http://www.dwp.gov.uk/docs/ageingstrategy.pdf	DWP (2009)
Delivering Digital Inclusion – An Action Plan for Consultation	2009	HM Government	Action plan	Digital inclusion	This report provides top line analysis of the responses to the 21 questions raised in the Delivering Digital Inclusion Action Plan, and the Government's response to the comments. It provides details of some of the Government's achievements and initiatives that have taken place since the publication of the Action Plan.	http://www.culture.gov.uk/images/publications/GovtResponse_DeliveringDigitalInclusionConsultation.pdf	
Digital Britain	2009	The Department for Culture, Media and Sport; Department for Business, Innovation and Skills	White paper	Digital Britain	An interim action plan developed by Lord Carter, the first Minister for Communications, Technology and Broadcasting. Key proposals include: universal access to high speed broadband by 2012; developing 'next generation networks' for mobile and broadband; and improving digital content and public service broadcasting in a "multi-media, multi-platform digital world (DH 2009)	http://www.culture.gov.uk/images/publications/digitalbritain-finalreport-jun09.pdf	DCMS/DBIS (2009)
Delivering Digital Inclusion: Summary of consultation responses	2009	Communities and Local Government	Report	Digital inclusion	The document provides a framework for achieving greater digital inclusion and for championing the best use of technology to tackle ongoing social inequalities. It sets out both immediate actions and a number of proposals for consultation.	http://www.communities.gov.uk/documents/communities/pdf/1211880.pdf	
Empowering Engagement: a stronger voice for older people	2009	HM Government	Government response to Elbourne's review	Engagement	It sets out an action plan to improve the quality of life of older people through their closer engagement with government.	http://www.dwp.gov.uk/docs/empowering-engagement-stronger-voice-older-people.pdf	

Policy/ document title	Year	Released by	Type	Topic(s)	Synopsis/key points	Available at	Reference
The Equality Bill	2009	HM Government	Government bill	Age discrimination	An Act to make provision to require Ministers of the Crown and others when making strategic decisions about the exercise of their functions to have regard to the desirability of reducing socio-economic inequalities; to reform and harmonise equality law and restate the greater part of the enactments relating to discrimination and harassment related to certain personal characteristics; to enable certain employers to be required to publish information about the differences in pay between male and female employees; to prohibit victimisation in certain circumstances; to require the exercise of certain functions to be with regard to the need to eliminate discrimination and other prohibited conduct; to enable duties to be imposed in relation to the exercise of public procurement functions; to increase equality of opportunity; to amend the law relating to rights and responsibilities in family relationships; and for connected purposes.	http://services.parliament.uk/bills/2008-09/equality/documents.html	
Shaping the Future of Care Together	2009	Department of Health	Green Paper	Health and Social care	The government's vision for a new care and support system based on a National Care Service that is fair, simple and affordable. Six elements that people should be able to expect from the new service: prevention services; national assessment; a joined-up service; information and advice; personalised care and support; and fair funding (DH, 2009).	http://www.dh.gov.uk/dr_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_102732.pdf	DH (2009)
Concessionary fares	from 1st April 2008	Government Act	/	Transport	On April 1st 2008 the local entitlement for free bus travel was extended to allow bus travel throughout England. It means that whether using the bus locally, or when visiting other parts of the country, older and disabled people will be able to travel for free.	http://www.dft.gov.uk/pgr/regional/buses/concessionary/	
Understanding the risks of social exclusion across the life course: Older age	2009	Social Exclusion Task Force and National Centre for Social Research	Research report	Social exclusion	Understand the "experience of multiple risk markers in older age is very important, especially as Britain has a rapidly growing older population".	http://www.cabinetoffice.gov.uk/social_exclusion_task_force/life-course.aspx	Becker and Boreham (2009)
LinkAge Plus: Capacity building – enabling and empowering older people as independent and active citizens	2009	Martin Willis and Robert Dalziel, Department for Work and Pensions	Research report 571	Independence	LinkAge Plus (LAP) provides a comprehensive approach for accessible joined-up services for older people; one which puts older people at the centre of policy making and service delivery.	http://research.dwp.gov.uk/asd/asd5/rports2009-2010/rrep571.pdf	
Report on implementation of opportunity age commitments	2009	Department for Work and Pensions	Report back on Opportunity age	Ageing strategy	The commitments made in Opportunity Age and how they have been delivered are discussed in this report.	http://www.dwp.gov.uk/docs/opp-age-commitments-pres.pdf	

Policy/ document title	Year	Released by	Type	Topic(s)	Synopsis/key points	Available at	Reference
Building a Society for All Ages	2009	HM Government	Updated ageing strategy	Ageing strategy	Second cross-government ageing strategy outlines new measures to prepare for the demographic changes of population ageing including: Active at 60 package and all-in-one cards to provide people with greater opportunities to stay active and involved in their later life; digital inclusion projects to give different generations the opportunity and ability to keep in touch; and the new UK Advisory Forum on Ageing for advising ministers on further steps the Government and partners need to take at national level to improve well-being and independence in later life (HM Government, 2009).	http://www.hmg.gov.uk/media/33830/fullreport.pdf	HM Government, 2009
Link-Age Plus: Benefits for older people	2009	Guy Daly, Department for Work and Pensions	Research report 554	Ageing strategy	LAP provides a comprehensive approach to providing accessible joined-up services for older people in which older people are at the centre of policy making and service delivery. Through LAP, central and local government have been combining their efforts with other statutory agencies and voluntary and community sector organisations to design, develop and deliver services that meet the needs of older people as a whole.	http://research.dwp.gov.uk/asd/asd5/rports2009-2010/rrep554.pdf	
Strong and prosperous communities - The Local Government White Paper: Final implementation plan	2009	Communities and Local Government	Implementation plan	Community	The White Paper set out the Government's commitment to empowering citizens and communities and to public sector reform. Its principal aims were to enable effective local services and to create better places, through new relationships and better governance.	http://www.communities.gov.uk/documents/localgovernment/pdf/1179718.pdf	
Digital Economy Bill	2009-10	The Department for Culture, Media and Sport and the Department for Business, Innovation and Skills	Government Bill	Digital Britain	Legislation aimed at bringing Britain into the digital age. It follows proposals about digital media set out in the Digital Britain White Paper published n June 2009. There are various aspects of the bill, which cover everything from local television provision and video game ratings to the powers of regulator Ofcom and how internet domain names are registered in the UK.	http://services.parliament.uk/bills/2009-10/digitaleconomy.html	
Resource guide for Local Authorities: Transport Solutions for older people	2009	Department for Transport	Resource guide for Local Authorities	Transport	This resource guide will help local authorities take account of the needs of older people when developing new LTPs in time for April 2011. Its aim is to signpost local authorities to existing resources, information and practices, including innovative examples of tailored transport solutions around the country. Not all the examples provided will be directly targeted at older people, but this group will be one of the biggest beneficiaries.	http://www.dft.gov.uk/pgr/inclusion/older/transportsolutions.pdf	

Appendix 3: Ethical application, risk assessment, research agreement and supporting documents

Approved 24th October 2007

University of Southampton

School of Social Sciences

July 2006

Postgraduate Ethics Review Checklist

This checklist should be completed by the research student (with the advice of the research supervisor) for all research projects.

Research Title:

Evaluating the transportation requirements of older people: can technology make a positive difference? – A case study

Research Student: Michelle Heward

Supervisor: Jackie Rafferty & Maria Evandrou

		YES	NO
1.	Will the study involve human participants?	X	
2.	Will it be necessary for participants to take part in the study without their knowledge and consent at the time? (e.g. covert observation of people)		X
3.	Does the study involve participants who are unable to give informed consent? (e.g. children, people with learning disabilities)		X
4.	Does the study involve participants who are commonly viewed as 'vulnerable'? (e.g. children, people with learning disabilities)	X	
5.	Will the study require the co-operation of a third party for initial access to the groups or individuals? (e.g. students at school, residents of a nursing home)	X	
6.	Will the study involve discussion of sensitive topics (e.g. sexual activity, drug use)?		X
7.	Could the study induce psychological stress or anxiety, cause harm or have negative consequences for the participants beyond the risks encountered in normal life?		X
8.	Will deception of participants be necessary during the study?		X
9.	Will blood or tissue samples be taken from participants? Are drugs, placebos or other substances (e.g. foods, vitamins) to be administered to the participants or will the study involve invasive, intrusive or potentially harmful procedures of any kind?		X
10.	Will the study involve prolonged or repetitive testing or physical testing?		X
11.	Is pain or more than mild discomfort likely to result from the study?		X
12.	Will financial or other inducements (other than reasonable expenses) be offered to participants?	X	
13.	Will the study involve recruitment of patients or staff through the NHS?		X
14.	Is the right to freely withdraw from the study at any time made explicit?	X	
15.	Where secondary data is to be used, is the risk of disclosure of the identity of individuals minimal?	X	
16.	If you are using secondary data, are you obtaining it from any where other than recognised data archives?	X	

Please refer to the School Guidance Notes for completing the Ethics Review Checklist before completing this form.

If you have answered YES to any of the questions (other than 13, 14 & 15), your research proposal will be referred to the School Ethics Committee. You will need to submit your plans for addressing the ethical issues raised by your proposal using the Research Ethics Approval Form, available on the School intranet. If you have answered Yes to Question 13, you will have to submit an application to the appropriate external NHS Ethics Committee. If this is the case, your application will not need to be reviewed by the School Ethics Committee.

Please note that it is your responsibility to follow the University of Southampton's Ethics Policy and any relevant academic or professional guidelines in the conduct of your study. **This includes providing appropriate information sheets and consent forms, and ensuring confidentiality in the storage and use of data.**

Signature of Research Student ………………………………………………… Date ……………………………

Signature of Supervisor ………………………………………………….. Date…………………………..

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University of Southampton   School of Social Sciences

ETHICS COMMITTEE APPLICATION FORM

Please note:
- You must not begin your study until ethical approval has been obtained.
- You must complete a risk assessment form prior to commencing your study.

1. **Name(s):** Michelle Heward

2. **Current Position:** Postgraduate Research Student

3. **Contact Details:**
   Division/School   School of Social Sciences:
   Social Work Studies
   Centre for Research on Ageing

   Email   mh3@soton.ac.uk

   Phone   07809225207

4. **Is the proposed study being conducted as part of an education qualification (e.g., PhD)**

   Yes ☒   **No** ☐

5. **If Yes, state name of supervisor (the supervisor should complete the declaration at the end of this form)**

   Jackie Rafferty and Maria Evandrou

6. **Title of Project:**

   (Working title)

   What role could technology play in assisting the mobility of older people?
   A case study of hand held navigational devices.

7. **What are the proposed start and end dates of the study?**

   Start PhD studies October 2006
   Start data collection November 2007
   Finish data collection April 2008
   Finish PhD studies September 2009

8.   Briefly describe the rationale, study aims and the relevant research questions

RATIONALE:

'People with inadequate access to motorised or personal mobility can find that they are unable to participate in the civic, economic, political and social life of the community, because their access to opportunities, social networks, goods and services is reduced by their lack of mobility.'

Kenyon, 2006: 1

Older people experience feelings of depression, loneliness and exclusion, as their levels of mobility naturally decrease with age (Crawford and Walker, 2006: 29). According to a report by the Department of Environment, Transport and the Regions (DETR/TRaC, 2000) there are multiple ways that transport facilitates social exclusion, including spatially, physically and financially. Conversely, the Social Exclusion Unit (2003) suggest, that it is through easing the access to everyday essential places such as, work, educational establishments, healthcare practitioners, food shops, and, social, cultural and sporting activities, that transport contributes to social inclusion. As others have argued, having 'adequate motorised or personal mobility' increases access to opportunities and civic participation (Kenyon, 2006: 1), thus, transport has the potential to build a more inclusive society (Lyons and Urry, 2006: 2).

Lyons and Urry (2006: 3) suggest that due to the nature and scale of technological advances within the transport field, it is now essential for research to consider the surrounding 'social, behavioural and motivational dimensions'. As the Social Exclusion Unit (2003) state if we consider that 'people need to know about transport', they not only need to know the services that exist, but timetable information, and also how to actually use the available services. So, this means that not only are people vastly different, but so is the information that they require. Thus, the information the individual requires needs to be individualised. How are these individual needs to be fulfilled by the advances within the field of transport and technology?

Emerging mobile technology has the 'potential to deliver personalised information tailored to individual needs and abilities' (Fischer and Sullivan, 2002). Focusing on the capabilities of specially adapted handheld navigational aids, this study seeks to explore a potential, which ultimately, has the ability to 'support communities' through the 'promotion of the independence' of all individuals; whatever their personal needs or level of ability (Fischer and Sullivan, 2002). Lazendorf (2003: 6) states that within the field of transportation research there are few empirical studies that make use of qualitative data, this he argues, should be reconsidered if such research is to advance. Therefore, this study will employ a mix of interdisciplinary theoretical approaches, as well as qualitative and quantitative methods of data collection.

PROJECT OVERVIEW:

The data collection stage of the study will involve the University of Southampton and ********* collaborating upon the MAPPED project. The MAPPED project is concerned with the use of handheld navigational technology, which provides users with the ability to plan

excursions between any specific points, at any given time of day. The idea behind the technology is similar to the in-car satellite navigation systems (such as tom-tom), the user can type their location and a destination into the handheld device, and they will then be given a set of journey instructions. However, a benefit of this particular system is that the instructions can also be filtered in order to match the individual's specific mode of travel (examples being, modes of public transport such as a bus or train, a private car, walking, cycling or using a wheelchair). The user will also have access to real-time travel data for, and during, the journey (for example, the location of appropriate bus stops and real-time timetable updates), as well as information about the accessibility of different stages of the journey (such as, wheel chair access points), including the final destination. The user can also update the information on the system; if, for example, they come across a shortcut or new facilities that have been put into place. This system then supports a multitude of traveler circumstances and is designed to be disability friendly with various user specific interfaces.

PROJECT AIMS:

The aim of this project is to assess the possible impacts that such technology can have on the navigation and general mobility of different user groups. The investigation will be conducted through a series of trials designed to simulate everyday situations, with various samples of different user groups (including older people and people with disabilities). Therefore these trials will highlight a range of navigational requirements, reflecting those of the population.

The aim of my PhD research is to examine how such technology could impact the lives of older people. My research is concerned with the extent to which the current transport systems meet the needs of the ageing population and whether technological innovations can in any way aid the mobility, independence and overall quality of life of older people.

RESEARCH QUESTIONS:

- What key issues do older people face when travelling?
- What key challenges do older people face when travelling? And how could they be overcome?
- Can the provision of tailored handheld devices support the travel behaviour of older people?
- To what extent can a handheld navigational aid really be 'designed-for-all'?

9. **Briefly describe the design of the study**

The study is described below in five stages. However, it should be noted that they are only depicted numerically here so that it is clear what is involved within each stage. During the study, stages one and three will be conducted first and simultaneously. Stages two and four are planned to run in the same month, and it is anticipated that stage four may happen first. Therefore, to ensure the validity of the study and enable a comparison of the results from stages one to four the data collection instruments will have a uniform format, and will be designed and agreed upon by all of the projects parties before commencement of the first set of trials. Stage five will be the last stage of data collection.

Data will be collected through several methods: questionnaires, travel diaries, interviews and focus groups. During the user trial stages (one-four, see below) the following instruments of data collection will be utilised. A pre and a post trial questionnaire (see, Appendix A for latest draft version) will measure the participant's opinions and attitudes towards the technology both before and after using it; this will determine whether the participant's opinions and attitudes have changed throughout the course of making use of the technology. Travel diaries (see, Appendix B for latest draft structure) will be completed by the participants whilst they are using the handheld devices, this will facilitate the recording of certain aspects of their travel behaviour, as well as any problems they experience with the handheld etc. In-depth interviews (see, Appendix C for latest draft schedule) will take place after the trials in order to explore, in more detail, the main issues arising from the questionnaire data.

After the user trials a series of focus groups (see, Appendix D for latest draft schedule) will take place with both users and non-users of technology (which is specified here as either the internet or a mobile telephone).

Stage One:

The initial trial will be based upon a purposive sample (n=10) of participants; including *********based Shopmobility customers, and ********* staff. This stage will support travellers in familiar surroundings, involving participants that have some prior experience of using either a mobile telephone or the internet and are aged between 18 and 65. The participants will, after a training session, be given a handheld device for a period of 14 days, during this time they will have to make use of the handheld and record in the travel diary for at least 7 of the days, and for at least 2 hours per day. The initial training sessions will last for 1-2 hours, with further sessions being offered to those who require extra assistance and/or one-on-one training. It is anticipated that the training will run from the end of October 2007, with the trials starting in November 2007. As the software is a recent innovation it maybe necessary to add extra dates to the trial, if for example, any significant problems occur with the technology that affects the participants being able to make effective use of the handheld for a long period(s) of time. The participants will also have to complete the pre & post questionnaire and an in-depth interview after the trials.

Stage Two:

In a similar vain to stage one, the extended trial will involve a purposive sample (n=6, 3 aged 65-74 and 3 aged 75+) of older people from the *********area. This stage will support travellers in familiar surroundings, involving participants that have some prior experience of using either a mobile telephone or the internet. The participants will, after a training session, be given a handheld device for a period of 21 days, during this time they will have to make use of the handheld and record in the travel diary for at least 7 of the days, and for at least 2 hours per day. This stage is planned to start in January 2008. The training sessions will run in the same way as the initial trials; lasting from 1-2 hours, with further sessions being offered to those who require extra assistance and/or one-on-one training. The participants will also have to complete the pre & post questionnaire and an in-depth interview after the trials.

Stage Three:

In conjunction with stages one and two, there will be trials running simultaneously as part of the project; these will take place in *********, and will be run by another partner in the project, the *********. These trials will support travellers in familiar surroundings, involving a purposive sample (n=20) of participants aged between 18 and 65 that have some prior

experience of using either a mobile telephone or the internet. The participants will, after a training session, be given a handheld device for a period of 14 days, during this time they will have to make use of the handheld and record in the travel diary for at least 7 of the days, and for at least 2 hours per day. The participants will also have to complete the pre & post questionnaire and an in-depth interview after the trials.

Stage Four:

This stage will support travellers in unfamiliar surroundings, again involving participants that have some prior experience of using either a mobile telephone or the internet. The team from ********* and team from *********will each swap participants, who will then use and give feedback on the handheld devices. The number of participants in this stage is however restricted due to the financial costing of such an exercise, and will in reality be limited to one or two from each place. The participants will, after a training session, be given a handheld device for a period of 14 days, during this time they will have to make use of the handheld and record in the travel diary for at least 7 of the days, and for at least 2 hours per day. The participants will also have to complete the pre & post questionnaire and an in-depth interview after the trials.

Stage Five:

This stage involves the design of focus groups with a purposive sample of older people, including users and non-users of technology. Access to participants will be facilitated through local pensioner's forums (e.g. ********* Pensioners Forum), groups (e.g. Civil Service Pensioners Alliance – ********* and *********), charities (e.g. Age Concern, Help the Aged) etc., with the focus groups taking place in February and March 2008. To encourage as many participants as possible, the focus groups will take place in neutral 'safe and comfortable' settings such as local community centres. The study will be taking place within the winter months which means a reduction in daylight hours; this will be considered when deciding appropriate times for the groups to meet. Two focus groups with 6-8 participants will include non-users, and two with 6-8 participants will include users of technology. There will also be two age quotas for the focus groups, one of each of the user and non-user groups will be formed of participants aged between 65 and 74, with the other groups aged 75+.

It is important to find participants that have not taken part in any of the other stages of this study, as the participants will not actually use the handheld devices for a specific journey. They will instead be given 5-10 minutes at the beginning of the focus group in order to explore its size and possible functions, and be briefed about what the handheld is designed to do. The participants will then be asked to comment on the concept and the device, rather than its real-life functions specifically. The groups will give Michelle feedback on issues such as, what they think about the overall idea behind the technology, the size of the handheld, and whether they would use it etc. Before the focus group begins a short questionnaire will be given to all of the participants, this will gauge demographic information, attitudinal information, and whether they are early or late adopters to technology etc. A board game may also be used to structure part of the focus group, questions or topics could be placed on cards or certain squares of the board, and thus, when landed on are likely to ignite discussions in those relevant areas. If used the board games will draw influence from a game already on the market entitled 'The London Underground Board Game' for which the idea is to reach all the destination stations whilst hindering your opponent's game as much as possible. The board game will be piloted before the actual focus groups in order to see how it is received, and how well it works. The participants will still be asked questions on the topics utilised within the board game if, in the end it is decided not to use the board game.

10.   **Who are the participants?**

Stage One:
From *********- Purposive sample (n= 10) of Shopmobility customers and ********* staff, aged between 18 and 65 and with previous experience of using either the internet or a mobile telephone.

Stage Two:
From *********- Quota sample (n=6) of older people (3 aged 65 – 74, and 3 aged 75+ years) with previous experience of using either the internet or a mobile telephone.

Stage Three:
From ********* - Purposive sample (n=20) of people with some physical or mental impairment aged between 18 and 65.

Stage Four:
From ********* Purposive sample (n=2) of a visually impaired user from *********, and a physically or mentally impaired user.

Stage Five:
From *********- Quota sample (n=1) for focus groups with up to 8 participants in each. The participants must be aged between *65 and 74* and have *some* previous experience of using technology in the form of either the internet or a mobile telephone. An equal gender balance is also preferable.

From *********- Quota sample (n=1) for focus groups with up to 8 participants in each. The participants must be aged *75+* and have *some* previous experience of using technology in the form of either the internet or a mobile telephone. An equal gender balance is also preferable.
From *********- Quota sample (n=1) for focus groups with up to 8 participants in each. The participants must be aged between *65 and 74* and have *no* previous experience of using technology in the form of either the internet or a mobile telephone. An equal gender balance is also preferable.

From *********- Quota sample (n=1) for focus groups with up to 8 participants in each. The participants must be aged *75+* and have *no* previous experience of using technology in the form of either the internet or a mobile telephone. An equal gender balance is also preferable.

11.   **How will they be identified, approached and recruited to the study?**
(please attach a copy of the information sheet if you are using one)

Stage One:
********* will carry out the recruitment.

Stage Two:
Michelle will complete the recruitment for this stage. Participants will be invited to take part through various local forums, groups and charities, including The ********* Pensioners Forum, The local Shopmobility scheme, *********Civil Service Pensioners Alliance, Age Concern, Help the Aged.

Stage Three:
The ********* in ********* will carry out the recruitment.

Stage Four:
********* and the ********* in ********* will carry out the recruitment.

Stage Five:
Michelle will complete the recruitment for this stage. Participants will be invited to take part through various local forums, groups and charities, including The ********* Pensioners Forum, The local Shopmobility scheme, *********Civil Service Pensioners Alliance, Age Concern, Help the Aged.

12. **How will you obtain the consent of participants?**
(Please attach a copy of the consent form if you are using one)

All of the possible participants (those who show an interest in taking part) will be given the information sheet (see, Appendix E for latest draft version – N.B. the version here has the appropriate wording to be used, however, the final version will be in a brochure format) which clearly outlines the study, the expectations of their participation, if they agree their rights, and the issues of confidentiality and anonymity. They will be asked to read this information sheet and if they then agree to take part in the study they will then be asked to sign the consent form (see, Appendix F for latest draft version) before they take part. All of the possible participants will also be invited to attend an Information Session, which will give them an opportunity to ask any questions, meet the research team, meet other participants etc. The Information Session will be structured to include a small talk about the study, what is expected of the participants, what will happen to the findings, some information about the handheld etc. By signing the consent form the participants are confirming that they have read and understood the information sheet, asked and had answered any questions, know their participation is voluntary and can withdraw at any time without penalty, agree to any interviews being audio and video recorded, agree to the use of anoymised quotes, and agree to take part in the study.

13. **Is there any reason to believe participants may not be able to give full informed consent? If yes, what steps do you propose to take to safeguard their interests?**

N/A

14. **If participants are under the responsibility or care of others (such as parents/carers, teachers or medical staff) what plans do you have to obtain permission to approach the participants to take part in the study?**

N/A

15. **Briefly describe what participation in the study will involve for study participants. Please attach copies of any questionnaires and/or interview schedules to be used**

Those taking part in any of the four trial stages:

Each participant, after giving their consent, will complete the pre trial questionnaire, which will log their demographic information, as well as their responses to other mainly attitudinal

questions. They will then attend the MAPPED project training programme where they will receive information and guidance on the system, get to practice using the handheld device, and ask any questions.

When the trials begin each participant will be given a handheld device, a printed guide to the functions of the handheld, the twenty-four hour helpline telephone number (see question 17), a list of places to visit, and a travel diary. They will have to make use of the handheld and complete the travel diary for at least 7 days during their trial period of either 14 or 21 days. During these 7 usage days the participants will be asked to make use of the handheld for at least 2 hours. The first few times that the participant uses the handheld will involve the participant undertaking specified tasks, once they are more familiar with the technology they will be given the opportunity to visit the places they wish from the pre-determined list.

Halfway through the trial each participant will either meet with, or receive a telephone call from Michelle, to offer them the opportunity to discuss and hopefully resolve any problems/concerns they have/are experiencing with the handheld, or with participating in the rest of the study.

After the trial each participant will meet with Michelle, hand in their completed travel diary, and fill in the post-trial questionnaire. They will also need to complete the depth interview so arrangements will be made for a suitable place, time and date in which to hold this interview.

As an incentive and a thank you each participant that successfully accomplishes all of the stages outlined above will receive a £50 high street voucher, which the MAPPED project will finance. This is explored further and reasoned in the 'Coercion' statement in section 21.

Those participating in a focus group:

Those that take part in the focus groups will be required to discuss topics/questions in a group setting which maybe facilitated through the use of a specially designed board game. These topics and questions are broadly listed in the attached focus group discussion guide. The participants will be required to give up approximately two hours of their time; in return they will receive a free lunch or afternoon tea as a thank you.

16. **How will it be made clear to participants that they may withdraw consent to participate at any time without penalty?**

The participants will be reminded throughout the trial, both by Michelle and on any instrument of data collection (such as the questionnaire, the consent form, and the information sheet), that they may withdraw their initial consent to participate without any additional penalties. However, they will also be reminded that if they do withdraw before completion of all the necessary stages they will not receive the incentive voucher. The participants will be given the information sheet before they decide to participate in the study, they will be encouraged to keep this sheet and reminded that if they wish to withdraw their consent without additional penalty and at any time, then the best way would be to contact Michelle directly. The participants will also be informed that throughout the trials they will be able to telephone the twenty-four hour helpline (see question 17) if they wish to withdraw their consent to participate.

17. **Detail any possible distress, discomfort, inconvenience or other adverse effects the participants may experience, including after the study, and how this will be dealt with.**

It is unlikely that this study will cause the participants any distress, discomfort, inconvenience or other adverse effects, however, in the extreme event of this happening during the trials, the participants will be advised to call the twenty-four hour telephone helpline (run by *********), which will be in place during all of the user trials. If the participants experience any problems at all, for example, with the technology itself, or feel unable to continue their participation in the trials, or simply require some extra guidance with the handheld, they will be able to talk to someone straight away who will focus on resolving the problem. If the problem requires further attention or personal contact, there will also be a team of people with significant knowledge of the technology who will make themselves available during office hours throughout the trials. The participants will also be given the information sheet detailing Michelle's contact details and those of her supervisory team, who they can contact if they experience any adverse effects during or after the study, if more than minor issues arise the participants will then be referred as appropriate. During the focus groups the discussion will cover the participants 'difficulties in travelling independently', and as the measures in place deal with technology, this may cause some distress to the participants. Therefore, there will be two facilitators present during each focus group, one to run the focus group and guide the discussion and the other to provide emotional support to the participants, if required, during and immediately after the focus group sessions. The focus group members will also be given Michelle's contact details and those of her supervisory team should they require support afterwards.

18. **How will participant anonymity and confidentiality be maintained?**

Participants will be assured that their names and addresses will not be used in any reports or written communication resulting from the study; where participants are highlighted in the study reports pseudonyms will be implemented for their protection. The participants will also be made aware that the research team at ********* and the University of Southampton are the only organisations that will have access to the study data.

19. **How will data be stored securely during and after the study?**

As the data from the questionnaires, travel diaries, interviews, and focus groups is collected all paper copies, notes, and audio and video recordings etc. will be stored in a lockable cupboard which has limited access. Once it is been input into the appropriate computer package, the data files will be password protected, and stored on a secure network. Several copies of this input data will be transferred to disk; these will also be stored in the lockable cupboard and kept only as a backup. Access to any of the data will then be strictly limited to members of the research team. The paper copies, notes and, audio and tape recordings will be destroyed once Michelle graduates. The computed data files will contain anomysised results so can be kept for an indefinite period as long as they are stored securely with passwords and on a secure network.

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20. **Describe any plans you have for feeding back the findings of the study to participants**

A letter of thanks and a summary of the main findings of the study will be sent to each participant who requested a copy by leaving their contact details with Michelle. The letter will be sent no later than May 2008. The letter will also list details of any planned presentations and/or websites with more information that the participants may wish to attend or access.

21. **What are the main ethical issues raised by your research and how do you intend to manage these?**

Working with a 'vulnerable' group

Older people can be considered a 'vulnerable' group of research participants. This study however, will not infringe on the autonomy, independence, or quality of life of the older participants; it is designed to 'give them a voice' rather than promote their insecurities.The participants with a physical or mental impairment can also be considered a 'vulnerable' group, therefore, a risk assessment will be carried out individually with each participant, and this will consider whether they are fit for the study and that their individual's needs are safeguarded.

Deception:

Some of the participants may be deemed as 'vulnerable' groups, including the older people and those with physical or mental impairment, in order that they are fully aware of what the research entails they will firstly be given the Information Sheet detailing the research purpose, methods and outputs. The participants will also be invited to an Information Session where they will receive more information about the study and what would be expected of them if they decided to take part, as well as a chance to meet the research team and ask any questions they may have. If they then agree to take part in the study they will then be asked to sign the Consent Form and be encouraged to keep the Information Sheet for future reference. At any point the participants will be able to ask any questions, voice any concerns they may have about the research, or withdraw their participation by either telephoning the twenty-four hour helpline, or by contacting Michelle or her supervisors directly (contact details on the Information Sheet). Where necessary individual risk assessments will be conducted to make sure that the participants are both fit for the study, and that their needs are safeguarded.

Informed consent

All participants will receive both written and verbal information about the study. The initial invitation to participate through the information sheet will explain the purpose of the study, giving a brief description of the study design and timescale and an indication of how the findings would be used. These issues will also be covered in the Information Session open to all possible participants. Participants will be asked to give their written consent to contribute to the study before the study begins through signing the consent form. The exploratory nature of this study will be emphasised to the participants so as not to raise expectations about the future of this technology.

Confidentiality and anonymity

Participants will be assured that their names and addresses will not be used in any reports or written communication resulting from the study; where participants are highlighted in

reports or written communication pseudonyms will be used for their protection. The participants will also be made aware that the research team at ********* and the University of Southampton are the only people that will have access to their names and addresses.

Incentives to participate

As the trials may cause some disruption to the participants 'normal' social activities, and will last for a reasonable period of time they will be offered a £50 high street voucher as an incentive to participate. The participants will be informed at the start of the trial that they will only receive the voucher upon successful completion of *all* of the stages of the trial. This voucher will also serve as a thank you for their participation in the study. Any travel costs for trips that are made solely for research purposes will also be reimbursed. The MAPPED project will cover these financial implications.

The focus group participants will receive a free lunch or afternoon tea as a thank you for their time and contributions. Michelle will cover these costs.

Coercion:

The £50 voucher is conditional upon completion of all of the stages of the trial, and thus could be interpreted as 'impeding' the participant's right to withdraw without penalty, especially considering the state pension is just £87.30 a week for a single person, and £139.60 for couples. However, the participants will also be informed on several occasions that they have to complete all of the trial stages to receive the voucher, and that this will not affect their right to withdraw. And as the trials require a period of sustained commitment from the participant the incentives used within this study are not deemed too extravagant, instead the £50 voucher (for participating in user trials) or lunch (for participating in a focus group) is given as a thank you for the participant's time and contribution.

Personal security

There are no significant risks to the participants or research team as the trials and any methods of data collection will be undertaken during daylight hours in a public place. It will be outlined in the consent form that in the event of injury whilst participating in the trials there will be no case for legal action to be taken against the MAPPED project, *********, the University of Southampton, or any individual involved with the study. If the participants experience any problems or issues whilst taking part in the trials they can telephone the twenty-four hour helpline for guidance.

Stress:

It is unlikely that this study will cause the participants any distress, discomfort, inconvenience or other adverse effects, however, in the extreme event of this happening during the trials, the participants will be advised to call the twenty-four hour telephone helpline (run by *********), which will be in place during all of the user trials. If the participants experience any problems at all, for example, with the technology itself, or feel unable to continue their participation in the trials, or simply require some extra guidance with the handheld, they will be able to talk to someone straight away who will focus on resolving the problem. If the problem requires further attention or personal contact, there will also be a team of people with significant knowledge of the technology who will make themselves available during office hours throughout the trials. The participants will also be given the information sheet detailing Michelle's contact details and those of her supervisory team, who they can contact if they experience any adverse effects during or after the study.

The right to withdraw without penalty

The participants will be reminded throughout the trial, both by Michelle and on any instrument of data collection (such as the questionnaire, the consent form, and the information sheet), that they may withdraw their initial consent to participate without any additional penalties. However, they will also be reminded that if they do withdraw before completion of all the necessary stages they will not receive the incentive voucher. The participants will be given the information sheet before they decide to participate in the study, they will be encouraged to keep this sheet and reminded that if they wish to withdraw their consent without additional penalty and at any time, then the best way would be to contact Michelle directly. The participants will also be informed that throughout the trials they will be able to telephone the twenty-four hour helpline (see question 17) if they wish to withdraw their consent to participate.

22. **Please outline any other information you feel may be relevant to this Submission**

A research agreement (see, Appendix H) between myself (representing the School of Social Science, University of Southampton) and ********* has been drawn up. This document functions for the following reasons: validating confidentiality issues, establishing the intellectual property rights, resolving any future conflicts quickly and through the correct channels, detail the methods of data collection and analysis, verify the timeframe of the study, documenting the dissemination strategies, and stating the main persons involved with the trials and with access to the data.

This is a collaborative project involving several partners; I am seeking ethical approval from the School for the section of the project that I am conducting (stages two and five). ********* and the ********* in ********* are responsible for seeking ethical approval from their own ethics committees for their particular stages. Presumably the overall project is also subject to approval by the *********local research ethics committee (L-REC).

I hold a valid Enhanced Criminal Records Bureau (CRB) check, which was issued in 2007.

A copy of the research proposal is attached (see, Appendix I).

Further information about the *MAPPED project* is available at:
http://services.txt.it/MAPPED/

References:

Crawford, K., and Walker, J. (2006) *Social Work with Older People.* Exeter: Learning Matters.

DETR/TRaC (2000) *Social Exclusion and the Provision and Availability of Public Transport.* London: Department of Environment, Transport and the Regions.

Fischer, G., and Sullivan, J. (2002) 'Human-Centered Public Transportation Systems for Persons with Cognitive Disabilities — Challenges and Insights for Participatory Design', Proceedings of the *Participatory Design Conference* (PDC'02), Malmö University, Sweden, June, pp. 194-198.

Kenyon, S. (2006) 'Virtual mobility', available at *http://www.trg.soton.ac.uk/vm/m-r.htm*, accessed 12th Oct 2006.

Lanzendorf, M. (2003) 'Mobility biographies. A new perspective for understanding travel behaviour'. Paper presented at the *10th International Conference on Travel Behaviour Research.* Session 1: 10-15th August 2003, Lucerne.

Lyons, G. and Urry, J. (2006) 'Foresight: the place of social science in examining the future of transport'. Paper presented at *Evidence-Based Policies and Indicator Systems*, 11-13 July, London.

Social Exclusion Unit (2003) *Making the Connections: Transport and Social Exclusion.* Report by the Social Exclusion Unit. London: Social Exclusion Unit.

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<u>Supervisor/Grant-holder/Research Student Declaration</u>

I have discussed this application with the applicant and support it.

Any further comments:

Supervisor/Grant-holder:

Name:

Date:

Research Student:

Name:

Date:

</div>

STUDENT'S NAME: **Michelle Heward**

DEGREE: **MPhil/PhD Social Work Studies**

YEAR: **Second**

SUPERVISOR: **Jackie Rafferty & Maria Evandrou**

PART 1: DISSERTATION/PROJECT ACTIVITIES (to be completed by the student)

What do you intend to do? (please provide a brief description of your project and details of your proposed methods)

The data collection stage of the study will involve the University of Southampton and *********
collaborating upon the MAPPED project. The MAPPED project (for further information see
http://services.txt.it/MAPPED/) is concerned with the use of handheld navigational technology, devices
which provide users with the ability to plan excursions between any specific points, at any given time of day.
The idea behind the technology is similar to the in-car satellite navigation systems (such as Tom-Tom), the
user can type their location and a destination into the handheld device, and they will then be given a set of
journey instructions. However, a benefit of this particular system is that the instructions can also be filtered
in order to match the individual's specific mode of travel (examples being, modes of public transport such as
a bus or train, a private car, walking, cycling or using a wheelchair). The user will also have access to real-
time travel data for, and during, the journey (for example, the location of appropriate bus stops and real-time
timetable updates), as well as information about the accessibility of different stages of the journey (such as,
wheel chair access points), including the final destination. The user can also update the information on the
system; if, for example, they come across a shortcut or new facilities that have been put into place. This
system then supports a multitude of traveler circumstances and is designed to be disability friendly with
various user specific interfaces.

The study will involve individuals testing and/or giving feedback about the handheld navigational device and
its applications throughout five separate stages. Data will be collected through several methods:
questionnaires, travel diaries, interviews and focus groups.

- Firstly a series of user trials (stages one-four, see the Ethics Committee Application for a more
  detailed explanation of these stages) will take place whereby the participants will have to use the
  device to navigate around the city of *********, testing each of the functions of the handheld,
  outlined above, in turn. The participants will include some older people, and people with disabilities.
  The trials will support travellers in both familiar and unfamiliar surroundings; however, they will
  only involve participants that have some prior experience of using either a mobile telephone or the
  internet. The participants will, after a training session, complete a pre-trial questionnaire. They will
  then be given a handheld device for a period of 14 or 21 days, during this time they will have to
  make use of the handheld and record in the travel diary for at least 7 of the days, and for at least 2
  hours per day. When they hand in their travel diaries the participants will have to complete the post-
  trial questionnaire. Lastly the participants of the user trials will also have to complete an in-depth
  interview after the trials.

- Secondly the study involves a selection of focus groups (stage five, see the Ethics Committee Application for a more detailed description of this stage) with older people, including users and non-users of technology (specified here as either the internet or a mobile telephone). It is important to find participants that have not taken part in any of the other stages of this study, as the participants will not actually use the handheld devices for a specific journey. The focus groups will feedback on issues such as, what they think about the overall idea behind the technology, the size of the handheld, and whether they would use it etc. Within these focus groups a board game maybe incorporated to keep the topic of discussion focused around the research questions.

Will this involve collection of information from other people? (in the case of projects involving fieldwork, please provide a description of your proposed sample/case study site)

- Yes the study will involve the collection of information from other people.

Stage One:
Purposive sample (n= 10) of Shopmobility customers and ********* staff, aged between 18 and 65 and with previous experience of using either the internet or a mobile telephone from *********. ********* will carry out the recruitment.

Stage Two:
Quota sample (n=6) of older people (3 aged 65 – 75, and 3 aged 85+ years) with previous experience of using either the internet or a mobile telephone from *********. Michelle will complete the recruitment for this stage. Participants will be invited to take part through various local forums, groups and charities, including The ********* Pensioners Forum, The local Shopmobility scheme, *********Civil Service Pensioners Alliance, Age Concern, Help the Aged.

Stage Three:
Purposive sample (n=20) of people with some physical or mental impairment aged between 18 and 65 from *********. The ********* in ********* will carry out the recruitment.

Stage Four:
Purposive sample (n=2) of a visually impaired user from *********, and a physically or mentally impaired user from *********. ********* and the ********* in ********* will carry out the recruitment.

Stage Five:

Quota sample (n=1) for focus groups with up to 8 participants in each. The participants must be aged between *65 and 75* and have *some* previous experience of using technology in the form of either the internet or a mobile telephone. An equal gender balance is also preferable.

Quota sample (n=1) for focus groups with up to 8 participants in each. The participants must be aged *85+* and have *some* previous experience of using technology in the form of either the internet or a mobile telephone. An equal gender balance is also preferable.

Quota sample (n=1) for focus groups with up to 8 participants in each. The participants must be aged between *65 and 75* and have *no* previous experience of using technology in the form of either the internet or a mobile telephone. An equal gender balance is also preferable.

Quota sample (n=1) for focus groups with up to 8 participants in each. The participants must be aged *85+* and have *no* previous experience of using technology in the form of either the internet or a mobile telephone. An equal gender balance is also preferable.

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Michelle will complete the recruitment for this stage. Participants will be invited to take part through various local forums, groups and charities, including The ********* Pensioners Forum, The local Shopmobility scheme, *********Civil Service Pensioners Alliance, Age Concern, Help the Aged.

If relevant, what location/s is/are involved?

Stage One:
Is based in *********, and will involve participants from ********* visiting public places such as shopping centres, doctors, pharmacy, as well as attractions such as museums, churches, cafes, art galleries & libraries etc. within the city of *********.

Stage Two:
Is based in *********, and will involve participants from ********* & ********* visiting public places such as shopping centres, doctors, pharmacy, as well as attractions such as museums, churches, cafes, art galleries & libraries etc. within the city of *********.

Stage Three:
Is based in *********, and will involve participants from ********* visiting public places such as shopping centres, doctors, pharmacy, as well as attractions such as museums, churches, cafes, art galleries & libraries etc. within the city of *********.

Stage Four:
Is based in ********* and *********. It will involve participants from ********* visiting public places such as shopping centres, doctors, pharmacy, as well as attractions such as museums, churches, cafes, art galleries & libraries etc. within the city of *********, and participants from ********* visiting public places such as shopping centres, doctors, pharmacy, as well as attractions such as museums, churches, cafes, art galleries & libraries etc. within the city of *********.

Stage Five:
The focus groups will take place within *********. To encourage as many participants as possible, the focus groups will take place in neutral 'safe and comfortable' settings such as local community centres.

Will you be working alone or with others?

Whilst recruiting participants I will be working alone, however, I will be working in conjunction with other people (from *********) during planning stages and the user trials (stages one-four). Although I will be undertaking the interviews alone, I will have assistance from a University colleague during the focus groups.

PART 2: POTENTIAL SAFETY ISSUES/RISK ASSESSMENT (to be completed in conjunction with your supervisor)

Potential safety issues arising from proposed activity?

Interviewer & participant's personal safety:
In order to decrease the risk to personal safety all of the trials will be conducted during daylight hours. All interviews, focus groups, meeting and Information Sessions will also take place during daylight hours, and will be conducted in 'safe and comfortable' neutral surroundings, such as local community centres.

Collective & social injury:
Actual harm as a result of participation - During the user trial stages there is a slight increase in the chance of actual harm to the participants as a result of participation in the study identifiable as personal injury through trips and falls.

Becoming lost:
Becoming lost, caused by not being able to use the handheld effectively.
Breaking the handheld and not being able to find the route back.

Victims of crime:
Satellite navigation systems and mobile telephones are currently popular targets of thieves; during the trial the handheld devices will be kept visible, therefore, increasing the risk of the participants becoming victims of crime.

Person/s likely to be affected?

Interviewer & participant's personal safety:
Those taking part in the user trials stages of the study.

Collective & social injury:
All of the participants from all of the stages of the study are at some risk, however, those taking part in the user trials are at an increased risk.

Becoming lost:
Those taking part in the user trials stages of the study.

Victims of crime:
Those taking part in the user trials stages of the study.

Likelihood of risk?

Interviewer & participant's personal safety:
Low as appropriate measures will be in place by the research team to minimise the risk.

Collective & social injury:
Low if the participants are continually aware of their surroundings.

Becoming lost:
Low – most of the participants will be taking part in user trials located in fairly familiar surroundings. Those that are in unfamiliar surroundings will be given an A-Z map of the relevant city in case of emergency. Visually impaired users will be given the map in larger print. This map will be in a sealed envelope and if the participants do, for any reason, need to use it they will be asked to report back to the twenty-four hour helpline as soon as they can, they will also need to log such an occurrence in the travel diary. The participants will also be able to telephone the twenty-four hour helpline for advice if they are finding the map difficult to grasp.

Victims of crime:
Low – the participants will be informed of this risk and reminded to stay vigilant before they take part in the study. The participants will also be informed that the local Police Force have been notified of the times and location of the trials and are watchful of the potential risks. In the event of a thief targeting one of the participants for the handheld the participants will be told to simply give the thief the handheld, rather than risk any harm to themselves. If such an event happens the participants should telephone the local Police Force and then the twenty-four hour helpline.

PART 3: PRECAUTIONS/RISK REDUCTION (to be completed in conjunction with your supervisor)

Existing precautions:

- The trials and any interviews, focus groups, Information sessions and meetings will take place and allow the participants enough time to get home during daylight hours. Where appropriate the setting will be a neutral 'safe and comfortable' environment, such as a local community centre.
- The twenty-four hour helpline (staffed by *********).
- The Information Sheet which documents both the contact details for Michelle and her supervisory team.
- Remind the participants to stay aware of their surroundings.
- Give the unfamiliar travellers a sealed map.
- Remind participants to be vigilant.
- Remind participants that if they are confronted by a thief they should give up the handheld rather than risk any harm to themselves.
- Inform the local Police Force of the times and locations the trials will be running.

Proposed risk reduction strategies if existing precautions are not adequate:

- Give each participant a brightly coloured card which states the twenty-four hour helpline telephone number.

Completed by: (name)	Signature	Date
Supervisor's name:	Signature	Date

QUESTIONNAIRE

All of the information gained via this study will remain strictly confidential.
After completion, the data from these questionnaires will be entered into a computer package and statistically analysed. By completing this questionnaire you are giving your permission for the data to become part of the study, and the results to be published, however your anonymity will at all times be maintained.

Unless otherwise stated please tick one box per question

1. Gender:

   ○   1. Male
   ○   2. Female

2. Ethnicity:

   ○   1. White – British
   ○   2. White – Irish
   ○   3. Mixed heritage – White and Black Caribbean
   ○   4. Mixed heritage – White and Black African
   ○   5. Mixed heritage – White and Asian
   ○   6. Black – Caribbean
   ○   7. Black – African
   ○   8. Chinese
   ○   9. Indian
   ○   10. Pakistani
   ○   11. Bangladeshi
   ○   98. Other, please specify…………………………………………………………………………
   ○   99. Don't know

3. Please tick your highest qualification:

   ○   None
   ○   G.C.S.E or C.S.E
   ○   BTec or G.N.V.Q
   ○   A-Level
   ○   Higher Certificate or Diploma
   ○   Degree
   ○   Masters
   ○   Doctorate
   ○   98. Other, please specify…………………………………………………………………………
   ○   99. Don't know

4. Marital status:

- o 1. Single
- o 2. Married
- o 3. Civil partnership/union
- o 4. Co-habiting
- o 5. Divorced
- o 6. Widowed
- o 98. Other, please specify……………………………………………………………………………
- o 99. Don't know

5. Who do you live with?

- o 1. Alone
- o 2. With a spouse/partner & no children
- o 3. With a spouse/partner & child/children
- o 4. With a child/children and no spouse/partner
- o 5. With relatives
- o 6. With friends
- o 7. With a paid carer
- o 8. With an unpaid carer
- o 98. Other, please specify……………………………………………………………………………
- o 99. Don't know/ Not applicable

5. b. Unless you live alone, please specify your relationship to the person/people you live with, for example, mother and daughter, husband and wife or grandmother and grandson.

_____
_____
_____
_____

6. Do you live….?

- o 1. Own flat
- o 2. Own house
- o 3. Rented flat
- o 4. Rented house
- o 5. In shared accommodation with friends
- o 6. In shared accommodation with family
- o 7. In a relatives house/home
- o 8. In a nursing home
- o 98. Other, please specify……………………………………………………………………………
- o 99. Don't know

7. Are you……?

- o 1. Employed - full-time
- o 2. Employed – part-time
- o 3. Self-employed
- o 4. Unemployed
- o 5. In full-time education
- o 6. In education & employed
- o 7. Retired
- o 98. Other, please
  specify………………………………………………………………………………
- o 99. Don't know

8. Are you in receipt of a pension?

- o 1.Yes, state only
- o 2. Yes, private only
- o 3. Yes, both state and private
- o 4. No
- o 99. Don't know

9. Do you make use of technology, such as the internet and mobile telephones?

- o 1. Weekly
- o 2. Monthly
- o 3. Occasionally
- o 4. I have never had the opportunity, but would like to
- o 5. I have tried but I just can't get on with technology
- o 6. I have never wanted to
- o 99. Don't know

10. Do you own a personal computer?

- o 1. Yes, I use it all the time
- o 2. Yes, but I don't use it often
- o 3. Yes, but I never use it
- o 4. No, but I regularly access one elsewhere
- o 5. No, and I never use one
- o 99. Don't know

11. Which of the following statements best describes your use of technology?

- o 1. I have only just started to make frequent use of technology
- o 2. I have been making frequent use of technology for the past 6-12 months
- o 3. I have been making frequent use of technology for the past 2-3 years
- o 4. I have been making frequent use of technology for the past 4-6 years
- o 5. I have been making frequent use of technology for the past 7-9 years
- o 6. I have been making frequent use of technology for 10 or more years
- o 7. I very rarely make use of technology
- o 8. I never make use of technology
- o 99. Don't know

12. How would you describe yourself……?

- o Active
- o Fairly active
- o Not active
- o 99. Don't know

13. Your general health is……?

- o 1. Good
- o 2. Fairly good
- o 3. Not good
- o 99. Don't know

14. Do you have a disability? If so, please tick all of those that apply to you.

- o 1. No
- o 2. Dyslexia
- o 3. Mobility (physical disability)
- o 4. Mental Health difficulty
- o 5. Blind/Partially sighted
- o 6. Learning disability
- o 7. Chronic illness (e.g. Asthma)
- o 8. Deaf/Hard of hearing
- o 98. Other, please specify…………………………………………………………………………………
- o 99. Don't know

15. Which mode of transport do you use most frequently to travel in the urban area? Please tick one box only.

- o 1. Car
- o 2. Taxi
- o 3. Bus
- o 4. Local dial-a-ride service
- o 5. Train
- o 6. Walking
- o 7. Bicycle
- o 98. Other: please specify…………………………………………………………………………………
- o 99. Don't know

16. Which is the second most frequent mode of transport you use to travel in the urban area? Please tick one box only.

- o 1. Car
- o 2. Taxi
- o 3. Bus
- o 4. Local dial-a-ride service
- o 5. Train
- o 6. Walking
- o 7. Bicycle
- o 98. Other: please
  specify…………………………………………………………………………………
- o 99. Don't know

17.a. Do you feel the modes of transport you use to travel in urban areas meet your needs?

- o Yes
- o No
- o 99. Don't know

17.b. Please state the reason(s) why, whether you answered yes or no.

_____
_____
_____
_____
_____
_____

18.a. Do you feel the cost of the modes of transport you use to travel in urban areas is reasonable?

- o 1. Yes
- o 2. No
- o 99. Don't know

18.b. Please state the reason(s) why, whether you answered yes or no.

_____
_____
_____
_____
_____
_____

19. How often do you use the internet?

- o Daily
- o Weekly
- o Monthly
- o 4. Occasionally (6-11 times a year)
- o 5. Very occasionally (2-5 times a year)
- o 6. Only once before
- o 7. Never
- o 99. Don't know

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20. How often do you use a mobile telephone?

- o   1. Daily
- o   2. Weekly
- o   3. Monthly
- o   4. Occasionally (6-11 times a year)
- o   5. Very occasionally (2-5 times a year)
- o   6. Only once before
- o   7. Never
- o   99. Don't know

21. How often do you use a satellite navigation system, such as tom-tom?

- o   1. Daily
- o   2. Weekly
- o   3. Monthly
- o   4. Occasionally (6-11 times a year)
- o   5. Very occasionally (2-5 times a year)
- o   6. Only once before
- o   7. Never
- o   99. Don't know

22. How often do you use digital/sky television?

- o   1. Daily
- o   2. Weekly
- o   3. Monthly
- o   4. Occasionally (6-11 times a year)
- o   5. Very occasionally (2-5 times a year)
- o   6. Only once before
- o   7. Never
- o   99. Don't know

23. Would you be willing to be trained in technological devices, such as mobile telephones and satellite navigation systems?

- o   1. Yes
- o   2. Maybe
- o   3. No
- o   99. Don't know

24. Where do you usually look for information for an unfamiliar journey?

- o   1. Printed Map (e.g. A-Z)
- o   2. Satellite navigation system (such as tom-tom)
- o   3. Hand held navigational device (such as MAPPED)
- o   4. The internet
- o   5. Telephone
- o   6. Ask a friend or relative
- o   7. Don't usually look for information
- o   98. Other: please specify………………………………………………………………………………………………
- o   99. Don't know

25.a. Do you think there is adequate travel information available for your needs?

- ○ Yes
- ○ No
- ○ 99. Don't know

25.b. If no, please state what you feel is missing:

_____
_____
_____
_____
_____
_____

26.a. Would being able to easily access up-to-date travel information be useful to you??

- ○ Yes
- ○ No
- ○ 99. Don't know

26. b. Please state the reason(s) why, whether you answered yes or no.

_____
_____
_____
_____
_____
_____

27.a. Would being able to access up-to-date travel information during journeys be useful to you??

- ○ 1. Yes
- ○ 2. No
- ○ 99. Don't know

27.b. Please state the reason(s) why, whether you answered yes or no.

_____
_____
_____
_____
_____
_____

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28.a. Have you used the hand held navigational device?

- o 1. Yes, briefly
- o 2. Yes, on several occasions
- o 3. Yes, many times
- o 4. No, although I have seen what it looks like
- o 5. No, I have not seen or used the device
- o 99. Don't know

28.b. If so, do you think it could be useful?

- o 1. Very useful
- o 2. Useful in some situations
- o 3. Not useful at all
- o 98. Other: please specify…………………………………………………………………………
- o 99. Don't know

29. Are the buttons on the hand held…..?

- o 1. Too big
- o 2. Too small
- o 3. The right size
- o 98. Other: please specify……………………………………………………………………
- o 99. Don't know

30. Is the screen on the hand held….?

- o Easy to see
- o Difficult to see
- o 98. Other: please specify……………………………………………………………………
- o 99. Don't know

31. Is the navigational aid…..?

- o 1. Too big
- o 2. Too small
- o 3. The right size
- o 98. Other: please specify……………………………………………………………………
- o 99. Don't know

32. Which of the following statements do you agree with most?

- ○ 1. The hand held was easy to use
- ○ 2. The hand held was difficult to use
- ○ 3. The hand held was no use at all
- ○ 99. Don't know, please specify
  why……………………………………………………………………

33. Which of the following statements do you agree with most?

- ○ 1. I would purchase the hand held if it was available on the high street
- ○ 2. I would seriously consider purchasing the hand held if it was available on the high street
- ○ 3. If the hand held was available free of charge I would make use of the service
- ○ 4. I would never use the hand held again
- ○ 99. Don't know, please specify
  why………………………………………………………………….

34. In which ways could the design of the hand held navigational aid be improved?

_____
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35. How do you feel your travel needs within the urban environment could be better met in the future?

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36. If you have any other comments especially concerning your travel needs, the handheld navigational device, or technology more generally, please write them in the space below.

_____
_____
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_____
_____

37. What age are you? Please insert as figures into the boxes.

Thank you for participating.

TRAVEL DIARY

A. Participant details:

1. Name: 2. Age:

3. Sex: 4. Employment status:

B. Travel Diary:

QUESTION	ANSWER
5. Date:	
6. Time journey began:	
7. Time journey ended:	
8. Place visiting/ journey to:	
9. Start location:	
10. Reason for journey:	
11. Mode(s) of travel:	
12. Reason for choice of mode of travel:	
13. Travel information consulted:	
14. Reason for choice of travel information:	
15. Handheld applications used:	
16. Was the information from the handheld correct?	
17. Any problems with the handheld:	
18. Any transport problems during the journey:	
19. Any additional comments:	

INTERVIEW SCHEDULE
INTERVIEWERS GUIDE TO THE ISSUES OF CONCERN

1. WELCOME   (5 minutes)

- Summarise the study and explain how the interview data fits in.
- Reiterate confidentiality and remind the participant that where applicable a pseudonym will be used in the final report to protect their identity.

2. TRAVEL NEEDS, EXPECTATIONS & PROBLEMS   (5-10 minutes)

Issues to be covered:
- Travel needs
- Travel expectations
- Most frequently used modes of transport
- Do the available modes of transport meet individual needs
- Suggestions for future needs to be better met
- Problems experienced when travelling
- Suggestions for overcoming travel problems
- Suggestions for improving local transport and travel options

Example questions:
- Define your travel needs?
- What do you expect from a public transport service?
- Which modes of transport do you make use of? Do these modes meet your needs – how or why not?
- Do you feel your travel needs could be better met in the future? If so, how?
- Are there any specific problems that you experience when travelling?
- Can you suggest any ways of overcoming these problems or improving local transport and travel options?

3. AWARENESS, ACCESS & USE OF TECHNOLOGY   (5-10 minutes)

Issues to be covered:
- Awareness of current technological products and innovations
- Awareness of the cost of technology
- Current usage rates of technology, such as computers and mobile telephones
- Factors blocking or limiting access and/or use of technology

Example questions:
- What was the last technological product you purchased?
- Do you use a computer, if so, for what reason did you start?
- Is there anything stopping you from accessing technology?
- If any, what factors – material, social and cultural – block or limit access and use of technology?
- Under what circumstances have you discontinued using technologies?
- Are there identifiable - instrumental and expressive - modes of use?

4. TRAVEL INFORMATION   (5-10 minutes)

Issues to be covered:
- Current usage rates of travel information
- Current sources of travel information
- Suggestions for the improvement of travel information
- Suggestions for more accessible travel information

Example questions:
- Do you make use of travel information?
- If so, which sources do you use when searching for travel information – internet, a-z maps, ask a friend or relative, over the telephone, and satellite navigational devices – handheld or car based?
- Do you use these sources when planning familiar, unfamiliar, or all types of journeys?
- If not, why do you not make use of travel information?
- Do you feel that there is adequate travel information available to you?
- Could this travel information be improved, or be more accessible to you in anyway?

5. EVALUATION OF THE HANDHELD   (5-10 minutes)

Issues to be covered:
- The functionality and visual accessibility of the handheld
- Problems with the handheld
- Future use of the handheld
- Suggestions for improving the design of the handheld

Example questions:
- Is the handheld device a suitable size?
- Was the handheld device easy to use?
- Are the buttons a usable size?
- Is the screen clear enough/ readable?
- Did you experience any problems whilst using the device? If so, what type of problems – with the software, the applications, the battery life, the signal strength etc.
- Would you pay to make use of the handheld in the future? Or, would you use it if it was free of charge?
- How could the design of the handheld be improved?

6. CONCLUSION AND THANKS   (5 minutes)

- Invite participants to make any additional comments.
- Thank participants/ remind participants that all information will remain confidential.

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FOCUS GROUP SCHEDULE
FACILITATORS GUIDE TO THE ISSUES OF CONCERN

1. SHORT QUESTIONNAIRE   (5-10 minutes)

All participants must complete the short questionnaire before the focus groups begins.

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2. WELCOME & INTRODUCTIONS   (5 minutes)

- Introduce and explain the role of the facilitators.
- Summarise the study and explain how the participants fit into the research.
- Confirm confidentiality and remind the participant that where applicable a pseudonym will be used in the final report to protect their identity.
- Ask the participants to introduce themselves briefly: their name/any specific hobbies they have/which mode of transport they use most frequently, etc.

3. THE BOARD GAME: (20-40 minutes)

The participants will play a board game which draws its influence from a game already on the market entitled 'The London Underground Board Game' for which the idea is to reach all the destination stations whilst hindering your opponent's game as much as possible.

N.B. THIS IS AN IDEA YET TO BE EXPLORED & PILOTED
The current idea for this adapted version entails players (in teams of 2) successfully completing a bus journey – from one end of the board to another. During the game the players will roll a dice and move forward the appropriate number of squares. When the players land on certain squares they will be asked to pick up either a 'question card' or a 'chance card'. The 'question card' will have questions on the topics listed below, and the 'chance card' will either give them an extra turn or move them forward spaces on the board. The idea behind the 'question card' is to encourage group discussion on relevant topics, and so some of the cards will have open ended questions and the participants will be asked to 'discuss……a topic'.

- TRAVEL NEEDS, EXPECTATIONS & PROBLEMS
- AWARENESS, ACCESS & USE OF TECHNOLOGY
- TRAVEL INFORMATION

4. BREAK FOR REFRESHMENTS   (15-25 minutes)

5. EVALUATION OF THE HANDHELD   (45 minutes)

The handheld devices will be passed between the participants so that they can explore the size and possible functions. During this time the facilitator will brief the participants about what the handheld is designed to do.

Possible issues to be covered:

- What do you think about the idea of using this device to help you navigate familiar places?
- What do you think about the idea of using this device to help you navigate unfamiliar places?
- Do you think the handheld is a usable size?
- Do you think the screen is readable?
- Are the buttons a usable size?
- The functionality and visual accessibility of the handheld
- Future use of the handheld
- Would you use this handheld device – why/not?
- Suggestions for improving the design of the handheld

6. CONCLUSION AND THANKS   *(5 minutes)*

- Summarise the main points of the discussion
- Ask the participants if the summary was an accurate reflection of the discussion? Alter the summary if necessary.
- Invite the participants to make any additional comments.
- Thank participants/ remind participants that all information will remain confidential.

PARTICIPANT INFORMATION SHEET

The title of the study is:
'What role could technology play in assisting the mobility of older people?
A case study of hand held navigational devices'.

What is the purpose of the study?

The study will investigate how technology might be developed to assist, and prolong, the mobility of older people and people with disabilities. We would like to invite you to take part in a series of trials in which you will test handheld satellite navigation (sat nav.) devices. The handhelds resemble mobile phones (see the picture above), and are similar to the in-car GPS systems, such as Tom-Tom. For the purposes of this study the handheld device has been specially adapted and offers the following services:

- *Journey planning software:* tailored to match the chosen mode of travel, and (dis)ability level of the user. The output can easily be switched from pictures to sound.
- *Real-time journey information*: such as which bus stop to use and what time the next bus will arrive.
- *Points of Interest (POI):* the system informs the user if, for example, the place they are visiting has wheelchair access or provides Braille leaflets.
- *Geographically indexed accessibility information:* the system informs the user in advance if disabled access ramps are positioned, and if so where to find them, for example.
- *Disabled friendly mobile user interfaces:* for example, larger keyboards are available to visually impaired users.

The purpose of the study is to find out what people think of the devices and more importantly the services that they offer. If you agree to take part you will be assessing how easy the handheld was to use, and in reality how useful it was to you.

Do I have to take part?

No your participation is entirely voluntary. If you do decide to take part, you can withdraw from the study at any time without giving a reason.

What will I get in return for taking part?

As a thank you if you successfully complete all of the stages outlined below in this leaflet (from 'before' up to and including 'after' the trial) you will receive a £50 high street voucher.

If I decide to take part, what will I have to do and how long will it take me?

Before the trial:

- You need to attend the MAPPED training session where you will receive information and guidance on the system, get to practice using the hand held device, and ask any questions (minimum 60 minutes, however, the length of time required depends on how quickly you feel comfortable with using the technology on your own). Additional training sessions are available if you should require them.
- You will need to fill in the pre-trial questionnaire which includes some questions about yourself and some around what you think about the handheld (30-60 minutes)

During the trial:

- You can choose to make use of the handheld for the most convenient 7 of the 14 days it is being given to you. (You should aim to use the handheld for 2 or more hours on each of the days you use it)
- You will also be asked to fill in a travel diary for each day you use the handheld. You will be asked to make a note of your journey details, such as where you began and where you went, the modes of transport used, and also any problems that you experience with the handheld or whilst on your journey (15-45minutes per day). See the example below.

QUESTION	ANSWER
5. Date:	
6. Time journey began:	
7. Time journey ended:	
8. Place visiting/ journey to:	

Halfway through the trial:

- We will briefly meet with you, or if more convenient telephone you, and discuss any major problems that you are experiencing with the handheld and to make sure you are comfortable participating in the rest of the study (5-30 minutes)

At the end of the trial:

- You must hand in your completed travel diary (with at least 7 days completed) (5 minutes)

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- You will need to fill in the post-trial questionnaire which includes some questions about yourself and some around what you think about the handheld (30-60 minutes)

After the trial:

You will be required to take part in a short one-to-one interview where you will be asked questions about your experience of using the handheld, and whether you feel it could be improved in any way (30-60 minutes)

Please note: To take part in the trial you must be able to complete all of the stages outlined above (from 'before' up to and including 'after' the trial).

All of the suggested timeframes for each activity are approximations only – it may take you less or more time to complete each stage.

In order to receive the £50 voucher you must complete **all** of these stages.

What will happen to the information collected about me?

- The research team at ********* and the University of Southampton are the only organisations that will have access to the study data which will remain strictly confidential

  - As the information is collected the paper copies, notes and, audio and video tapes will be stored in a lockable cupboard. Only the research team will have access to this lockable cupboard where the information will be kept for up to 5 years until it is destroyed.

  - The interviews will be audio and video recorded, and later transcribed ready for the analysis stage

  - Any data files stored on computers will be anonymised and password protected, and therefore maybe kept indefinitely

  - You are assured that your names and addresses will not be used in any reports or written communication resulting from the study; if you are highlighted in any report a pseudonym will be used to protect your identity.

  - The major findings and outcomes of the study will be published by the MAPPED project, *********, and the University of Southampton. The findings and outcomes may also be used within academic papers, essays, dissertations, briefings, presentations and at conferences.

If I take part what rights will I have?

You will be able to ask any further questions about the study; refuse to answer any particular question or set of questions; and withdraw from the study without reason at any time. And if you leave your contact details with the researcher you will be sent a summary of the study findings, once they are available.

Who is organising and funding the research?

The study is being carried out by Michelle Heward as part fulfilment of the qualification of PhD in Social Work Studies that she is currently undertaking at the University of Southampton. The study is also being conducted as part of a larger scale research project involving *********. This project is called 'Mobilisation and Accessibility Planning for People with Disabilities' or 'MAPPED' and is funded by the European Union.

What next....?

If you would like the chance to find out more about the study, as well as ask any questions, and meet your fellow participants and the research team, we will be holding the following Information Sessions which we encourage you to attend:

SESSION ONE - INSERT PLACE & TIME

If you would like to take part in the study and are unable to attend either of the Information Sessions above please contact us via the details listed below. Thank you for taking the time to read this leaflet – we look forward to meeting you soon!

Please do not hesitate to contact us if you have any questions, or would like further information regarding the study. Please also contact us if require a copy of this leaflet in **LARGE PRINT,** or if you wish to withdraw from the study.

In the first instance please try:

Michelle Heward
Postgraduate Research Student
School of Social Sciences
Murray Building
Highfield Campus
Southampton
Hampshire
SO17 1BJ

Telephone: 02380 593317 or 07809225207
Email: michelle.heward@soton.ac.uk

Alternatively, you may contact either of the research supervisors by telephoning the University switchboard on 02380 595000 and asking for Jackie Rafferty or Maria Evandrou, or via the following email addresses, j.rafferty@soton.ac.uk or maria.evandrou@soton.ac.uk.

Any communication will be treated in the strictest confidence.

CONSENT FORM

PROJECT:
What role could technology play in assisting the mobility of older people?
- A case study of handheld navigational devices -

RESEARCHER CONTACT DETAILS:
Michelle Heward, Postgraduate Research Student, University of Southampton
Email: michelle.heward@soton.ac.uk, or telephone: 02380 593317

Please tick box

1. I confirm that I have received, read and understand the information sheet for the above study. ☐

2. I confirm that I have had the opportunity to ask questions about the study which have been answered to my satisfaction. ☐

3. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason. ☐

4. In the event of an injury caused by my participation in this study I recognise that I have no legal case for action against any of the involved parties. ☐

5. I agree to the interview/focus group being audio and video recorded. ☐

6. I agree to the use of anonymised quotes in publications. ☐

7. I understand if I do not successfully complete all of the stages of the study I will not be entitled to the £50 voucher. ☐

8. I agree to take part in the above study. ☐

Participant's name: ………………………………………………………………
(BLOCK CAPITALS)

Participant's Signature: ……………………………………………………………..

Date: ………………………………………………………………………………

Researcher's Name: ………………………………………………………………
(BLOCK CAPITALS)

Researcher's signature: ……………………………………………………………..

Date: …………………………………………………………………………………..

If you have any reservations or would like to exercise your right to withdraw from this study, please contact the researcher named above.

SPONSORED RESEARCH AGREEMENT

THIS AGREEMENT dated this   day of   2007.

Between:

(1)   ********* whose registered office/principal place of business is at Environment Department, Monument House, 5 Upper High Street, *********, *********, **** *** ("***")

and

(2)   The University of Southampton as represented by the School of Social Sciences whose administrative offices are at University Road, Highfield, Southampton, *********England S017 1BJ ("The University")

(A)   **WHEREAS** *** and the University wish to enter into a agreement for the purposes of clarifying their rights and responsibilities with regard to the research (the "Research") as defined at Appendix A to be carried out by the nominate Research Student as defined in clause 1.7 below.

(B)   **WHEREAS** The Partners have agreed that they will work together in accordance with these terms and conditions hereunder.

1   Definitions

The following terms shall have the following meanings:

1.1   **"Background Intellectual Property"** means such Intellectual Property (whether or not registered or registrable) which is legally and beneficially owned or by either party at the date of this Agreement or which shall at any time thereafter become so owned otherwise than as a result of the Project under this Agreement.

1.2   **"Contract Period"** means the period from the Effective Date to 30th September 2009.

1.3   **"Effective Date"** means 1st October 2007.

1.4   **"*********Co-ordinator"** means **** *****, ***** ***** *** *****, *********

1.5   **"Intellectual Property "** means copyrights, moral rights, trade marks, trade or business names, design rights (registered or unregistered), database rights, rights in unfair competition, rights in undisclosed or confidential information (such as know-how, trade secrets and inventions) (whether patentable or not), rights protecting goodwill and reputation, rights in licenses and consents in relation to these things and other similar intellectual property rights (whether registered or not) and any applications for these rights which may exist anywhere in the world.

1.6   **"Project"** means the Research Student's PhD project, under the direction of Jacqueline Rafferty and Prof. Maria Evandrou (the "University Supervisors") of the School of Social Sciences at the University or of such other member of staff as *** and the University shall mutually agree.

1.7   **"Research Student"** shall mean Michelle Heward.

1.8   **"Resulting Intellectual Property"** means Intellectual Property arising directly as a result of research work carried out by the University pursuant to this Agreement.

2   Obligations of the Parties

2.1   Research Student, under the supervision of the University Supervisors and in consultation with the *********Co-ordinator, shall commence the performance of the Research promptly after the commencement date of the Contract Period and shall use reasonable endeavours to perform such Research substantially in

accordance with the terms and conditions of this Agreement. *** and the University may however at any time amend the Research by mutual written agreement.

2.2 *** understands that the Research is part of the Research Student's Project and that the data it allows the Research Student access to may not be supplied to another PhD student where it would cause conflict or restrictions on the Research Student's own PhD Project.

2.3 *** shall permit the Research Student access to the MAPPED data required for the Project, including, all relevant trials data (including from ********* trials and the trials supporting the unfamiliar traveller), template questionnaire (including the right to input questions), the travel diary (including the right to input sections/questions), the interview (including the right to input questions) and the focus group (including the right to input questions).

Publication

2.4 *** recognises that it is the University's policy that the results of the Project should be published and agrees that the Research Student and University Supervisors engaged in the Project shall be permitted to present at symposia, international, national, or regional professional meetings, and to publish in journals, theses or dissertations, or otherwise of their own choosing, methods and results of the Project, provided, however that *** shall have been furnished copies of any proposed publication or presentation.

2.5 Nothing in this Agreement shall prevent the Research Student from submitting a PhD thesis to the University based on the results obtained during the course of work undertaken as part of the Research, the examination of such a thesis by examiners appointed by the University, or the deposit of such a thesis in a library of the University in accordance with the relevant procedures of the University.

Use & storage of the data

2.6 *** and the University shall keep all of the data confidential in accordance with Clause 5.

2.7 *** and the University shall keep all of the data securely stored through the use of lockable cupboards, secure networks, password protected files etc. Anonymised data can be kept in this way indefinitely; all other data must be destroyed once the Research Student graduates.

Intellectual Property

2.8 For the avoidance of doubt all Background Intellectual Property used in connection with the Project shall remain the property of the party introducing the same.

2.9 All rights to Resulting Intellectual Property under the Project shall belong to the Party that generated it. The generating Party shall grant a royalty free non-exclusive licence to the other Party to use for academic and research purposes only, notwithstanding the obligations under Clauses 4.1 and 6.

2.10 Should any Resulting Intellectual Property be conceived and/or made during the Contract Period under the Research by the University, the Parties shall negotiate mutually agreeable terms for protection and exploitation, on a case by case basis.

3 Confidentiality

3.1 For the purposes of this clause "Confidential Information" means all raw data, methodologies, Background Intellectual Property, Resulting Intellectual Property, business or commercial information owned or controlled by one party, including but not limited to specifications, drawings, tapes, discs and other computer-readable media and documents, which are disclosed by that party ("The Disclosing Party") to the other party ("the Receiving Party") for use in the Research or generated during the course of the Research.

3.2 The Receiving Party shall during the term of this Agreement and for a period of 5 years thereafter keep the Confidential Information confidential and shall not disclose the Confidential Information to any third party save for its employees, consultants and contractors and then only on a need to know basis for the purposes of the Project, without the prior permission of the Disclosing Party. Each Party undertakes to treat Confidential Information belonging to the other Party at least to the same standard it treats it own.

3.3 The Receiving Party shall incur no obligation under clause 5.2 with respect to Confidential Information which:

3.3.1 is known to the Receiving Party before the Effective Date, and not impressed already with any obligation of confidentiality to the Disclosing Party; or

3.3.2 is or becomes publicly known without the fault of the Receiving Party; or

3.3.3 is obtained by the Receiving Party from a third party in circumstances where the Receiving Party has no reason to believe that there has been a breach of an obligation of confidentiality owed to the Disclosing Party; or

3.3.4 is independently developed by the Receiving Party; or

3.3.5 is approved for release in writing by an authorised representative of the Disclosing Party; or

3.3.6 the Receiving Party is specifically required to disclose by law or pursuant to an order of any Court of competent jurisdiction.

Term and Termination

3.4 This Agreement shall commence on the Effective Date and shall continue in effect for the full duration of the Contract Period unless sooner terminated in accordance with the provisions of this Clause 7. The parties may, however, extend the term of this Agreement for additional periods as desired under mutually agreeable terms and conditions which the parties reduce to writing and sign. Either party may terminate this agreement upon ninety (90) days prior written notice to the other where it considers termination justified on the grounds that no further purpose would be served by continuing with the Project. Such notice of termination will only be given by either party after full discussion with the other party of the reasons for the proposal to give such notice.

3.5 If either party shall commit a material breach of any of the terms or conditions of this Agreement, and also shall fail to remedy such breach within ninety (90) days after the receipt of written notice from the other party, the party giving notice may, at its option and in addition to any other remedies which it may have at law or in equity, terminate this Agreement by sending notice of termination in writing to the other party to such effect, and such termination shall be effective as of the date of the receipt of such notice.

3.6 Termination of this Agreement by either party for any reason shall not affect the rights and obligations of the parties accrued prior to the effective date of termination of this Agreement. No termination of the Agreement, however effected, shall release the parties from their rights and obligations under Clauses 3, 5, 6, 7.4 and 8.

Liabilities

3.7 Whilst the University will use all reasonable skill and care to ensure the accuracy of the work performed and any information given, the University makes no warranty, express or implied, as to accuracy and will not be held responsible for any consequence arising out of any inaccuracies or omissions unless such inaccuracies or omissions are the result of negligence on the part of the University or its agents.

3.8 The parties agree and declare that the obligations of the University and its agents shall cease upon delivery of the reports and that no liability whatsoever either direct or indirect shall rest upon them for the effects of any product or process that may be produced or adopted by *** or any other party, notwithstanding that the formulation of such product or process may be based upon the findings of the Project.

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3.9 Neither party shall be liable to the other for any death or injury unless it is caused by the negligence of that party or its agents, nor shall it be liable to the other for any other loss or damage whatsoever unless it is caused by its wilful default or that of its agents.

3.10 Except as provided in Clause 8.6 the University is not liable to *** because of any representation (unless fraudulent), or any warranty (express or implied), condition or other term, or any duty at common law, or under the express terms of this Agreement, for:

   3.10.5 any loss of profits, business, contracts, opportunity, goodwill, revenues, anticipated savings, expenses, costs or other similar loss; and/or

   3.10.6 any indirect, special or consequential damages or losses (whether for loss of profits or otherwise).

3.11 The liability of the University to *** howsoever arising (including negligence) in respect of or attributable to any breach, non-observance or non-performance of this Agreement or any error or omission (except in the case of death or personal injury or fraudulent misrepresentation) shall be limited to £1 million.

3.12 If any sub-clause of this Clause 8 is held by a court of competent jurisdiction to be invalid or unenforceable under any applicable statute or rule of law then it shall be deemed to be omitted and replaced with a similar or equivalent term which is valid and enforceable.

Independent Contractor

3.13 In the performance of all services under this Agreement the University shall be deemed to be and shall be an independent contractor.

3.14 Neither party is authorised to act as agent for the other for any purpose and shall not on behalf of the other enter into any contract, warranty, or representation as to any matter. Neither shall be bound by the acts or conduct of the other.

Governing Law

This Agreement and all terms, provisions and conditions of the Project and all questions of construction, validity and performance under this Agreement shall be governed by English law and shall be subject to the exclusive jurisdiction of the English courts.

Assignment

This Agreement shall not be assigned by either party without the prior written consent of the other.

Agreement Modification

Any agreement to change the terms of this Agreement in any way shall be valid only if the change is made in writing and approved by mutual agreement of authorised representatives of the parties.

4 Notices

Any notices served by the parties under this Agreement may be delivered by hand or sent by first class, pre-paid, recorded delivery post marked for the attention of:

For ***:
**** *****,
*********,
******** ***********,
*******,
****

For the University:
Anna Navarro, School Accountant, Finance,
University of Southampton,
Highfield,
Southampton,
SO17 1BJ

5 Third party Rights

No person who is not a party to this Agreement has a right to enforce any term of this Agreement under the Contracts (Rights of Third Parties) Act 1999.

IN WITNESS WHEREOF, the parties have caused these presents to be executed in duplicate as of the day and year first above written.

SIGNED for and on behalf of the *********:

Name:

Position:

SIGNED for and on behalf of the ********:

Name:

Position:

SIGNED for and on behalf of the University of Southampton:

Name:

Position:

ACKNOWLEDGED:

Name: Miss Michelle Heward

Position: Postgraduate Research Student

ACKNOWLEDGED:	ACKNOWLEDGED:
Name: Mrs Jacqueline Rafferty	Name: Prof. Maria Evandrou
Position: Director Centre for Human Service Technology University	Position: Director Centre for Research on Ageing

ABOUT THE RESEARCH

PROJECT OVERVIEW:

The Mobilisation and Accessibility Planning for People with Disabilities (MAPPED) project is concerned with the use of handheld navigational technology, which provides users with the ability to plan excursions between any specific points, at any given time of day. The idea behind the technology is similar to the in-car satellite navigation systems (such as tom-tom), the user can type their location and a destination into the handheld device they will then be given a set of journey instructions. However, a benefit of this particular system is that the instructions can also be filtered in order to match the individual's specific mode of travel (examples being, modes of public transport such as a bus or train, a private car, walking, cycling or using a wheelchair). The user will also have access to real-time travel data for, and during, the journey (for example, the location of appropriate bus stops and real-time timetable updates), as well as information about the accessibility of different stages of the journey (such as, wheel chair access points), including the final destination. The user can also update the information on the system; if, for example, they come across a shortcut or new facilities that have been put into place. This system then supports a multitude of traveler circumstances and is designed to be disability friendly with various user specific interfaces.

PROJECT AIMS:

The aim of this project is to assess the possible impacts that such technology can have on the navigation and general mobility of different user groups. The investigation will be conducted through a series of trials designed to simulate everyday situations, with various samples of different user groups (including older people and people with disabilities). Therefore these trials will highlight a range of navigational requirements, reflecting those of the population.

More specifically Michelle's PhD research is concerned with how such technology could impact the lives of older people. The research will examine the extent to which the current transport systems meet the needs of the ageing population and whether technological innovations can in any way aid the mobility, independence and overall quality of life of older people.

Michelle's key research questions are:
- What key issues do older people face when travelling?
- What key challenges do older people face when travelling? And how could they be overcome?
- Can the provision of tailored handheld devices support the travel behaviour of older people?
- To what extent can a handheld navigational aid really be 'designed-for-all'?

DATA COLLECTION & ANALYSIS:

The User Trials:

A selection of people will use and give feedback on the handheld devices through taking part in a series of user trials. Outlined below are the stages that make up the trials, the participants that will be involved, the methods that will be used for collecting participant feedback, and for analysing this data. All of the participants involved in the trial stages one – four (see below) will have some previous experience of using technology, in the form of either a mobile telephone or the internet.

- **Stage One – The *********trial:**
This stage, which will be lead by ***, involves a purposive sample of 10 people, including Shopmobility customers from the *********area, and ******** staff, who will take part in a series of user trials. The participants will be given a handheld device for a period of 14 days, during this time they will have to make use of the handheld and record in the travel diary for at least 7 of the days, and for at least 2 hours per day. The participants will also have to complete the pre & post questionnaire and an in-depth interview after the trials (see below).

- **Stage Two - The trials with older people:**

These trials, which will be lead by Michelle, will consist of a purposive sample of 6 Older People, 3 of whom will be aged between 65 and 7 years, and 3 aged 75+ years. The participants will be given a handheld device for a period of 21 days, during this time they will have to make use of the handheld and record in the travel diary for at least 7 of the days, and for at least 2 hours per day. The participants will also have to complete the pre & post questionnaire and an in-depth interview after the trials (see below).

- **Stage Three - The ********* trials:**

The user trials based in ********* will be lead by the team at the *********; they will involve a purposive sample of 20 people with a physical or mental impairment aged between 18 and 65 years. The participants will be given a handheld device for a period of 14 days, during this time they will have to make use of the handheld and record in the travel diary for at least 7 of the days, and for at least 2 hours per day. The participants will also have to complete the pre & post questionnaire and an in-depth interview after the trials (see below).

- **Stage four – The unfamiliar traveller trials:**

The teams from ********* & *********will swap a number of participants with each other as this stage focuses on the unfamiliar traveller. Naturally the project has some financial constraints which will limit the number of participants involved within this stage. This is primarily due to the cost of swapping participants which includes the need for payment of travel, accommodation, food, and participant's time, therefore, it is realistic to expect that only one or two people from each place will be swapped over. The participants will be given a handheld device for a period of 14 days, during this time they will have to make use of the handheld and record in the travel diary for at least 7 of the days, and for at least 2 hours per day. The participants will also have to complete the pre & post questionnaire and an in-depth interview after the trials (see below).

- **Stage five – The focus groups with non-users:**

This stage will involve a purposive sample of older people taking part in focus groups. So that the participants have something in common with their fellow group members those without any previous experience of using technology (either a mobile telephone or the internet) will be in different groups to those with such experience. Two focus groups with 6-8 participants will include non-users, and two with 6-8 participants will include users of technology. Before the focus group begins a short questionnaire will be given to all of the participants, this will gauge demographic information, attitudinal information, and whether they are early or late adopters to technology etc. A board game may also be used to structure part of the focus group, questions or topics could be placed on cards or certain squares of the board, and thus, when landed on are likely to ignite discussions in those relevant areas.

Methods of data collection and plans for data analysis:

In consultation with ****, Michelle will formulate the following instruments for the purpose of data collection. Michelle will also undertake the following analysis for *********, and may access the data for her own purposes as long as it is linked to her own research or thesis submission:

- **Quantitative questionnaires:**

The study will involve two self-completion questionnaires, the pre-questionnaire, which will be filled in by each participant after they have taken part in the training session but before the trials have began, and the post-questionnaire will be completed by the participant after they have taken part in the trials. The purpose of the pre-questionnaire is to gauge the participant's opinions before using the technology, and the post-questionnaire is to measure the participant's opinions after they have used the technology. The reason for having these two, rather than a single questionnaire is to determine whether having used the technology the participants opinions have changed at all. Therefore, to aid analysis the two questionnaires will be based upon the same format of questions, although if it is felt necessary the post-questionnaire may also include additional questions. Predominantly the questionnaire will be made up of close ended questions where the participant will pick one answer per question. However, there will also be some open ended questions where the participant will need to write a sentence or two, multiple response questions where the participant can select more than one answer depending which ones apply, scale questions where the participant will pick the answer they most agree with, and a numeric entry question where the participant will enter their age in figures. The questionnaire questions will be pre-coded (where possible) for analysis which will be undertaken using the computer program Statistical Package for Social Sciences (SPSS).

- **Travel diaries:**

The participants will be asked to fill in a travel diary whilst they are taking part in the trials. The diary will allow the participants to chart certain aspects of their travel behaviour, as well as any problems they experience with the handheld etc. The researcher will analysis the travel diary by looking for common themes through thematic analysis, and will also note any other significant issues that are documented.

- **Qualitative interviews:**

The interviews will prove a chance to explore, in more detail, the main issues arising from the questionnaire data. The interview schedule is designed as a flexible topic guide with example questions, the semi-structured interviews will make use of mainly open ended questions, with closed ended questions being used if necessary. The actual interviews will be recorded onto audio tape (and possibly by video camera), and later transcribed in full. The transcription will be analysed via two methods, the computer program NVivo which will look for the most frequently used words, and by thematic analysis where the researcher will look for common themes.

- **Qualitative focus groups:**

The focus group participants will not have taken part in any of the user trials. The participants will instead be given the handheld to look at for 5-10 minutes whilst the researcher explains how it works, its functions and capabilities. The discussion will then be based upon what the participants think about the handheld – would they use it, is it a useful object, is it the right size, how could it be improved etc. The focus group schedule is designed as a flexible topic guide with example questions. Making use of open ended questions; the overall interview will be semi-structured using closed ended questions where they are deemed appropriate. The focus groups will be recorded onto audio tape (and possibly by video camera), and later transcribed in full. The transcription will be analysed via two methods, the computer program NVivo which will look for the most frequently used words, and by thematic analysis where the researcher will look for common themes.

THE EXPECTATIONS OF EACH PARTY:

Expenses / Resource Implications:

- The MAPPED project will pay £50 in gift vouchers to all of the participants that successfully complete all of the stages of the user trials, including the sample of older people
- The MAPPED project will pay reasonable travel expenses to all of the participants taking part in the user trials, including the sample of older people. These costs will be for local travel to and from *********
- The MAPPED project will pay reasonable travel expenses to Michelle for local travel costs to and from ********* as part of the recruitment & trial stages of the project

Monitoring process:

- A monthly update email will be sent from Michelle to ****; this process will begin in December 2007 and end in April 2008

Michelle's rights & expectations:

Michelle expects the following in return for her involvement with the project:

- Access to **** ******
- Access to the trials
- Access to the questionnaire(s), travel diary, interview schedule, and focus group schedule
- The right to add questions and/or sections to the questionnaire(s), travel diary, interview schedule, and focus group schedule
- The right to view and change draft editions of the questionnaire(s), travel diary, interview schedule, and focus group schedule
- The right to (as much as possible) advance notice of any changes to the project
- Michelle will seek ethical approval for the section of the project that she is personally conducting (stages two and five). *** and the ********* in ********* will seek ethical approval from their own research ethics committees for stages one, three and four.

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Access to data:

- Michelle, her supervisory team, and advisory board will have full access to the data from stages one through to five
- Individuals affiliated with the University, for the purpose of marking and/or submission of the work linked to Michelle's PhD qualification, will have full access to the data from stages one through to five, if it is deemed necessary to her completion
- Full access to the data from stage three (********* trial) will be granted to Michelle and her supervisory team no later than January 2008
- Full access to the data from stage four (unfamiliar traveller trial) will be granted to Michelle and her supervisory team no later than February 2008

If things should go wrong:

- If any of the involved parties become 'unhappy' with any aspect of the project in the first instance a meeting shall be called between **** ******, Michelle Heward, Maria Evandrou & Jacqueline Rafferty
- If the matter(s) persists a further meeting shall be called between the four individuals stated above, and if no amicable resolution is found and all of the parties agree the partnership will cease and this agreement will become void. In the event of such an occurrence the 'unhappy' party must also inform the other parties in writing within 7 days of the meeting having taken place

Outputs & Dissemination:

- Briefing sheet 1 – findings from the *********based trials – available March/April 2008, the 2-3 A4 page document will be produced by Michelle
- Briefing sheet 2 – findings from the project as a whole – available March/April 2008, the 2-3 A4 page document will be produced by Michelle
- Letter of thanks – thanking the participants and summarising the main findings of the project – will be sent in April by Michelle to all the participants that requested a copy
- Michelle will be available to present the main findings of the project back to the council and/or the relevant groups of participants so long as the timing is convenient with all parties
- Michelle will be available to present the main findings at the 2008 ASK-IT conference if suitable financial provision is meet by *********
- A copy of Michelle's PhD thesis will be available to ********* and the MAPPED project team, through Tony Brown

CONTACT DETAILS:

*********Co-Coordinator:
**** ****, *********, *********, *********, **** ***.
Email: *********************

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Prof. Maria Evandrou, Director of the Centre for Research on Ageing, University of Southampton, Murray Building Room 4101, Highfield Campus, Southampton, Hampshire, SO17 1BJ
Email: maria.evandrou@soton.ac.uk

TIMELINE FOR MAPPED PROJECT:

Outlined below are the major stages involved in the project.

OCTOBER:
- Draw up a written agreement to be signed by both parties
- Write proposal & gain ethical approval from the University
- Design questionnaire
- Design travel diary
- Design interview schedule
- Design focus group schedule
- *Continuous task* - Begin the search for participants for stage two (older people) & five (focus groups)

NOVEMBER (and possibly some of Dec):
- Stage one and three:
  - train participants
  - complete pre-trial questionnaire
  - complete travel diary
  - complete post-trial questionnaire
  - complete post-trial interview

- Input questionnaire data into SPSS
- Analyse questionnaire data for this stage
- Analyse travel diary data for this stage
- Transcribe interview recordings
- Analyse interview data for this stage using nvivo software & traditional thematic analysis methods
- Create a summary of the findings for this stage

DECEMBER (and possibly some of Jan):
- Stage four:
  - train participants
  - complete pre-trial questionnaire
  - complete travel diary
  - complete post-trial questionnaire
  - complete post-trial interview

- Input questionnaire data into SPSS
- Analyse questionnaire data for this stage
- Analyse travel diary data for this stage
- Transcribe interview recordings
- Analyse interview data for this stage using nvivo software & traditional thematic analysis methods
- Create a summary of the findings for this stage

JANUARY (and possibly some of Feb):
- Stage two:
  - train participants
  - complete pre-trial questionnaire
  - complete travel diary
  - complete post-trial questionnaire
  - complete post-trial interview

- Input questionnaire data into SPSS
- Analyse questionnaire data for this stage
- Analyse travel diary data for this stage
- Transcribe interview recordings
- Analyse interview data for this stage using nvivo software & traditional thematic analysis methods
- Create a summary of the findings for this stage

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FEBRUARY (and possibly some of March):
- Complete any unfinished data input and analysis
- Stage five - complete focus groups
- Transcribe focus group recordings
- Analyse focus group data (using nvivo software & traditional thematic analysis methods)

MARCH (and possibly some of April):

- Complete any unfinished data input and analysis
- Compile briefing paper 1 for the *********based trials
- Send briefing paper 1 to **** *****
- Draw conclusions for the project as a whole
- Compile briefing paper 2 for the project as a whole
- Send briefing paper 2 to the consortium

APRIL:
- Compile dissemination letters for participants
- Send letters to all participants

WHAT ROLE COULD TECHNOLOGY PLAY IN ASSISTING THE MOBILITY OF OLDER PEOPLE?

A case study of handheld navigational devices

**Michelle Heward, Postgraduate Research Student,
School of Social Sciences, University of Southampton**

BACKGROUND

Mobility is often constrained by a lack of financial resources (Barnes et al, 2004: 61), physical fitness levels, and access to transport. Older people experience feelings of depression, loneliness and exclusion, as their levels of mobility naturally decrease with age (Crawford and Walker, 2006: 29). According to a report by the Department of Environment, Transport and the Regions (DETR/TRaC, 2000), there are multiple ways that transport facilitates social exclusion, including spatially, physically and financially. Conversely, the Social Exclusion Unit (2003) suggest, that it is through easing the access to everyday essential places such as, work, educational establishments, healthcare practitioners, food shops, and, social, cultural and sporting activities, that transport contributes to social inclusion. As others have argued, having 'adequate motorised or personal mobility' increases access to opportunities and civic participation (Kenyon, 2006: 1), thus, transport has the potential to build a more inclusive society (Lyons and Urry, 2006: 2).

Lyons and Urry (2006: 3) suggest that due to the nature and scale of technological advances within the transport field, it is now essential for research to consider the surrounding 'social, behavioural and motivational dimensions'. As the Social Exclusion Unit (2003) state, if we consider that 'people need to know about transport', they not only need to know the services that exist, but timetable information, and also how to actually use the available services. So, this means that not only are people vastly different, but so is the information that they require. Thus, the information the individual requires needs to be individualised. How though are these individual needs to be fulfilled by the advances within the field of transport and technology?

Emerging mobile technology has the 'potential to deliver personalised information tailored to individual needs and abilities' (Fischer and Sullivan, 2002). Focusing on the capabilities of specially adapted handheld navigational aids, this study seeks to explore a potential, which ultimately, has the ability to 'support communities' through the 'promotion of the independence' of all individuals; whatever their personal needs or level of ability (Fischer and Sullivan, 2002). However, the originality of these handheld devices means that the possibility of negative outcomes and opinions is very real, therefore, this research will consider the handheld devices 'in context', thus 'anticipated and avoided, where possible' these negative outcomes (Cullen and Moran, 1992: 5). The working hypothesis of this research is that technology has the potential to improve the lives of older people, by encouraging active citizenship and discouraging social isolation through the promotion of independence.

DATA COLLECTION

The data collection stage of the study will involve the University of Southampton and ********* collaborating upon the MAPPED project. The MAPPED project is concerned with the use of handheld navigational technology, which provides users with the ability to plan excursions between any specific points, at any given time of day. The idea behind the technology is similar to the in-car satellite navigation systems (such as tom-tom), the user can type their location and a destination into the hand held device they will then be given a set of journey instructions. However, a benefit of this particular system is that the instructions can also be filtered in order to match the individual's specific mode of travel (examples being, modes of public transport such as a bus or train, a private car, walking, cycling or using a wheelchair). The user will also have access to real-time travel data for, and during, the journey (for example, the location of appropriate bus stops and real-time timetable updates), as well as information about the accessibility of different stages of the journey (such as, wheel chair access points), including the final destination. The user can also update the information on the system; if, for example, they come across a shortcut or new facilities that have been put into place. This system then supports a multitude of traveler circumstances and is designed to be disability friendly with various user specific interfaces.

DESIGN OF THE STUDY

The study is described below in five stages, however, it should be noted that they are only depicted numerically here so that it is clear exactly what is involved within each stage. During the actual study stages one and three will be conducted first and simultaneously. Stages two and four are planned to run in the same month, and it is anticipated that stage four may happen first. Therefore, to ensure the validity of the study and enable a comparison of the results from stages one to four the data collection instruments will need to have a uniform format, they will be designed and agreed upon by all parties before commencement of the first set of trials. Stage five will be the last stage of data collection.

Stage One: The initial trial will be based upon a random sample of participants, including Shopmobility customers and ********* staff. This stage will support travellers in familiar surroundings, involving participants that have some prior experience of using either a mobile telephone or the internet. The participants will use and give feedback on the handheld devices for a 5-10 day period.

Stage Two: The extended trial will involve a random sample of older people from the *********area. This stage will support travellers in familiar surroundings, involving participants that have some prior experience of using either a mobile telephone or the internet. The participants will use and give feedback on the handheld devices for a 5-10 day period.

Stage Three: In conjunction with stages one and two, there will be a selection of trials running simultaneously as part of the project; these will take place in various other cities including *********, and will be run by other partners in the project. These trials will support travellers in familiar surroundings, involving participants that have some prior experience of using either a mobile telephone or the internet. The participants will use and give feedback on the handheld devices.

Stage Four: This stage will support travellers in unfamiliar surroundings, again involving participants that have some prior experience of using either

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a mobile telephone or the internet. The city of ********* and team from *********will each swap participants, the individual will then use and give feedback on the handheld devices. The number of participants in this stage is restricted due to the financial costing of such an exercise. To enable a comparison of the results from stages one to four the data collection instruments will need to have a uniform format, they will be designed and agreed upon by all parties before commencement of the trials.

Stage Five: This stage involves a selection of focus groups with a random sample of older people, including users and non-users of technology. It is important to find participants that have not taken part in any of the other stages of this study, as the participants will not actually use the handheld devices for a specific journey. They will instead be given 5-10 minutes at the beginning of the focus group in order to explore its functions, and then be asked to comment on the concept and the device rather than the functions more specifically.

RESEARCH AIMS

The aim of the MAPPED project is to assess the possible impacts that such technology can have on the navigation and general mobility of different user groups. The investigation will be conducted through a series of trials designed to simulate everyday situations, with various samples of different user groups (including older people and people with disabilities). Therefore these trials will highlight a range of navigational requirements, reflecting those of the population.

The aim of Michelle's PhD research is to examine how such technology could impact the lives of older people. It is concerned with the extent to which the current transport systems meet the needs of the ageing population and whether technological innovations can in any way aid the mobility, independence and overall quality of life of older people. An overarching aim of this study is to highlight the paucity of empirical research in the United Kingdom regarding the three topic areas of older people, transport and technology, which this study will link through the notion of mobility. Overall, this relevant study is intended both as a contribution to social theory and debate concerned with the mobility of the ageing population, and as a source of data and insights that can contribute to the development of more effective government policies for 'more' sustainable mobility, better 'future' technological system and social inclusion.

RESEARCH QUESTIONS

The key research questions are:

- What key issues do older people face when travelling?
- What key challenges do older people face when travelling? And how could they be overcome?
- Can the provision of tailored handheld devices support the travel behaviour of older people?
- To what extent can a handheld navigational aid really be 'designed-for-all'?

RESEARCH METHODS

Lazendorf (2003: 6) states that within the field of transportation research there are few empirical studies that make use of qualitative data, this he argues, should be reconsidered if such research is to advance. Therefore, this study will employ a mix of interdisciplinary theoretical approaches, as well as qualitative and quantitative methods of data collection. The study will

utilize multiple research methods, thus, strengthening the validity of the data collected through the employment of 'method triangulation' (Denzin, cited in Gilbert, 2003: 208).

Data will be collected through the following methods: questionnaires, travel diaries, interviews and focus groups. During the user trial stages (one-four) the following instruments of data collection will be utilised. A pre and a post trial questionnaire will measure the participant's opinions and attitudes towards the technology both before and after using it; this will determine whether the participant's opinions and attitudes have changed throughout the course of making use of the technology. Travel diaries will be completed by the participants whilst they are using the handheld devices, this will facilitate the recording of certain aspects of their travel behaviour, as well as any problems they experience with the handheld etc. In-depth interviews will take place after the trials in order to explore, in more detail, the main issues arising from the questionnaire data.

After the user trials a series of focus groups will take place with both users and non-users of technology. The participants will then be asked to comment on the concept and the device, rather than its real-life functions specifically. The groups will give feedback on issues such as, what they think about the overall idea behind the technology, the size of the handheld, and whether they would use it etc.

DATA ANALYSIS Different analytical strategies will be employed throughout this study, including the analysis of quantitative data using SPSS software, and the analysis of qualitative data both thematically and using NVivo software.

OUTPUT & DISSEMINATION Data collection will start in the autumn of 2007. Outputs will include presentations at relevant conferences and academic papers. A summary of findings will be circulated to ********* in 2008. The analysis of the data and the resulting thesis will also be made available once complete.

RESEARCH TEAM *Research Student:* Michelle Heward, Postgraduate Research Student, University of Southampton, email: michelle.heward@soton.ac.uk

Supervisor: Jacqueline Rafferty, Director of the Centre for Human Service Technology, University of Southampton, email: jackie.rafferty@soton.ac.uk

Supervisor: Prof. Maria Evandrou, Director of the Centre for Research on Ageing, University of Southampton, email maria.evandrou@soton.ac.uk

Co-ordinator: **** *****, *********, email: ******************

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Appendix 4: MAPPED project - Demographic and socio-economic information questionnaire (1)

User ID: _____

MAPPED is a three year demonstration project co-financed by the European Union. The aim of MAPPED is to develop a mobile journey planner with accessibility information for disabled users.
The purpose of these trials is to provide us with first hand experiences and suggestions from users, which will ultimately be a valuable contribution for the future development of the final product.
Your involvement in this trial is greatly appreciated.

Personal Information

1. Are you...   a) Male ☐   b) Female ☐

2. Please select your age range:

a) 18 – 24 ☐   b) 25 – 34 ☐   c) 35 – 44 ☐   d) 45 – 54 ☐   e) 55 -64 ☐   d) 65 or over (*please specify*) ☐ ....

3. Are you registered disabled?   a)Yes ☐   b) No ☐

If yes, please indicate your category of disability:

a) Ambulant disabled ☐
b) Wheelchair user ☐
c) Blind or partially sighted ☐
d) Deaf or hard of hearing ☐

4. What level of care/assistance do you require, if any?

a) None ☐   b) Part time carer ☐   c) Full time carer ☐
(less than 20hrs/week)   (more than 20hrs/week)

5. Please indicate your highest qualification (*please tick one*):

a) GCSE / O level / NVQ or equivalent ☐
b) AS / A level / BTEC Diploma or equivalent ☐
c) Degree / HND / HNC equivalent or higher ☐
d) Other ☐
e) None ☐

6. Are you currently employed?   a) Yes ☐   b) No ☐

If yes, are you: a) Full time ☐   b) Part Time ☐   c) Self Employed ☐
(less than 20hrs/week)   (more than 20hrs/week)

7. What is your current/last occupation? ....
....

Thank you for your time and cooperation in helping the MAPPED Project.   Page 1 of 2

Please read the following statements and sign below.

🔒 Data Protection Act 1998.

The information you provide us with will be kept in accordance with the Data Protection Act 1998 and will only be used for the purposes of helping to improve access to all. All information is strictly confidential and no information from this questionnaire will be published which will allow an individual to be identified. This research is being carried out by ******** ********* ***** and the University of Southampton on behalf of the MAPPED Project Consortium, and no other organisation will have access to your personal data.

I have read and accepted the terms and conditions listed above and am happy for my personal data to be held for the duration of the MAPPED Project.

Please sign here: ……………………………………………………………………..

Print your name: ……………………………………………………………………..

Thank you for your time and cooperation in helping the MAPPED Project.   Page 2 of 2

Appendix 5: MAPPED project - Demographic and socio-economic information questionnaire (2)

PERSONAL INFORMATION QUESTIONNAIRE

University of Southampton

🔒 **Data Protection Act 1998.** All of the information gained via this study will remain strictly confidential and kept in accordance with the Data Protection Act 1998. This research is being carried out by the University of Southampton and ****** ****** ****** as part of the MAPPED Project. No other organisations will have access to the information you provide us. After completion, the data from these questionnaires will be entered into a computer package and statistically analysed. By completing this questionnaire you are giving your permission for the data to become part of the study. If the results are published in any form you are reassured that your anonymity will be maintained.

UNLESS OTHERWISE STATED PLEASE TICK ONE ANSWER PER QUESTION

User ID: _____

Q1. DATE: _____ / _____ / _____

Q2. GENDER:

1. Male   2. Female
   ○   ○

Q3a. ARE YOU REGISTERED DISABLED:

1. Yes   2. No
   ○   ○

Q3b. IF YES, PLEASE INDICATE YOUR CATEGORY OF DISABILITY:

○   1. Ambulant disabled
○   2. Wheelchair user
○   3. Blind or partially sighted
○   4. Deaf or hard of hearing
○   98. Other, please specify…………………………………………………………….....

Q3c. IF NO, WOULD YOU CONSIDER YOURSELF TO HAVE A DISABILITY ALTHOUGH YOU ARE NOT REGISTERED DISABLED?

1. Yes   2. No
   ○   ○

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Q4. DO YOU REQUIRE ANY LEVEL OF CARE OR ASSISTANCE?

- ○ 1. None
- ○ 2. Part time carer (less than 20hrs/week)
- ○ 3. Full time carer (more than 20hrs/week)
- ○ 98. Other, please specify…………...................…………………………………………………………

Q5. PLEASE INDICATE YOUR HIGHEST QUALIFICATION:

- ○ 1. GCSE / O level / NVQ or equivalent
- ○ 2. AS / A level / BTEC Diploma or equivalent
- ○ 3. Degree / HND / HNC equivalent or higher
- ○ 4. None
- ○ 98. Other, please specify…………...................…………………………………………………………

Q6. ARE YOU CURRENTLY…….?

- ○ 1. Employed - full-time
- ○ 2. Employed – part-time (less than 20hrs/week)
- ○ 3. Self-employed
- ○ 4. Unemployed
- ○ 5. In full-time education
- ○ 6. In education & employed
- ○ 7. Retired
- ○ 98. Other, please specify……………………………………………………………………………..
- ○ 99. Don't know

Q7. WHAT IS YOUR CURRENT, OR WAS YOUR LAST, OCCUPATION? …………………………………
………..
………..
………..
………..
………..

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Q8. ETHNICITY:

- ○ 1. White – British
- ○ 2. White – Irish
- ○ 3. Mixed heritage – White and Black Caribbean
- ○ 4. Mixed heritage – White and Black African
- ○ 5. Mixed heritage – White and Asian
- ○ 6. Black – Caribbean
- ○ 7. Black – African
- ○ 8. Chinese
- ○ 9. Indian
- ○ 10. Pakistani
- ○ 11. Bangladeshi
- ○ 98. Other, please specify………………………………………………………………....
- ○ 99. Don't know

Q9. MARITAL STATUS:

- ○ 1. Single
- ○ 2. Married
- ○ 3. Civil partnership/union
- ○ 4. Co-habiting
- ○ 5. Divorced
- ○ 6. Separated
- ○ 7. Widowed
- ○ 98. Other, please specify………………………………………………………………....
- ○ 99. Don't know

Q10. DO YOU LIVE……?

- ○ 1. Alone
- ○ 2. With a spouse/partner & no children
- ○ 3. With a spouse/partner & child/children
- ○ 4. With a child/children and no spouse/partner
- ○ 5. With relatives
- ○ 6. With friends
- ○ 7. With a paid carer
- ○ 8. With an unpaid carer
- ○ 98. Other, please specify………………………………………………………………....
- ○ 99. Don't know/ Not applicable

3

Q11. UNLESS YOU LIVE ALONE, PLEASE SPECIFY YOUR RELATIONSHIP TO THE PERSON/PEOPLE YOU LIVE WITH. (For example, mother and daughter, husband and wife or grandmother and grandson). ....

....

....

....

Q12. DO YOU LIVE IN.....?

- ○ 1. Own flat
- ○ 2. Own house
- ○ 3. Rented flat
- ○ 4. Rented house
- ○ 5. Shared accommodation with friends
- ○ 6. Shared accommodation with family
- ○ 7. A relative's house/home
- ○ 8. A nursing home
- ○ 98. Other, please specify..
- ○ 99. Don't know

Q13. ARE YOU IN RECEIPT OF A PENSION?

- ○ 1. Yes, state only
- ○ 2. Yes, private only
- ○ 3. Yes, both state and private
- ○ 4. No
- ○ 99. Don't know

Q14. HOW OFTEN DO YOU MAKE USE OF TECHNOLOY SUCH AS THE INTERNET AND MOBILE TELEPHONES?

- ○ 1. Daily
- ○ 2. Weekly
- ○ 3. Monthly
- ○ 4. Occasionally
- ○ 5. I have never had the opportunity, but would like to
- ○ 6. I have tried but I just can't get on with technology
- ○ 7. I have never wanted to
- ○ 99. Don't know

Q15. HOW WOULD YOU DESCRIBE YOURSELF?

1. Active	2. Fairly active	3. Not active	99. Don't know
○	○	○	○

4

Q16. HOW WOULD YOU DESCRIBE YOUR GENERAL HEALTH?

1. Good	2. Fairly good	3. Not good	99. Don't know
○	○	○	○

Q17. DO YOU FEEL THE COST OF THE MODES OF TRANSPORT YOU USE TO TRAVEL IN URBAN AREAS IS REASONABLE?

1. Yes	2. No	99. Don't know
○	○	○

Q18. PLEASE STATE THE REASON(S) FOR YOUR ANSWER TO Q17. ....
....
....
....

Q19. WOULD YOU BE WILLING TO BE TRAINED IN TECHNOLOGICAL DEVICES, SUCH AS MOBILE TELEPHONES AND SATELLITE NAVIGATION SYSTEMS?

1. Yes	2. Maybe	3. No	99. Don't know
○	○	○	○

Q20. IF YOU WERE GOING ON AN UNFAMILIAR JOURNEY WHERE WOULD YOU USUALLY LOOK FOR INFORMATION?

- ○ 1. Printed Map (e.g. A-Z)
- ○ 2. Satellite navigation system (such as tom-tom)
- ○ 3. Hand held navigational device (such as MAPPED)
- ○ 4. The internet
- ○ 5. Telephone
- ○ 6. Ask a friend or relative
- ○ 7. Don't usually look for information
- ○ 98. Other: please specify...
- ○ 99. Don't know

Q21. WOULD BEING ABLE TO EASILY ACCESS UP-TO-DATE TRAVEL INFORMATION BE USEFUL TO YOU?

1. Yes	2. No	99. Don't know
○	○	○

Q22. PLEASE STATE THE REASON(S) FOR YOUR ANSWER TO Q21. ....
....
....
....

5

Q23. WOULD BEING ABLE TO ACCESS UP-TO-DATE TRAVEL INFORMATION DURING JOURNEYS BE USEFUL TO YOU?

1. Yes   2. No   99. Don't know
   ○   ○   ○

Q24. PLEASE STATE THE REASON(S) FOR YOUR ANSWER TO Q23. …………………………….
………..
………..
………..

Q25. WHAT AGE ARE YOU? (Please insert as figures into the boxes below)

Thank you for time and valuable input

Appendix 6: MAPPED project - Before trial questionnaire (1)

mapped

User ID:

Before-trial Survey

Questionnaire to be asked before the user begins their trial

Please tick ONE response for each question, unless instructed otherwise.

1. Which of the following statements best describes your use of technology?
(e.g. computers, internet, mobile phones, GPS navigation systems etc.)

a) I have only just started to make frequent use of technology *(at least once a week)*

b) I have been making frequent use of technology for the past 6 – 12 months

c) I have been making frequent use of technology for the past 1 – 5 years

d) I have been making frequent use of technology for the past 5 years or more

e) I occasionally make use of technology *(at least once a month)*

f) I very rarely make use of technology *(less than once a month)*

g) I have never had the opportunity, but would like to try using technology

h) I have tried, but can't get on with technology

i) I have never wanted to try using technology

j) Don't know

2. Do you own a personal computer (PC), and how often do you use one?

a) Yes, and I frequently use it *(at least once a week)*

b) Yes, and I occasionally use it *(at least once a month)*

c) Yes, but I rarely use it *(less than once a month)*

d) Yes, but I never use it

e) No, but I regularly access one elsewhere *(at least once a month)*

f) No, but I sometimes access one elsewhere *(less than once a month)*

g) No, and I never use one

h) Don't know

3. Is your PC connected to the internet, and how often do you use the internet?

a) Yes, and I frequently use it *(at least once a week)*

b) Yes, and I occasionally use it *(at least once a month)*

c) Yes, but I rarely use it *(less than once a month)*

d) Yes, but I never use it

e) No, but I regularly access the internet elsewhere *(at least once a month)* ☐

f) No, but I sometimes access the internet elsewhere *(less than once a month)* ☐

g) No, and I never use the internet ☐

h) Don't know ☐

4. Do you own a mobile telephone, and how often do you use one?

a) Yes, and I frequently use it *(at least once a week)* ☐

b) Yes, and I occasionally use it *(at least once a month)* ☐

c) Yes, but I rarely use it *(less than once a month)* ☐

d) Yes, but I never use it ☐

e) No, but I regularly use a work/friend's mobile phone *(at least once a month)* ☐

f) No, but I sometimes use a work/friend's mobile phone *(less than once a month)* ☐

g) No, and I never use one ☐

h) Don't know ☐

5. Do you own a satellite navigation system, such as Tom-Tom, and how often do you use one?

a) Yes, and I frequently use it *(at least once a week)* ☐

b) Yes, and I occasionally use it *(at least once a month)* ☐

c) Yes, but I rarely use it *(less than once a month)* ☐

d) Yes, but I never use it ☐

e) No, but I regularly use a work/friend's system *(at least once a month)* ☐

f) No, but I sometimes use a work/friend's system *(less than once a month)* ☐

g) No, and I never use one ☐

h) Don't know ☐

6. Please indicate how often you use each of the following types of transport when travelling within an urban area such as Winchester: *(please tick ONE response per row)*

	Always	Frequently *(at least once a week)*	Occasionally *(at least once a month)*	Rarely *(less than once a month)*	Never	Don't know
a) Private Car						
b) Bus						
c) Train						
d) Taxi						
e) Dial-a-Ride						
f) Walk						
g) Bicycle						
h) Other *(please specify)*						

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9. Do you feel there is adequate travel information available for you to plan a journey?

    a)   Yes

    b)   No

    c)   Don't know

If no, please state how you think it could be improved: ………...……………………………………………

……

……

10. If you get lost during a journey, where do you usually find travel information to help you?
(please tick ONE response per row)

	Always	Regularly	Occasionally	Rarely	Never	Don't know
a) Printed map						
b) Public transport timetable						
c) Satellite navigation system						
d) Hand held GPS						
e) The internet						
f) Telephone service						
g) Ask someone						
h) Nowhere						
i) Other *(please specify)* …………………………						

11. Imagine having a Personal Digital Assistant (PDA/smart phone) route planner that could help you plan your trip and allow you to access up-to-date travel information before and during your journey. Would that be of use to you?

    a)   Yes

    b)   No

    c)   Don't know

Please state the reason for your answer: ………………………………………………………………...……………

……

……

12. Would having a PDA route planner encourage you to use public transport more often?

a) Definitely b) Maybe c) Probably Not d) Definitely Not e) Don't Know

☐ ☐ ☐ ☐ ☐

13. If a similar route planner was available on your existing mobile phone would you use it?

a) Definitely b) Maybe c) Probably Not d) Definitely Not e) Don't Know

☐ ☐ ☐ ☐ ☐

14. Would you pay for a mobile route planning service such as MAPPED, and if so, how much?

a) Yes, more than £10 per month ☐
b) Yes, between £5 and £10 per month ☐
c) Yes, less than £5 per month ☐
d) No, I would only use it if it was free of charge ☐
e) No, I would not pay anything and I would not use it at all ☐
f) Don't Know ☐
g) Other (please specify): ☐

………………………………………...…………………………………

15. Which of the following statements best describes your initial thoughts about using the MAPPED PDA and software?

a) I think the PDA and software will be easy to use ☐
b) I think the PDA and software will be difficult to use ☐
c) I think the PDA and software will be neither easy nor difficult to use ☐
d) I think the PDA and software will be impossible for me to use ☐
e) Don't know ☐
f) Other (please specify): ☐

………………………………………………………………………

16. For what reason do you most frequently make a journey?

a) For work ☐
b) For study ☐
c) Shopping ☐
d) To visit relatives/friends ☐
e) Other (please specify): ☐

………………………………………………………………………………………………..…………
………………………………………………………………………………………..…………………
………………………………………………………………………………………………………..

17. Thinking about your most frequent journeys in Q16, please indicate the normal start and end point of the outward leg of these journeys:

		Start	End
a)	Winchester city centre	☐	☐
b)	Winchester suburbs	☐	☐
c)	Surrounding districts	☐	☐
d)	Don't know	☐	☐
e)	Other (please specify):	☐	☐

……………………………………   …………………………………………..

18. Do you always take the same route, when making your most frequent journeys, or do you choose alternatives?

a) I always take the same route ☐
b) I occasionally choose alternatives
c) I regularly choose alternatives
d) Don't know

19. How often do you change between public transport service during the course of an average single trip in an urban area?

a) I don't use public transport in the urban area ☐
b) Once
c) Twice
d) 3 times or more
e) I don't make any changes
f) Don't know

20. How far are you prepared to walk during the course of your journey in an urban area?
(please tick ONE response per row)

	From departure point to first public transport stop	Between public transport stops	From final public transport stop or car park to your destination
Less than 100 m			
Between 100 - 250 m			
Between 250 - 500 m			
More than 500 m			
Not prepared / unable to walk any distance			

Thank you for your time and cooperation in helping the MAPPED Project

Appendix 7: MAPPED project - Before trial questionnaire (2)

BEFORE TRIAL QUESTIONNAIRE

🔓 Data Protection Act 1998. All of the information gained via this study will remain strictly confidential and kept in accordance with the Data Protection Act 1998. This research is being carried out by the University of Southampton and ******* ***** ***** as part of the MAPPED Project. No other organisations will have access to the information you provide us. After completion, the data from these questionnaires will be entered into a computer package and statistically analysed. By completing this questionnaire you are giving your permission for the data to become part of the study. If the results are published in any form you are reassured that your anonymity will be maintained.

This questionnaire should be completed by participants before they take part in the trials.

The purpose of the trials is to provide the first hand experiences and suggestions of various user groups as a valued contribution to the future development of the final product.

UNLESS OTHERWISE STATED PLEASE TICK ONE ANSWER PER QUESTION

User ID:

Q1. DATE: _____/_____/_____

Q2. WHICH OF THE FOLLOWING STATEMENTS BEST DESCRIBES YOUR USE OF TECHNOLOGY? (i.e. the internet, mobile phones etc.)

- ○ 1. I have only just started to make frequent use of technology *(at least once a week)*
- ○ 2. I have been making frequent use of technology for the past 6 – 12 months
- ○ 3. I have been making frequent use of technology for the past 1 – 5 years
- ○ 4. I have been making frequent use of technology for the past 5 years or more
- ○ 5. I occasionally make use of technology *(at least once a month)*
- ○ 6. I very rarely make use of technology *(less than once a month)*
- ○ 7. I have never had the opportunity, but would like to try using technology
- ○ 8. I have tried, but can't get on with technology
- ○ 9. I have never wanted to try using technology
- ○ 99. I don't know

Q6. DO YOU OWN A SATELLITE NAVIGATION SYSTEM, SUCH AS TOM-TOM, AND HOW OFTEN DO YOU USE ONE?

- ◯ 1. Yes, and I frequently use it *(at least once a week)*
- ◯ 2. Yes, and I occasionally use it *(at least once a month)*
- ◯ 3. Yes, but I rarely use it *(less than once a month)*
- ◯ 4. Yes, but I never use it
- ◯ 5. No, but I regularly use a work/friend's system *(at least once a month)*
- ◯ 6. No, but I sometimes use a work/friend's system *(less than once a month)*
- ◯ 7. No, and I never use one
- ◯ 99. Don't know

Q7. PLEASE INDICATE HOW OFTEN YOU USE EACH OF THE FOLLOWING TYPES OF TRANSPORT WHEN TRAVELLING WITHIN AN URBAN AREA SUCH AS WINCHESTER

(please tick ONE response per row)

	1. Always	2. Frequently (at least once a week)	3. Occasionally (at least once a month)	4. Rarely (less than once a month)	5. Never	99. Don't know	Reason(s)
a) Private Car	◯	◯	◯	◯	◯	◯	
b) Bus	◯	◯	◯	◯	◯	◯	
c) Train	◯	◯	◯	◯	◯	◯	
d) Taxi	◯	◯	◯	◯	◯	◯	
e) Dial-a-Ride	◯	◯	◯	◯	◯	◯	
f) Walk	◯	◯	◯	◯	◯	◯	
g) Bicycle	◯	◯	◯	◯	◯	◯	
h) Other *(please specify)* …………………………	◯	◯	◯	◯	◯	◯	

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Q8. REGARDING THESE MODES OF TRANSPORT, PLEASE INDICATE HOW SATISFIED YOU ARE THAT EACH OF THEM MEETS YOUR TRAVEL REQUIREMENTS WITHIN AN URBAN AREA SUCH AS WINCHESTER, AND EXPLAIN WHY YOU FEEL THIS WAY *(please tick ONE response per row, and also insert a reason for each answer)*

	1. Very Satisfied	2. Fairly Satisfied	3. Indifferent	4. Fairly Dissatisfied	5. Very Dissatisfied	99. Don't know	Reason(s)
a) Private Car	○	○	○	○	○	○	
b) Bus	○	○	○	○	○	○	
c) Train	○	○	○	○	○	○	
d) Taxi	○	○	○	○	○	○	
e) Dial-a-Ride	○	○	○	○	○	○	
f) Walk	○	○	○	○	○	○	
g) Bicycle	○	○	○	○	○	○	
h) Other *(please specify)*	○	○	○	○	○	○	

Q9. WHEN PLANNING AN UNFAMILIAR JOURNEY, WHERE DO YOU USUALLY FIND INFORMATION? *(please tick ONE response per row)*

	1. Always	2. Regularly	3. Occasionally	4. Rarely	5. Never	99. Don't know
a) Printed map	○	○	○	○	○	○
b) Public transport timetable	○	○	○	○	○	○
c) Satellite navigational system	○	○	○	○	○	○
d) Hand held PS	○	○	○	○	○	○
e) The internet	○	○	○	○	○	○
f) Telephone service	○	○	○	○	○	○
g) Ask a friend or relative	○	○	○	○	○	○
h) Don't plan the journey	○	○	○	○	○	○
1) Other *(please specify)*	○	○	○	○	○	○

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Q10a. DO YOU FEEL THERE IS ADEQUATE TRAVEL INFORMATION AVAILABLE FOR YOU TO PLAN A JOURNEY?

1. Yes   2. No   99. Don't know
  ○   ○   ○

Q10b. PLEASE STATE THE REASON(S) FOR YOUR ANSWER TO Q10a. …………………………..

………..

………..

……..

………..

Q11. IF YOU GET LOST DURING A JOURNEY, WHERE DO YOU USUALLY FIND TRAVEL INFORMATION TO HELP YOU?

(Please tick ONE response per row)

	1. Always	2. Regularly	3. Occasionally	4. Rarely	5. Never	99. Don't know
a) Printed map	○	○	○	○	○	○
b) Public transport timetable	○	○	○	○	○	○
c) Satellite navigational system	○	○	○	○	○	○
d) Hand held PS	○	○	○	○	○	○
e) The internet	○	○	○	○	○	○
f) Telephone service	○	○	○	○	○	○
g) Ask someone	○	○	○	○	○	○
h) No where	○	○	○	○	○	○
1) Other *(please specify)* …………………………………	○	○	○	○	○	○

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Q12a. IMAGINE HAVING A PERSONAL DIGITAL ASSISTANT (PDA/SMART PHONE) ROUTE PLANNER THAT COULD HELP YOU PLAN YOUR TRIP AND ALLOW YOU TO ACCESS UP-TO-DATE TRAVEL INFORMATION BEFORE AND DURING YOUR JOURNEY. WOULD THAT BE OF USE TO YOU?

1. Yes   2. No   99. Don't know
   ○   ○   ○

Q12b. PLEASE STATE THE REASON(S) FOR YOUR ANSWER TO Q12a. ....
....
....
....
....

Q13. WOULD HAVING A PDA ROUTE PLANNER ENCOURAGE YOU TO USE PUBLIC TRANSPORT MORE OFTEN?

1. Definitely   2. Maybe   3. Probably Not   4. Definitely Not   99.Don't Know
     ○   ○   ○   ○   ○

Q14. IF A SIMILAR ROUTE PLANNER WAS AVAILABLE ON YOUR EXISTING MOBILE PHONE WOULD YOU USE IT?

1. Definitely   2. Maybe   3. Probably Not   4. Definitely Not   99.Don't Know
     ○   ○   ○   ○   ○

Q15. WOULD YOU PAY FOR A MOBILE ROUTE PLANNING SERVICE SUCH AS MAPPED, AND IF SO, HOW MUCH?

○   1. Yes, more than £10 per month
○   2. Yes, between £5 and £10 per month
○   3. Yes, less than £5 per month
○   4. No, I would only use it if it was free of charge
○   5. No, I would not pay anything and I would not use it at all
○   98. Other, *please specify* ....
○   99. Don't Know

6

Q16. WHICH OF THE FOLLOWING STATEMENTS BEST DESCRIBES YOUR INITIAL THOUGHTS ABOUT USING THE MAPPED PDA AND SOFTWARE?

- ❍ 1. I think the PDA and software will be easy to use
- ❍ 2. I think the PDA and software will be difficult to use
- ❍ 3. I think the PDA and software will be neither easy nor difficult to use
- ❍ 4. I think the PDA and software will be impossible for me to use
- ❍ 98. Other, please specify …………………………………………………………………………
- ❍ 99. Don't know

Q17. FOR WHAT REASON DO YOU MOST FREQUENTLY MAKE A JOURNEY?

- ❍ 1. For work
- ❍ 2. For study
- ❍ 3. Shopping
- ❍ 4. To visit relatives/friends
- ❍ 98. Other, *please specify* …………………………………………………………………………

Q18. THINKING ABOUT YOUR MOST FREQUENT JOURNEYS IN Q16, PLEASE INDICATE THE NORMAL START AND END POINT OF THE OUTWARD LEG OF THESE JOURNEYS:

		Start	End
1.	Winchester city centre	❍	❍
2.	Winchester suburbs	❍	❍
3.	Surrounding districts	❍	❍
99.	Don't know	❍	❍
98.	Other, *please specify*	❍	❍

………………………………………… …………………………………………..

………………………………………… …………………………………………..

………………………………………… …………………………………………..

Q19. DO YOU ALWAYS TAKE THE SAME ROUTE, WHEN MAKING YOUR MOST FREQUENT JOURNEYS, OR DO YOU CHOOSE ALTERNATIVES?

- ❍ 1. I always take the same route
- ❍ 2. I occasionally choose alternatives
- ❍ 3. I regularly choose alternatives
- ❍ 99. Don't know

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Q20. HOW OFTEN DO YOU CHANGE BETWEEN PUBLIC TRANSPORT SERVICES DURING THE COURSE OF AN AVERAGE SINGLE TRIP IN AN URBAN AREA?

- ○ 1. I don't use public transport in the urban area
- ○ 2. Once
- ○ 3. Twice
- ○ 4. 3 times or more
- ○ 5. I don't make any changes
- ○ 99. Don't know

Q21. HOW FAR ARE YOU PREPARED TO WALK DURING THE COURSE OF YOUR JOURNEY IN AN URBAN AREA?
(please tick ONE response per row)

	1. From departure point to first public transport stop	2. Between public transport stops	3. From final public transport stop or car park to your destination
a) Less than 100m	○	○	○
b) Between 100-250m	○	○	○
c) Between 250-500m	○	○	○
d) More than 500m	○	○	○
e) Not prepared/unable to walk any distance	○	○	○

THANK YOU FOR YOUR TIME AND VALUABLE INPUT.

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Appendix 8: MAPPED project - Travel diary (1)

User ID: [   ]

Travel Diary

Fill in this diary starting on the first day of your assigned trial. Please complete a separate travel diary for each trip that you make during your trial. A trip is when you travel from one location to another **including** a visit to a Point Of Interest (POI). Do not include stopping to change mode of transport as the end of a trip, record all parts of a journey on one page of your trip diary. **Only** record trips which you make using the MAPPED journey planner in **********.

Your trial details:

Dates:

From   **To**

Points Of Interest (POIs) to visit:

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

Thank you for your time and cooperation in helping the MAPPED Project. If you require any assistance during your trial please contact ****** ***** (on ***** *******) or ******* ******* (***** ******).**

Thank you for your time and cooperation in helping the MAPPED Project.   Page 1 of 2

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User ID: [_____]

I. Date: _____ / _____ / _____

2. Day *(please tick one)*

a) Monday   b) Tuesday   c) Wednesday   d) Thursday   e) Friday   f) Saturday   g) Sunday

☐   ☐   ☐   ☐   ☐   ☐   ☐

3. Weather conditions *(please tick all that apply)*

a) Sunny   b) Overcast   c) Raining   d) Light   e) Dark   f) Other

☐   ☐   ☐   ☐   ☐   ☐

If other, please specify ....

4. Where did you start your trip? ....

5. What time did you start your trip? _____ : _____ AM / PM

6. Where did you end your trip? ....

7. What time did you end your trip? _____ : _____ AM / PM

8. What mode of transport did you use? ....

Service Number: ....

Route: ....

9. How would you rate the accuracy of the route planning information provided? *(please tick one)*

a) Excellent   b) Good   c) Average   d) Poor   e) Very Bad   f) Don't Know

☐   ☐   ☐   ☐   ☐   ☐

10. Which Point Of Interest (POI) did you visit? ....

11. How would you rate the quality of the information provided about this POI? *(please tick one)*

a) Excellent   b) Good   c) Average   d) Poor   e) Very Bad   f) Don't Know

☐   ☐   ☐   ☐   ☐   ☐

12. How would you rate the performance of the PDA on this trip? *(please tick one)*

a) Excellent   b) Good   c) Average   d) Poor   e) Very Bad   f) Don't Know

☐   ☐   ☐   ☐   ☐   ☐

13. Any other comments? ....

....

....

....

....

Thank you for your time and cooperation in helping the MAPPED Project.   Page 2 of 2

Appendix 9: MAPPED project - Travel diary (2)

Q7. WHICH POINT OF INTEREST POINT OF INTEREST (POI) DID YOU VISIT? (if applicable)...
....
....
....
....

Q8. WHERE DID YOU END YOUR TRIP? ....

Q9. WHAT TIME DID YOU END YOUR TRIP? _____:_____ AM / PM

Q10. WHAT MODE(S) OF TRANSPORT DID YOU USE? (Include service number and route, if applicable) ....
....

Service Number: ....

Route:...
....
....

Q11. REASON FOR CHOICE OF MODE(S) OF TRAVEL? (tick all that apply)

1. Quickest   2. Cheapest   3. Easiest   4. No changes   98. Other
◯   ◯   ◯   ◯   ◯ *Please specify*..........................

Q12. WHICH OF THE HAND HELD'S APPLICATIONS DID YOU USE? (tick all that apply)

◯   1. Route planner without disability specific info
◯   2. Route planner with disability specific info
◯   3. Point Of Interest
◯   4. Accessibility Information
◯   98. Other, please specify..

2

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Q13. HOW WOULD YOU RATE THE ACCURACY OF THE ROUTE PLANNING INFORMATION PROVIDED?

1. Excellent	2. Good	3. Average	4. Poor	5. Very bad	99. Don't know
○	○	○	○	○	○

Q14. HOW WOULD YOU RATE THE QUALITY OF THE INFORMATION PROVIDED ABOUT THIS POI?

1. Excellent	2. Good	3. Average	4. Poor	5. Very bad	99. Don't know
○	○	○	○	○	○

Q15. HOW WOULD YOU RATE THE PERFORMANCE OF THE PDA (HAND HELD) ON THIS TRIP?

1. Excellent	2. Good	3. Average	4. Poor	5. Very bad	99. Don't know
○	○	○	○	○	○

Q16. DID YOU NEED TO CONSULT ANY OTHER SOURCES OF TRAVEL INFORMATION OTHER THAN THE HAND HELD DURING THIS TRIP? IF SO, WHICH OTHER SOURCES, AND WHY? ....

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Other sources consulted:..

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Reasons why consulted:...

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Q17. DID YOU EXPERIENCE ANY SPECIFIC PROBLEMS WITH THE HAND HELD DURING THIS TRIP? ....

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Q18. DID YOU EXPERIENCE ANY SPECIFIC TRANSPORT ISSUES DURING THIS TRIP? ....

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Q19. ANY OTHER COMMENTS OR SUGGESTIONS? ....

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NOTES: ....

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THANK YOU FOR YOUR TIME & VALUABLE INPUT.

Appendix 10: MAPPED project - After trial questionnaire (1)

mapped

User ID: [   ]

MAPPED is a three year demonstration project co-financed by the European Union. MAPPED aims to develop a mobile journey planner and accessibility information for disabled users.

The purpose of these trials is to provide first hand experiences and suggestions from users which will be a valuable contribution in the future development of the final product.

Your involvement in this trial is greatly appreciated.

After-trial Survey

Questionnaire to be filled in after the user has completed their trial..

Please tick ONE response for each question, unless instructed otherwise.

1. How would you rate your overall satisfaction with using the Personal Digital Assistant (PDA)?

a) Very satisfied ☐
b) Fairly satisfied ☐
c) Indifferent ☐
d) Fairly dissatisfied ☐
e) Very dissatisfied ☐
f) Don't know ☐

2. Please give reasons for your choice of rating in Q1? ……………………………………………….

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3. Regarding your use of the MAPPED PDA and software, please indicate your degree of satisfaction with the following factors, and explain why you felt this way?

(please tick ONE response per row, and insert a reason for each answer)

	Very Satisfied	Fairly Satisfied	Indifferent	Fairly Dissatisfied	Very Dissatisfied	Don't know	Reasons
a) Ease of learning							
b) Ease of use							
c) Speed of response/suggestions							
d) Overall usefulness of the route planner							
e) Usefulness of walking route information							
f) Usefulness of information on arrival times at stops							
g) Usefulness of information on choice of public transport services							
h) Credibility/reliability of suggested routes							
i) Accuracy of information							
j) Accessibility information/Points Of Interest (POIs)							
k) GPS reliability/connectivity							
l) Audio facility clarity/reliability							

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4. Regarding the ease of use of the PDA, please indicate your degree of satisfaction with the following, and explain why you felt this way?
(please tick ONE response per row and insert a reason for each answer)

	Very Satisfied	Fairly Satisfied	Indifferent	Fairly Dissatisfied	Very Dissatisfied	Don't Know	Reasons
a) System start-up / opening of MAPPED software							
b) Route planning menu							
c) Points Of Interest database							

5. Which of the following options best describes the level of detail of the information provided by the MAPPED software?

a) Excessive   b) Accurate   c) Sufficient   d) Basic   e) Confusing   f) Incomplete   g) Don't know

☐   ☐   ☐   ☐   ☐   ☐   ☐

6. How would you describe the buttons on the PDA?

a) Too big ☐   b) Too small ☐   c) The right size ☐   d) Don't know ☐

Any other comments about the buttons?…………………………………………………………………………………

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7. How would you describe the screen on the PDA?

a) Easy to see ☐   b) Difficult to see ☐   c) Don't Know ☐

Any other comments about the screen? …...………………………...……………………………………………………

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8. How would you rate the usefulness and clarity of the instructions provided?

a) Very useful and easy to understand   ☐
b) Quite useful, but could have been clearer
c) Not very useful and difficult to understand
d) Misleading and unclear
e) Don't Know

Any other comments about the usefulness and clarity of the instructions provided? …………………………....

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9. Did you find it easier to use the MAPPED PDA and software as your trial progressed?

a) Yes ☐   b) No ☐   c) Don't Know ☐

10. Which of the following options best describes your overall experience of learning to use the MAPPED PDA and software ?

a) Easy & intuitive ☐   b) Quite Straightforward ☐   c) Quite Complicated ☐   d) Difficult & Bewildering ☐   e) Don't Know ☐

11. Would a PDA route planner, like MAPPED, which helped you to plan your trip and allowed you to access up-to-date travel information before and during your journey be useful to you?

a)Yes ☐   b) No ☐   c) Don't know ☐

Please state the reason for your answer: ………………………………………………………………...……………

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12. Would having a PDA route planner, like MAPPED, encourage you to use public transport more often?

a) Definitely   b) Maybe   c) Probably Not   d) Definitely Not   e) Don't Know

☐   ☐   ☐   ☐   ☐

13. If a similar route planner was available on your existing mobile phone would you use it?

a) Definitely   b) Maybe   c) Probably Not   d) Definitely Not   e) Don't Know

☐   ☐   ☐   ☐   ☐

14. Would you pay for a mobile route planning service such as MAPPED, and if so, how much?

a) Yes, more than £10 per month ☐
b) Yes, between £5 and £10 per month ☐
c) Yes, less than £5 per month ☐
d) No, I would only use it if it was free of charge ☐
e) No, I would not pay anything and I would not use it at all ☐
f) Don't Know ☐
g) Other (please specify): ☐

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15. Which of the following statements best describes your initial thoughts after using the MAPPED PDA and software?

a) I found the PDA and software easy to use ☐
b) I found the PDA and software difficult to use ☐
c) I found the PDA and software neither easy nor difficult to use ☐
d) I found the PDA and software impossible to use ☐
e) Don't know ☐
f) Other (please specify): ☐

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16. Regarding the MAPPED PDA and software, please indicate your level of agreement with the following statements: *(please tick ONE response per row, and insert a reason for each answer)*

	Strongly agree	Agree	Indifferent	Disagree	Strongly disagree	Don't know	Reasons
a) It is a valuable time-saving device							
b) Encourages me to use public transport more often							
c) Helps me to plan my trip in the best possible way							
d) Opens up new solutions I had never thought of							
e) Allows me to avoid potential travel problems							
f) Having an on-screen map provides reassurance for following the correct route							
g) An on-screen map is necessary at all times during a trip							
h) I can envisage a commercial market for this type of system							
i) My ability to use the MAPPED PDA and software improved after using it for the first time.							
j) I would need a greater understanding of the device to benefit from it fully							
k) Its effectiveness can be affected by weather and light conditions							
l) Doesn't offer me any new information than what I can already access elsewhere							
m) Confusing and unhelpful, makes my journey more difficult							

17. If you have any other comments, especially concerning your travel needs, the PDA, MAPPED software, or this type of technology in general, please provide them in the space below:

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Thank you for your time and cooperation in helping the MAPPED project.

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Appendix 11: MAPPED project - After trial questionnaire (2)

AFTER TRIAL QUESTIONNAIRE

University of Southampton

Data Protection Act 1998. All of the information gained via this study will remain strictly confidential and kept in accordance with the Data Protection Act 1998. This research is being carried out by the University of Southampton and ***** ****** ***** as part of the MAPPED Project. No other organisations will have access to the information you provide us. After completion, the data from these questionnaires will be entered into a computer package and statistically analysed. By completing this questionnaire you are giving your permission for the data to become part of the study. If the results are published in any form you are reassured that your anonymity will be maintained.

This questionnaire should be completed by participants after they have taken part in the trials.

The purpose of the trials is to provide the first hand experiences and suggestions of various user groups as a valued contribution to the future development of the final product.

UNLESS OTHERWISE STATED PLEASE TICK ONE ANSWER PER QUESTION

User ID: _____

Q1. DATE: _____ / _____ / _____

Q2. HOW WOULD YOU RATE YOUR OVERALL SATISFACTION WITH USING THE PERSONAL DIGITAL ASSISTANT (PDA)?

- ◯ 1. Very satisfied
- ◯ 2. Fairly satisfied
- ◯ 3. Indifferent
- ◯ 4. Fairly dissatisfied
- ◯ 5. Very dissatisfied
- ◯ 99. Don't know

Q3. PLEASE GIVE REASONS FOR YOUR CHOICE OF RATING IN Q2? …………………………….

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Q4. REGARDING YOUR USE OF THE MAPPED PDA AND SOFTWARE, PLEASE INDICATE YOUR DEGREE OF SATISFACTION WITH THE FOLLOWING FACTORS, AND EXPLAIN WHY YOU FELT THIS WAY?

(Please tick ONE response per row, and insert a reason for each answer)

	1. Very Satisfied	2. Fairly Satisfied	3. Indifferent	4. Fairly Dissatisfied	5. Very Dissatisfied	98. Don't know	Reason(s)
a) Ease of learning	○	○	○	○	○	○	
b) Ease of use	○	○	○	○	○	○	
c) Speed of response/suggestions	○	○	○	○	○	○	
d) Overall usefulness of the route planner	○	○	○	○	○	○	
e) Usefulness of walking route information	○	○	○	○	○	○	
f) Usefulness of information on arrival times at stops	○	○	○	○	○	○	
g) Usefulness of information on choice of public transport services	○	○	○	○	○	○	
h) Credibility/reliability of suggested routes	○	○	○	○	○	○	
i) Accuracy of information	○	○	○	○	○	○	
j) Accessibility information/Points Of Interest (POIs)	○	○	○	○	○	○	
k) GPS reliability/connectivity	○	○	○	○	○	○	
l) Audio facility clarity/reliability	○	○	○	○	○	○	

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Q5. REGARDING THE EASE OF USE OF THE PDA, PLEASE INDICATE YOUR DEGREE OF SATISFACTION WITH THE FOLLOWING, AND EXPLAIN WHY YOU FELT THIS WAY?

(Please tick ONE response per row and insert a reason for each answer)

	1. Very Satisfied	2. Fairly Satisfied	3. Indifferent	4. Fairly Dissatisfied	5. Very Dissatisfied	98. Don't know	Reason(s)
a) System start-up / opening of MAPPED software	○	○	○	○	○	○	
b) Route planning menu	○	○	○	○	○	○	
c) Points Of Interest database	○	○	○	○	○	○	

Q6. WHICH OF THE FOLLOWING OPTIONS BEST DESCRIBES THE LEVEL OF DETAIL OF THE INFORMATION PROVIDED BY THE MAPPED SOFTWARE?

- ○ 1. Excessive
- ○ 2. Accurate
- ○ 3. Sufficient
- ○ 4. Basic
- ○ 5. Confusing
- ○ 6. Incomplete
- ○ 98. Don't know

Q7a. HOW WOULD YOU DESCRIBE THE BUTTONS ON THE PDA?

1. Too big	2. Too small	3. The right size	98. Don't know
○	○	○	○

Q7b. ANY OTHER COMMENTS ABOUT THE BUTTONS? ....

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Q8a. HOW WOULD YOU DESCRIBE THE SCREEN ON THE PDA?

1. Easy to see   2. Difficult to see   98. Don't Know
    ○   ○   ○

Q8b. ANY OTHER COMMENTS ABOUT THE SCREEN? …..………………….…..………………..

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Q9a. HOW WOULD YOU RATE THE USEFULNESS AND CLARITY OF THE INSTRUCTIONS PROVIDED?

    ○   1. Very useful and easy to understand
    ○   2. Quite useful, but could have been clearer
    ○   3. Not very useful and difficult to understand
    ○   4. Misleading and unclear
    ○   98. Don't Know

Q9b. ANY OTHER COMMENTS ABOUT THE USEFULNESS AND CLARITY OF THE INSTRUCTIONS PROVIDED? …………………………………………………………………………..

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Q10. DID YOU FIND IT EASIER TO USE THE MAPPED PDA AND SOFTWARE AS YOUR TRIAL PROGRESSED?

1. Yes   2. No   99. Don't know
    ○   ○   ○

Q11. WHICH OF THE FOLLOWING OPTIONS BEST DESCRIBES YOUR OVERALL EXPERIENCE OF LEARNING TO USE THE MAPPED PDA AND SOFTWARE?

    ○   1. Easy & intuitive
    ○   2. Quite straightforward
    ○   3. Difficult & complicated
    ○   4. Bewildering
    ○   99. Don't Know

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Q12a. WOULD A PDA ROUTE PLANNER, LIKE MAPPED, WHICH HELPED YOU TO PLAN YOUR TRIP AND ALLOWED YOU TO ACCESS UP-TO-DATE TRAVEL INFORMATION BEFORE AND DURING YOUR JOURNEY BE USEFUL TO YOU?

1. Yes   2. No   99. Don't know
   ○   ○   ○

Q12b. PLEASE STATE THE REASON(S) FOR YOUR ANSWER TO Q12a ....
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Q13. WOULD HAVING A PDA ROUTE PLANNER, LIKE MAPPED, ENCOURAGE YOU TO USE PUBLIC TRANSPORT MORE OFTEN?

1. Definitely   2. Maybe   3. Probably Not   4. Definitely Not   99.Don't Know
     ○   ○   ○   ○   ○

Q14. IF A SIMILAR ROUTE PLANNER WAS AVAILABLE ON YOUR EXISTING MOBILE PHONE WOULD YOU USE IT?

1. Definitely   2. Maybe   3. Probably Not   4. Definitely Not   99.Don't Know
     ○   ○   ○   ○   ○

Q15. WOULD YOU PAY FOR A MOBILE ROUTE PLANNING SERVICE SUCH AS MAPPED, AND IF SO, HOW MUCH?

- ○   1. Yes, more than £10 per month
- ○   2. Yes, between £5 and £10 per month
- ○   3. Yes, less than £5 per month
- ○   4. No, I would only use it if it was free of charge
- ○   5. No, I would not pay anything and I would not use it at all
- ○   99. Don't Know
- ○   98. Other, please specify ....

5

Q16. WHICH OF THE FOLLOWING STATEMENTS BEST DESCRIBES YOUR INITIAL THOUGHTS AFTER USING THE MAPPED PDA AND SOFTWARE?

- ○ 1. I found the PDA and software easy to use
- ○ 2. I found the PDA and software difficult to use
- ○ 3. I found the PDA and software neither easy nor difficult to use
- ○ 4. I found the PDA and software impossible to use
- ○ 99. Don't know
- ○ 98. Other, *please specify* ....

Q17. WHICH OF THE FOLLOWING STATEMENTS DO YOU AGREE WITH MOST?

- ○ 1. I would purchase the hand held if it was available on the high street
- ○ 2. I would consider purchasing the hand held if it was available on the high street
- ○ 3. If the hand held was available free of charge I would make use of the service
- ○ 4. I don't think I would use the hand held again
- ○ 98. Other, please specify..

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Q18. REGARDING THE MAPPED PDA AND SOFTWARE, PLEASE INDICATE YOUR LEVEL OF AGREEMENT WITH THE FOLLOWING STATEMENTS

(Please tick ONE response per row, and insert a reason for each answer)

	1. Strongly agree	2. Agree	3. Indifferent	4. Disagree	5. Strongly disagree	98. Don't know	Reason(s)
a) It is a valuable time-saving device	○	○	○	○	○	○	
b) Encourages me to use public transport more often	○	○	○	○	○	○	
c) Helps me to plan my trip in the best possible way	○	○	○	○	○	○	
d) Opens up new solutions I had never thought of	○	○	○	○	○	○	
e) Allows me to avoid potential travel problems	○	○	○	○	○	○	
f) Having an on-screen map provides reassurance for following the correct route	○	○	○	○	○	○	
g) An on-screen map is necessary at all times during a trip	○	○	○	○	○	○	
h) I can envisage a commercial market for this type of system	○	○	○	○	○	○	
i) My ability to use the MAPPED PDA and software improved after using it for the first time.	○	○	○	○	○	○	
J) I would need a greater understanding of the device to benefit from it fully	○	○	○	○	○	○	
k) Its effectiveness can be affected by weather and light conditions	○	○	○	○	○	○	
l) Doesn't offer me any new information than what I can already access elsewhere	○	○	○	○	○	○	
m) Confusing and unhelpful, makes my journey more difficult	○	○	○	○	○	○	

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Q19. IN WHICH WAYS COULD THE DESIGN OF THE HAND HELD NAVIGATIONAL AID BE IMPROVED? ……………………………………………………………………………………

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Q20. HOW DO YOU FEEL YOUR TRAVEL NEEDS WITHIN THE URBAN ENVIRONMENT COULD BE BETTER MET IN THE FUTURE? ……………………………………………………………………

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Q21. IF YOU HAVE ANY OTHER COMMENTS, ESPECIALLY CONCERNING YOUR TRAVEL NEEDS, THE HAND HELD NAVIATIONAL DEVICE, THE MAPPED SOFTWARE, OR TECHNOLOGY IN GENERAL, PLEASE PROVIDE THEM IN THE SPACE BELOW:..

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THANK YOU FOR YOUR TIME AND VALUABLE INPUT.

Appendix 12: MAPPED project - Individual semi-structured interview schedule

INTERVIEW SCHEDULE
INTERVIEWERS GUIDE TO THE ISSUES OF CONCERN

1. WELCOME (5 minutes)

- Summarise the study and explain how the interview data fits in.
- Reiterate confidentiality and remind the participant that where applicable a pseudonym will be used in the final report to protect their identity.

2. TRAVEL NEEDS, EXPECTATIONS & PROBLEMS (5-10 minutes)

Issues to be covered:
- Travel needs
- Travel expectations
- Most frequently used modes of transport
- Do the available modes of transport meet individual needs
- Suggestions for future needs to be better met
- Problems experienced when travelling
- Suggestions for overcoming travel problems
- Suggestions for improving local transport and travel options

Example questions:
- Tell me about the modes of transport that you usually travel around the urban area by?
- Do you or have you ever experienced any problems when travelling?
- Can you suggest any ways of overcoming these problems or improving local transport and travel options?
- Do you feel that you have any specific travel needs?
- Do you feel that the modes of transport that you use in the urban environment meet your needs? How/how not?
- What do you expect a good public transport service to provide its customers?
- How do you feel your travel needs could be better met in the future?
- When you are making an unfamiliar journey do your travel needs differ, if so how?
- If you didn't have access to a car, would that change your travel needs?

3. AWARENESS, ACCESS & USE OF TECHNOLOGY (5-10 minutes)

Issues to be covered:
- Awareness of current technological products and innovations
- Awareness of the cost of technology
- Current usage rates of technology, such as computers and mobile telephones
- Factors blocking or limiting access and/or use of technology

Example questions:
- Tell me about the last technological product you purchased?
- Do you use a computer, if so, for what reason did you start? Do you use the internet? What for?
- Is there anything stopping you from accessing technology?
- If any, what factors – material, social and cultural – block or limit access and use of technology?
- Under what circumstances have you discontinued using technologies?
- Are there identifiable - instrumental and expressive - modes of use?

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4. TRAVEL INFORMATION (5-10 minutes)

Issues to be covered:
- Current usage rates of travel information
- Current sources of travel information
- Suggestions for the improvement of travel information
- Suggestions for more accessible travel information

Example questions:
- What kinds of travel information do you usually make use of?
- How do you make use of travel information?
- Which sources do you use when searching for travel information – internet, a-z maps, ask a friend or relative, over the telephone, and satellite navigational devices – handheld or car based?
- Do you use these sources when planning familiar, unfamiliar, or all types of journeys?
- If not, why do you not make use of travel information?
- Think about a situation where you will be making an unfamiliar journey, or a journey you have never made before, what sorts of information would you require?
- Do you feel that there is adequate travel information available to you?
- Could this travel information be improved, or be more accessible to you in anyway?

5. EVALUATION OF THE HANDHELD (5-10 minutes)

Issues to be covered:
- The functionality and visual accessibility of the handheld
- Problems with the handheld
- Future use of the handheld
- Suggestions for improving the design of the handheld

Example questions:
- Let's move on to discuss the handheld PDA and MAPPED software.
- How did you find the handheld PDA? Is the handheld device a suitable size? Was the handheld device easy to use? Are the buttons a usable size? Is the screen clear enough/ readable?

- How did you find the MAPPED software?
- Did you experience any problems whilst using the device? If so, what type of problems – with the software, the applications, the battery life, the signal strength etc.
- Would you pay to make use of the handheld in the future? Or, would you use it if it was free of charge?

- Imagine that you were going out for the day with a friend who uses a wheelchair, how useful would you find the handheld and MAPPED software? Why /why not? Which applications?

- Let's go through the applications of the MAPPED software, how did you find the Pedestrian journey planner? Transport journey planner? List of POI's? POI accessibility information? Map augmentation (avoiding stairs etc.)? Audio output? User feedback option?

- Do you feel the design of the handheld PDA device could be improved in any way?
- Do you feel the MAPPED software package could be improved in any way?

6. CONCLUSION AND THANKS (5 minutes)

- Invite participants to make any additional comments.
- Thank participants/ remind participants that all information will remain confidential.

2

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Appendix 13: MAPPED project – Information session programme

University of Southampton

MP mapped

MAPPED PROJECT INFORMATION SESSION

18th January 2008

Programme

1-1.30pm	Overview of the MAPPED project
1.30-2pm	Overview of the University study:
	'What role could technology play in assisting the mobility of older people? A case study of hand held navigational devices'.
2-2.15pm	Break for refreshments
2.15-2.30pm	Explanation of what the trials will require from the participants
2.30-2.45pm	Participants chance to view and use the hand held navigational devices
2.45-3pm	Question and answer session

University of Southampton

mapped

PARTICIPANT INFORMATION SHEET

We would like to invite you to take part in a research study, before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take the time to read the following information carefully. It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. Please also remember that if you do agree to take part you will still have the right to withdraw from the study without giving a reason.

The title of the study is:

'What role could technology play in assisting the mobility of older people?
A case study of hand held navigational devices'.

What is the purpose of the study?

The study will investigate how technology might be developed to assist, and prolong, the mobility of older people and people with disabilities. We would like to invite you to take part in a series of trials in which you will test hand held satellite navigation (sat nav.) devices. The hand held devices resemble mobile phones (see the picture above), and work in a similar way to the in-car GPS systems, such as Tom-Tom. For the purposes of this trial the hand held devices have been specially adapted to offer users the following services:

- *Journey planning software:* tailored to match the chosen mode of travel, and (dis)ability level of the user. The output can easily be switched from pictures to sound.
- *Real-time journey information*: such as which bus stop to use and what time the next bus will arrive.
- *Points of Interest (POI):* the system informs the user if, for example, the place they are visiting has wheelchair access or provides Braille leaflets.
- *Geographically indexed accessibility information:* tailored to the (dis)ability level of the user the system, for example, informs the user in advance if disabled access ramps are positioned, and if so where to find them.
- *Disabled friendly mobile user interfaces:* for example, larger keyboards are available to visually impaired users.

The purpose of the study is to find out what people think of the hand held devices and the services that they offer. If you agree to take part you will be assessing how useful and easy to use the hand held is. You do not need a car to be able to take part.

1

Do I have to take part?

No your participation is entirely voluntary, and if you do decide to take part, you can withdraw from the study at any time without giving a reason.

What will I get in return for taking part?

If you successfully complete all of the stages outlined in the flow chart on page 4, as a thank-you for your time and valuable input you will receive a £50 voucher from a high street shop.

If I decide to take part, what will I have to do and how long will it take me?

The trial will involve your participation in the following stages:

During the trial:

- You need to attend a training session where you will receive information and guidance on the system, get to practice using the hand held device, and ask any questions (30-60 minutes). This training session can take place on day one of the trial if more convenient for you.
- You will need to fill in the pre-trial questionnaire which includes some questions about yourself and some around what you think about the hand held device. This questionnaire can be completed immediately after the training session (30-60 minutes)
- You will be required to make use of the hand held device for between 2 and 4 days over a period of 3 weeks. The first time or few times you use the hand held device you will be accompanied by a Researcher from the University of Southampton called Michelle. During the trials you will visit specific destinations whilst testing out the functions of the hand held device (maximum 4 hours per day of usage). If you feel confident enough to use the hand held device on your own this will also be possible.
- You will also be asked to fill in a travel diary for each day that you use the hand held device. You will be asked to make a note of your journey details, such as where you began and where you went, the modes of transport used, and also any problems that you experience with the hand held device or whilst on your journey (15-45 minutes per day). The example below shows you how the travel diary will look.

2

EXAMPLE:

A section of the travel diary:

3. Weather conditions *(please tick all that apply)*

a) *Sunny*   b) *Overcast*   c) *Raining*   d) *Light*   e) *Dark*   f) *Other*

☐ ☐ ☐ ☐ ☐ ☐

If other, please specify

....

4. Where did you start your trip?

....

5. What time did you start your trip? _____:_____ AM / PM

Halfway through the trial:

- You will get the chance to discuss with Michelle (either via the telephone or in person which ever is more convenient for you) any major problems that you are experiencing with the hand held device and also to make sure you are comfortable participating in the rest of the study (5-30 minutes)

At the end of the trial:

- You should hand in your completed travel diary to Michelle the researcher who will be accompanying you during the trials (you will need to complete at least 8 trips over a period of 2 to 4 days). This can be completed immediately after your last trial session if you are accompanied by Michelle, or if you are unaccompanied just before the interview detailed below (5 minutes)
- You will need to fill in the post-trial questionnaire which includes some questions about yourself and some around what you think about the hand held device. This questionnaire can be handed in with your completed travel diary (30-60 minutes)

After the trial:

- You will be required to take part in a short one-to-one interview with Michelle, you will be asked questions about your experience of using the hand held device, and whether you feel it could be improved in any way. You can choose where you would like the interview to take place, ideally somewhere that is quiet and convenient for you (30-60 minutes)

3

Flow chart to show the stages of the trials that you will need to complete in order to receive the £50 high street voucher.

```
┌─────────────────────────┐                              ┌─────────────────────────┐
│ Attend a training session│                             │ Fill in the pre-trial   │
│ (this can be done on day │ ──────────────────────────► │ questionnaire (this can be│
│ one of the trials if more│                             │ done on day one of the trials│
│ convenient for you)      │                             │ if more convenient for you)│
└─────────────────────────┘                              └─────────────────────────┘
                                                                      │
                              ┌─────────────────────────────────┐     │
                              │ Trials – visit ******** to test the│◄──┘
                              │ hand held devices (maximum 4 hours│
                              │ per day for between 2 and 4 days). You│
                              │ will be accompanied by the researcher│
                              │ Michelle until you feel confident using│
                              │ the hand held on your own         │
                              └─────────────────────────────────┘
                                       │
┌──────────────────────────┐           ┌──────────────────────────┐
│ Fill in a travel diary for│          │ Discuss with Michelle (either in│
│ each 'trip' you accomplish│ ───────► │ person or over the telephone) any│
│ during the trials (you    │          │ major problems with the hand held│
│ will need to complete a   │          │ and whether or not you are willing│
│ minimum of 8 trips but more│         │ to continue participation in the trials│
│ than one trip can be done │          └──────────────────────────┘
│ per day)                  │
└──────────────────────────┘
        │
┌──────────────────────────┐   ┌──────────────────────┐   ┌──────────────────┐
│ Hand the completed travel │   │ Fill in the post-trial│   │ Take part in a   │
│ diary to Michelle (it must│──►│ questionnaire (you can│──►│ one-to-one       │
│ contain at least 8 trips).│   │ hand this in at the same│  │ interview        │
│ You can hand this in at the│  │ time as completing the │   │ with Michelle    │
│ same time as completing   │   │ interview)            │   └──────────────────┘
│ the interview)            │   └──────────────────────┘
└──────────────────────────┘
                        ┌──────────────────────┐
                        │ You will receive your £50│
                        │ high street voucher   │
                        └──────────────────────┘
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Please note:

To take part in the trial you must be able to complete all of the stages outlined in the flow chart on page 4.

All of the suggested timeframes for each activity are approximations only – it may take you less or more time to complete each stage.

In order to receive the £50 voucher you will be expected to complete **all** of the stages of the trial as outlined in the flow chart above.

What will happen to the information collected about me?

- The research team at ******* ******* ****** and the University of Southampton are the only organisations that will have access to the study data which will remain strictly confidential
- As the information is collected the paper copies, notes and, any audio and video tapes will be stored in a lockable cupboard. Only the research team will have access to this lockable cupboard where the information will be kept for up to 5 years until it is destroyed.
- The interviews will be audio and video recorded, and later transcribed ready for the analysis stage
- Any data files stored on computers will be anonymised and password protected, and therefore maybe kept indefinitely
- You are assured that your names and addresses will not be used in any reports or written communication resulting from the study; if you are highlighted in any report a pseudonym will be used to protect your identity.
- The major findings and outcomes of the study may be published by the MAPPED project, ******* ******** *******, and the University of Southampton. The findings and outcomes may also be used within academic papers, essays, dissertations, briefings, presentations and at conferences.

If I take part what rights will I have?

You will be able to ask any further questions about the study; refuse to answer any particular question or set of questions; and withdraw from the study without reason at any time. And if you leave your contact details with the researcher you will be sent a summary of the study findings, once they are available.

Who is organising and funding the research?

The study is being carried out by Michelle Heward as part fulfilment of the qualification of PhD in Social Work Studies that she is currently undertaking at the University of Southampton. The study is also being conducted as part of a larger scale research project involving ******** ****** ******. This project is called 'Mobilisation and Accessibility Planning for People with Disabilities' or 'MAPPED' and is funded by the European Union.

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What next....?

If you are interested in taking part in the MAPPED trials please telephone 02380 595367 or email michelle.heward@soton.ac.uk, and provide a message with your name and a telephone number, we will then contact you with further details.

An information session will be held in ******** at the ********** ********** (wheelchair access from *******) on Friday 18th January 2008 between 1pm and 3pm.

Thank you for taking the time to read this leaflet.

We look forward to meeting you soon!

Please do not hesitate to contact us if you have any questions, or would like further information regarding the study. Please also contact us if require a copy of this leaflet in **LARGE PRINT,** or if you wish to withdraw from the study.

In the first instance please try:

Michelle Heward
Postgraduate Research Student
University of Southampton
School of Social Sciences
Murray Building
Highfield Campus
Southampton
Hampshire
SO17 1BJ

Telephone: 02380 595367
Email: michelle.heward@soton.ac.uk

Alternatively, you may contact either of the research supervisors by telephoning the University switchboard on 02380 595000 and asking for Jackie Rafferty or Maria Evandrou, or via the following email addresses, j.rafferty@soton.ac.uk or maria.evandrou@soton.ac.uk.

Any communication will be treated in the strictest confidence.

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Appendix 15: MAPPED project - Consent form signed by stage two participants

CONSENT FORM

PROJECT:
What role could technology play in assisting the mobility of older people?
- A case study of handheld navigational devices -

RESEARCHER CONTACT DETAILS:
Michelle Heward, Postgraduate Research Student, University of Southampton
Email: michelle.heward@soton.ac.uk, or telephone: 02380 593317

Please tick box

1. I confirm that I have received, read and understand the information sheet for the above study.

2. I confirm that I have had the opportunity to ask questions about the study which have been answered to my satisfaction.

3. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason.

4. In the event of an injury caused by my participation in this study I recognise that I have no legal case for action against any of the involved parties.

5. I agree to the interview/focus group being audio and video recorded.

6. I agree to the use of anonymised quotes in publications.

7. I understand if I do not successfully complete all of the stages of the study I will not be entitled to the £50 voucher.

8. I agree to take part in the above study.

Participant's name: ....
(BLOCK CAPITALS)

Participant's Signature: ....

Date: ....

Researcher's Name: ....
(BLOCK CAPITALS)

Researcher's signature: ....

Date: ....

If you have any reservations or would like to exercise your right to withdraw from this study, please contact the researcher named above.

Appendix 16: The demographic and socio-economic characteristics of the sample for the Getting Out and About project

Participant ID number	Age	Gender	Employment status	Current/last occupation	Marital status	Highest qualification	Ethnicity	Type of accommodation	Level of disability	Level of care or assistance	Receipt of a pension	Self-reported level of activity	Self-reported level of general health
M21	70	Male	Retired	Financial services	Married	Naval staff course	White - British	Own house	No	None	State and private	Fairly active	Fairly good
M22	70	Male	Retired	Shop Keeper	Divorced	None	Pakistani	Rented council flat	Mobility (walks with a stick)	Occasionally - if I fall over	State only	Don't know	Fairly good
M24	68	Male	Retired	Photographer	Married	G.C.S.E or C.S.E.or equivalent	Indian	Rented council flat	Blind/partially sighted	None	State only	Fairly active	Fairly good
M25	67	Female	Retired	Librarian	Married	Degree	Mixed heritage - white and Asian	Own house	Mobility (Multiple sclerosis)	Family carers	State only	Fairly active	Fairly good
M26	65	Female	Retired	Hairdresser	Divorced	RSA I & II	White - British	Rented flat	Partially sighted; chronic illness (asthma)	None	State only	Not active	Don't know
M27	68	Male	Retired	Manual labourer	Single	Btec or G.N.V.Q	White - British	Own flat	No	None	State and private	Fairly active	Fairly good
M28	65	Male	Retired	H.G.V. driver	Married	None	White - British	Own house	Mobility; mental health difficulty; chronic illness; and deaf/hard of hearing	My wife looks after me unpaid	Private only	Fairly active	Fairly good
M29	71	Female	Retired	Beautician	Widowed	Btec or G.N.V.Q	Taiwanese	Own house	Arthritis	None	State and private	Fairly active	Fairly good
M30	78	Male	Retired	Office manager	Married	G.C.S.E or C.S.E.or equivalent	White - British	Own flat	No	None	State and private	Active	Good

Participant ID number	Age	Gender	Employment status	Current/last occupation	Marital status	Highest qualification	Ethnicity	Type of accommodation	Level of disability	Level of care or assistance	Receipt of a pension	Self-reported level of activity	Self-reported level of general health
M31	65	Male	Retired	Publican	Single	None	White - British	Sheltered housing	Chronic illness (Breathing)	As and when needed	State only	Fairly active	Not good
M32	81	Male	Retired	Engineer	Separated	Army instructor	White - British	Sheltered housing	Blind/partially sighted (cataracts)	None	State and private	Fairly active	Not good
M33	75	Female	Retired	Nurse	Separated	Btec or G.N.V.Q	White South African	Sheltered housing	No	None	State only (from South Africa)	Active	Good
M34	77	Female	Retired	Sales Assistant	Separated	None	White - British	Sheltered housing	No	None	State only	Fairly active	Not good
M35	65	Female	Employed part-time	Lecturer	Married	Degree	White - British	Own house	No	None	State and private	Active	Good
M36	66	Female	Employed part-time	Visual merchandiser	Married	None	White - British	Own house	No	None	State and private	Fairly active	Good
M37	77	Male	Retired	Mechanic	Separated	South African mechanic certificate	White - South African	Rented council flat	Parkinson's disease	Part-time carer	State only	Fairly active	Fairly good
M38	76	Female	Retired	Cleaner	Widowed	None	White - British	Rented council flat	No	None	State and private	Fairly active	Good
M39	69	Male	Retired	Security guard	Divorced	Nursing certificate	White - British	Rented council flat	Mobility (leg plates); Chronic illness (Asthma)	None	State and private	Fairly active	Fairly good
M40	69	Female	Retired	Nursing	Divorced	Nursing certificate	Black - Caribbean	Own house	No	None	State and private	Active	Good
M41	65	Female	Retired	Secretarial	Divorced	RSA I & II	White - British	Rented flat	Arthritis; sleep problems	Neighbours and friends when necessary	State only	Fairly active	Not good

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University of Southampton

FOCUS GROUP SCHEDULE
FACILITATORS GUIDE TO THE ISSUES OF CONCERN

1. SHORT QUESTIONNAIRE   (5-10 minutes)

All participants must complete the short questionnaire before the focus groups begins.

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2. WELCOME & INTRODUCTIONS   (5 minutes)

- Introduce and explain the role of the facilitators.
- Summarise the study and explain how the participants fit into the research.
- Confirm confidentiality and remind the participant that where applicable a pseudonym will be used in the final report to protect their identity.
- Ask the participants to introduce themselves briefly: their name/any specific hobbies they have/which mode of transport they use most frequently, etc.

3. THE BOARD GAME: (20-40 minutes)

The participants will play a board game which draws its influence from a game already on the market entitled 'The London Underground Board Game' for which the idea is to reach all the destination stations whilst hindering your opponent's game as much as possible.

N.B. THIS IS AN IDEA YET TO BE EXPLORED & PILOTED
The current idea for this adapted version entails players (in teams of 2) successfully completing a bus journey – from one end of the board to another. During the game the players will roll a dice and move forward the appropriate number of squares. When the players land on certain squares they will be asked to pick up either a 'question card' or a 'chance card'. The 'question card' will have questions on the topics listed below, and the 'chance card' will either give them an extra turn or move them forward spaces on the board. The idea behind the 'question card' is to encourage group discussion on relevant topics, and so some of the cards will have open ended questions and the participants will be asked to 'discuss......a topic'.

- TRAVEL NEEDS, EXPECTATIONS & PROBLEMS
- AWARENESS, ACCESS & USE OF TECHNOLOGY
- TRAVEL INFORMATION

4. BREAK FOR REFRESHMENTS   (15-25 minutes)

1

5. EVALUATION OF THE HANDHELD   *(45 minutes)*

The handheld devices will be passed between the participants so that they can explore the size and possible functions. During this time the facilitator will brief the participants about what the handheld is designed to do.

Possible issues to be covered:

- What do you think about the idea of using this device to help you navigate familiar places?
- What do you think about the idea of using this device to help you navigate unfamiliar places?
- Do you think the handheld is a usable size?
- Do you think the screen is readable?
- Are the buttons a usable size?
- The functionality and visual accessibility of the handheld
- Future use of the handheld
- Would you use this handheld device – why/not?
- Suggestions for improving the design of the handheld

6. CONCLUSION AND THANKS   *(5 minutes)*

- Summarise the main points of the discussion
- Ask the participants if the summary was an accurate reflection of the discussion? Alter the summary if necessary.
- Invite the participants to make any additional comments.
- Thank participants/ remind participants that all information will remain confidential.

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UNIVERSITY OF
Southampton
School of Social Sciences

The Getting Out and About project - Interview Guide

DATE: ____ / ____ / _____   INTERVIEW ID NUMBER: _____

> *Each participant must sign the consent form and fill in the pre-interview questionnaire before the interview begins*

WELCOME   (5 minutes)

  a) Summarise the study and describe how the interview data will be used.
  b) Explain confidentiality and tell the participant that where applicable a pseudonym will be used in the final report to protect their identity.

> *Start audio recording the interview, and remember to state the interview id number*

1. TRAVEL-BASED MOBILITY IN LATER LIFE   (5 minutes)

  a) What does travel-based mobility mean to you? *(Use the answer to this question to help formulate the definition of travel-based mobility used within the rest of the questions)*
  b) How important is travel-based mobility to you?
  c) How mobile would you say you are? (Probe for very, fairly, intermittent, not)
  d) (If appropriate) How important is it for you to continue to be mobile?
  e) What stops you getting out and about?
  f) What limits you getting out and about?
  g) What helps you to get out and about?

2. TRAVEL PATTERNS: NEEDS, EXPECTATIONS & PROBLEMS   (10 minutes)

  a) How do you usually get from a to b? (Probe for whether a car driver or not - if you didn't have a car/access to a car, would that change your travel needs?)
  b) On average how many times do you go out each week?
  c) How far do you go on average? (Probe for time/distance)
  d) Why do you usually go out? (Probe for journey purpose) What things do you have to go out for/do? What things do you want to do? (Probe for shopping, GP/hospital/dentist, visiting friends and family (local or not) voluntary work, exercise, library, post office etc.)
  e) Do you make any journeys specifically to help friends/family? Do you usually go out mainly for yourself, or for friends and family?
  f) How important is it to know that you are able to get out and about even if you don't feel like it that day?
  g) Do you experience any difficulties when travelling in Southampton? (Probe for what, how often always/on occasion?)
  h) If yes, can you suggest how these difficulties could be overcome?

1

i) Do you have a disability/ require any additional travel support?
j) Do you feel that the modes of transport that you use in Southampton support your day to day travel? (Probe for how/how not?)
k) If you no longer had a car/access to a car how would that change your travel? (probe for more less journeys and why?)
l) What if your situation changes and you were to become less mobile how do you think that would change your travel?
m) If you are going somewhere that you have never been before does that change your travel needs? (Probe for how, why/why not?)
n) What happens if you experience a problem (such as….you were lost and did not have a map) if you are going somewhere new?
o) How can local public transport services be improved?

3. AWARENESS, ACCESS & USE OF INFORMATION AND COMMUNICATION TECHNOLOGY
(5 minutes)

Users of information and communication technology

a) What types of information and communication technology do you make use of?
b) For what purpose?
c) Do you own your own computer/have internet access at home – if not where do you use a computer/the internet?
d) Tell me about the last information and communication technology product you purchased?
e) Who helped/s you to use/access information and communication technology?
f) Do you/ have you ever helped other people to use/access information and communication technology?
g) Have you ever discontinued using any form of information and communication technology? (Probe for why/what circumstances)

Non-users of information and communication technology

a) If not, why not? What stops you from accessing information and communication technology? (Probe for factors that block or limit use – are these economic, social, cultural?) (Probe for knowledge, skills, design, jargon, fear, no desire, chose not to, cost – also probe further so for example, which particular skills or part of the design)
b) If someone was to help you would you like to use information and communication technology? (Probe for who, under what circumstances)
c) Have you ever discontinued using any form of information and communication technology? (Probe for why/what circumstances)

4. VIRTUAL MOBILITY: HOW DOES/CAN INFORMATION AND COMMUNICATION TECHNOLOGY SUPPORT TRAVEL IN LATER LIFE?
(5 minutes)

a) Do you use/have you thought about using information and communication technology to keep in touch with your friends and/or family? (Probe if so, who, what sort, how often? How do you feel about using information and communication technology to communicate with friends and family? If no, what stops you from accessing or using information and communication technology to communicate with friends/family? Under what circumstances would you use information and communication technology to communicate with friends/family?
b) What do you think about shopping for your groceries over the internet? If so, how did you find it? Do you do it on a regular basis? Why have you never used this service? Would you ever consider trying it – when/why? Under what circumstances would you shop for your groceries over the internet?
c) What do you think about shopping for items other than groceries over the internet?
d) Do you use anything that helps you to move around (probe for physical and virtual i.e. assistive devices/aids or information and communication technology) Probe for the barriers to not using?
e) If you didn't have a car/access to a car/became less mobile would that change the amount you use email/online shopping services/mobility aids?

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f) Do you think that information and communication technology can support the travel-based mobility of older people? If so, how? If not, why not? Who else supports your travel-based mobility – does someone at home i.e. partner/carer how physically/virtually??

Explain to the participant that the next part of the interview will be slightly different to the previous part. It will involve two short stories, which the participant should read, and will then be asked questions about. Stress that this is not a test, and the answers will only reflect their opinions

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5. HYPOTHETICAL VIGNETTES (10 minutes)

5a. Vignette A

John is 68 years old and lives on his own in a flat near to Bedford place in Southampton. He has two children, Mary who is 40 years old and lives in Bournemouth, she is a single mother with two young children of her own, and James who is 37 years old and lives in New Zealand with his wife and three young children of his own. His son James has suggested that John purchase a personal computer.

Issues identified for probing

    i.   What kind of things could John use the computer for?

5b. Vignette B

Angela is 75 years old and lives on her own in the city centre. She suffers from mild arthritis, but otherwise is in fairly good health. Her friend has moved to Sheltered Housing on the East side of town. Angela is unfamiliar with this part of town, but plans to visit her friend travelling by bus. When Angela gets to the bus stop she realises that she has missed the bus, and the next one is not for another hour which will make her late.

Issues identified for probing

    i.   What do you think Angela would do next and why? (Probe for use of technology such as mobile phones)
    ii.   What do you think Angela would do if she was attending an appointment instead of visiting a friend?
   iii. What do you think Angela would do if it was raining?
   iv. What do you think Angela would do if it was dark?
    v.   What would you do in that situation and why?

---

6. CONCLUSION AND THANKS (5 minutes)

    a) Invite participant to make any additional comments.
    b) Thank participant and reiterate confidentiality.
    c) Ask participant to leave their address if they would like to receive a summary of the findings.

3

Appendix 19: Getting Out and About project – Information sheet

Participant information sheet: The Getting Out and About project

We would like to invite you to take part in a research study, before you decide whether or not to take part, it is important for you to understand why the research is being conducted and what it will involve. Please take the time to read the following information carefully. It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. Please also remember that if you do agree to take part you will still have the right to withdraw from the study without giving a reason.

The title of the study is:

Ageing in the information society:
The role of information and communication technology within later life travel-based mobility.

What is the purpose of the study?

The purpose of the study is to investigate how information and communication technology (ICT) might be used to assist the travel-based mobility of people aged 65 and over in the urban environment.

We would like to invite you to take part in an individual in-depth interview, where the following topics will be discussed:

- Travel needs, expectations and problems
- Awareness, access and use of ICT
- How ICT currently supports travel in later life
- Travel-based mobility in later life

The purpose of the study is to find out about the local travel patterns and level of access and use of ICT of older people within Hampshire. The only criteria for taking part in the interview is that you are aged 65 or over; you do not need to be able to use a computer to be able to take part.

Do I have to take part?

No your participation is entirely voluntary, and if you do decide to take part, you can withdraw from the study at any time without giving a reason.

If I decide to take part, what will I have to do and how long will it take me?

If you decide to take part in an interview it will involve the following:

- Read the information sheet and if you agree to take part sign the consent form
- Fill in the short questionnaire
- Complete the individual interview: In the interview you will be asked questions around the topic of travel-based mobility, and you will also be put into hypothetical situations and asked questions about how these could be solved. The interview will take a maximum of one hour of your time, and can take place at a location of your choice.

What will happen to the information collected about me?

- The research team at University of Southampton are the only people that will have access to the study data which will remain strictly confidential

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- As the information is collected the paper copies, notes and any audio and video tapes will be stored in a lockable cupboard. Only the research team will have access to this lockable cupboard where the information will be kept for up to 5 years until it is destroyed.
- The interviews will be audio and possibly video recorded. They will later be transcribed ready for the analysis stage
- Any data files stored on computers will be anonymised and password protected, and therefore maybe kept indefinitely
- You are assured that your names and addresses will not be used in any reports or written communication resulting from the study; if you are highlighted in any report a pseudonym will be used to protect your identity.
- The major findings and outcomes of the study may be published by the University of Southampton. The findings and outcomes may also be used within academic papers, essays, dissertations, briefings, presentations and at conferences.

If I take part what rights will I have?

- You will be able to ask any further questions about the study
- You can refuse to answer any particular question or set of questions
- You can withdraw from the study without reason at any time.
- If you leave your contact details with the researcher you will be sent a summary of the study findings once they are available.

Who is organising and funding the research?

The study is being carried out by Michelle Heward as part fulfilment of the qualification of PhD in Social Work Studies that she is currently undertaking at the University of Southampton. The PhD is funded by the Engineering and Physical Sciences Research Council (EPSRC), and is part of the Future Urban Technologies: Undertaking Research to Enhance Sustainability (FUTURES) project.

What next….?

If you are interested in taking part in the interviews please telephone 02380 593317 or email mh3@soton.ac.uk. Please leave a message detailing your name and telephone number; I will then contact you with further details.

Thank you for taking the time to read this leaflet. I look forward to meeting you soon!

Please do not hesitate to contact me if you have any questions, or would like further information regarding the study. Please also contact me if require a copy of this leaflet in **LARGE PRINT**, or if you wish to withdraw from the study.

In the first instance please try:

Michelle Heward
Postgraduate Research Student
University of Southampton
School of Social Sciences
Murray Building, Highfield Campus
Southampton, Hampshire, SO17 1BJ
Telephone: 02380 593317. Email: mh3@soton.ac.uk

Alternatively, you may contact either of the research supervisors by telephoning the University switchboard on 02380 595000 and asking for Jackie Rafferty or Maria Evandrou, or via the following email addresses, j.rafferty@soton.ac.uk or maria.evandrou@soton.ac.uk.

Any communication will be treated in the strictest confidence.

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Appendix 20: Getting Out and About project – Consent form

Appendix 21: Letter informing ethics board of methodological changes

Miss Michelle Heward
Postgraduate Research Student
University Of Southampton
School of Social Sciences
Murray Building
Highfield Campus
Southampton
Hampshire
SO17 IBJ

6th November 2008 (Approved 27th November 2008)

Dear Sir or Madam,

I am writing to inform you that I am changing one of the methods of data collection that I originally proposed within my ethics application to the School (approved on 24th October 2007). I feel that these changes should be highlighted to the committee; however, I do not feel they are significant enough to warrant a new application, though please do correct me if I am wrong. The empirical data that forms part of my PhD research is being collected over two separate phases. The first is now complete and involved collaboration with Hampshire County Council on the MAPPED project. The MAPPED project involved people with disabilities and older people aged 65 and over testing specially designed handheld navigational devices with additional accessibility information. However, there were some limitations to the amount of data that was collected throughout this project (explained below), and this is why I feel that it is necessary to change the method being used within the second phase of data collection of my own study.

The MAPPED project, which began in September 2004, was already in its latter stages when I initiated involvement in August 2007. This meant that much of the design process and many of the decisions about the way the handheld navigational devices were to be tested had already been made by the consortium. Therefore, upon reflection, there were limitations to how the collaboration would work and the nature of the input from myself. Notably, these limitations meant that I had less involvement in the research strategy and design of data collection instruments than I would have liked. The time pressures and deadlines imposed by the MAPPED project consortium also had to be adhered to.

I led the investigation for the second stage (of a total of four) of data collection for the MAPPED project. This stage involved seven people aged 65 and over in the trials of the handheld navigational devices. The sample did reflect a wide age range of participants, as well as a fairly equal gender split (four female and three male). However, all of the participants in this sample considered themselves to be fairly active or active, in good or fairly good healthy, and were of white British origin. The trials also specified that participants must have some prior experience of using either the internet or a mobile telephone. Thus, this sample of participants did not draw from the widest possible population of older people. An aim of phase two is now to draw on a sample of older people in a broader range of life circumstances, which will seek to include those with health problems, disabilities, and ethnic minorities.

My original plan for the data collection method of phase two was to complete a number of focus groups with a sample of older people aged 65 and over. The intention of these focus groups was to enrich the data by exploring in further detail the significant issues that were arising from the trial data. However, the trial data ended up being less detailed than I first anticipated due to compromises made when the research instruments were designed. It

was also felt that the group dynamics of the focus group method may unintentionally intimidate precisely the participants that were wanted. Phase two of the data collection of this study will now involve up to 20 individual in-depth interviews with people aged 65 and over. Hypothetical vignettes will also be used within the interviews in order to place the participants in different mobility situations to explore their feelings over the potential of technology for assisting later life mobility. Vignettes are short stories about hypothetical characters in specified circumstances, to whose situation the interviewee is invited to respond. The gap in thinking around the concept of mobility, which was highlighted from my literature review, meant that I had to reconsider the method for collecting data during the second phase of this study. I feel that this change will therefore strengthen the theoretical underpinnings of the study. I felt that a better understanding of the dimensions of later life mobility would come from a wider sample of older people, and it was considered important for the second phase of data collection to encompass this. This change has also been approved in the meeting where I upgraded from MPhil to PhD status on 16th October 2008.

Draft copies of the revised data collection instruments for phase two of this study, including the information sheet, consent form, and interview schedule, are also included with this letter. I hope this letter clarifies the changes that I am making to the method being used within the second phase of data collection, the reasons why I feel this is necessary, and how this will ultimately strengthen the theoretical underpinning of my research. Please do not hesitate to contact me if anything is unclear, or if you need any further information.

Kind Regards,

Miss Michelle Heward

Postgraduate Research Student,
School of Social Sciences,
University of Southampton.

Appendix 22: MAPPED project post-trial newsletter – feedback sent to MAPPED project participants

April 2008

mapped - Finished but not forgotten

So, the MAPPED Project has drawn to a close and now the panic of reporting and audits are over we thought it was about time we let you know what conclusions have been drawn from the trials and the future for mobile journey planning.

Thank You!

Firstly, a big Thank You again to everyone who took part in the field trials or gave us their expert opinion on the MAPPED prototype. We had a total of 34 disabled and elderly end users, plus 22 experts and POI owners giving us valuable feedback and data. The project would not have been possible without your patience in testing emerging technologies and your resilience to the great British weather!

Trial results

The main conclusions drawn from the trials are that the concept was well received, the MAPPED software was accepted by trialists, but the hardware is not necessarily suitable for all end users. Other key points are that:

- There is definitely a need for improved travel information and mobile journey planning services amongst disabled people – an overwhelming 84% of end users felt a system like MAPPED would be useful to them (see figure 1).

- The majority of trialists were satisfied with ease of use and felt the system was fairly easy to learn to use, particularly after they had become familiar with it.

- There is potentially a much wider market for MAPPED e.g. the elderly, carers, as a tool for occupational therapists etc.

- There is an awful lot of work involved in making MAPPED commercially viable and a nationally available journey planning tool.
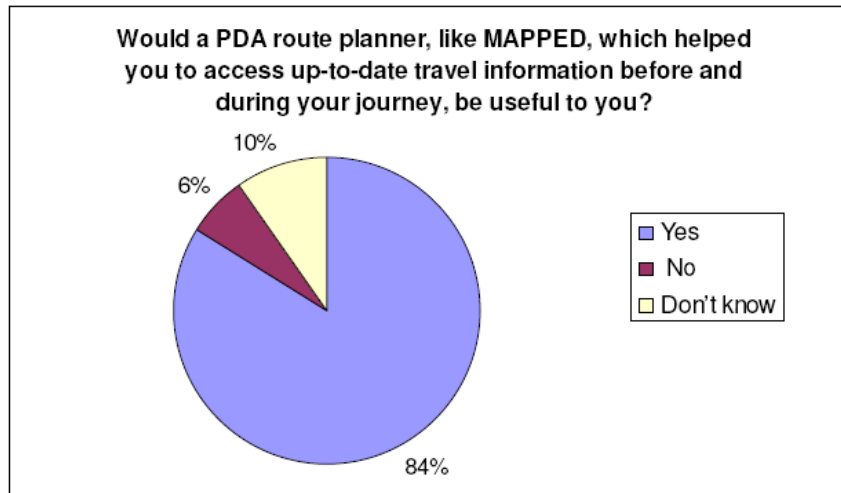
Figure 1: Usefulness of a mobile journey planning service.

Areas for improvement

As mentioned earlier, many users encountered difficulties using the PDA. These form the basis of many of our recommendations for a future mobile journey planning system, improvements suggested include:

- Stronger GPS signal and receiver (out of our control unfortunately, but likely to improve in the near future)

- Increase speed of response (linked to GPS and phone signal strength)

- Larger buttons and text size, and a larger, less reflective screen

- Orientation information (e.g. digital compasses are just coming onto the market which could be integrated with MAPPED)

Unfortunately, it would be virtually impossible to source a PDA which best matches the requirements of all potential end users as everyone is so different in terms of their manual dexterity, eyesight and personal preferences. While certain general improvements could be made for a more robust, user-friendly unit, the main conclusion we have drawn is that the software should be available in a format that allows it to be used through the user's choice of hardware e.g. PC, mobile phone, PDA etc.

The future of MAPPED

As a local authority, ******** ********* ****** can only assist in the research and development of tools like MAPPED. However, one of the consortium partners, or another organisation, may be interested in developing the MAPPED system in the future. If they are to do this they will have to assess the commercial viability of such a product. Preliminary conclusions on this issue are that there is a need for a mobile journey planning system, and a much wider potential market than initially envisaged. However, it would be a significant undertaking and there are concerns about how to fund such a system. Many end users were prepared to pay a small monthly charge for MAPPED, but this is unlikely to cover the full cost of delivery. There was a positive response from local businesses and organisations who would be willing to assist with the upkeep of the POI database, essential if MAPPED were to be rolled out over a larger scale.

The technology tested within MAPPED is relatively new. While satellite navigation systems for car journeys are now widely available, the same service for pedestrians, particularly including detailed accessibility information, are not yet commercially available. Rapid advances in communications and hand-held computer technology mean it is only a matter of time before a system like MAPPED can break into the market, either as a stand alone product or add-on to existing journey planning systems.

Watch this space…!

For more information on MAPPED or developments in journey planning being researched by ****** ******* *****, please contact ************* ************************* ****************** *****************

Appendix 23: Data analysis: Coding frame

1.1 Travel behaviour in later life
  1.1.1.   Modes of transport used
  1.1.2.   Average number and distance of journeys per week
  1.1.3.   Familiar versus unfamiliar journeys
  1.1.5.   Structured days, routine lifestyles
  1.1.6.   Travel needs, expectations and problems

1.2 What is travel based mobility?
  1.2.1. Move around or get around unaccompanied
  1.2.2. Takes me where I need to go
  1.2.3. Using transport or assistive technology
  1.2.4. The free bus pass
  1.2.5. Not sure/don't know

1.3 The importance of travel-based mobility in later life
  1.3.1.   How important is travel-based mobility and why?
    1.3.1.1. 'Everyday life'
    1.3.1.2. Independence and individualisation
    1.3.1.3. The fluidity of independence in later life
  1.3.3.   Temporary spells of immobility due to poor health
  1.3.4.   Not wanting to become immobile or less mobile

1.4 Motivations for travel-based mobility in later life
  1.4.1   Reasons why older people undertake travel-based mobility
        1.4.1.1. Shopping for groceries
        1.4.1.2. Shopping for other items
        1.4.1.3. Work and voluntary work
        1.4.1.4. Religion
        1.4.1.5. Helping friends or family
        1.4.1.6. Organisational meetings
        1.4.1.7. Meeting people
        1.4.1.8. Library
        1.4.1.9. Leisure activities
        1.4.1.10. Doctors & hospital appointments
        1.4.1.11. Fresh air
        1.4.1.12. Exercise
        1.4.1.13. Banking and paying bills
  1.4.2   The role of social networks
  1.4.3   Household composition: individual versus couple mobility
  1.4.4. Safe, Accessible, Reliable and Affordable (SARA) transport

1.5 Conceptual framework: factors that impact travel-based mobility in later life
  1.5.1 Micro level influences (internal)
      1.5.1.1 Social class
      1.5.1.2 Socio-economic status
      1.5.1.3 Gender
      1.5.1.4 Age
      1.5.1.5 Ethnicity
      1.5.1.6 (Dis)ability
      1.5.1.7 Health
  1.5.2   Dimensions of mobility
      1.5.2.1 Physical/travel-based
      1.5.2.2 Assistive
      1.5.2.3 Virtual/imagined
  1.5.3   Facilitators/barriers of mobility
      1.5.3.1 Fear
          1.5.3.1.1   Falling

Appendix 24: Summary sheet detailing main findings of both phases – feedback sent to all participants

SUMMARY SHEET

Thank you for taking part in the MAPPED project or the Getting Out and About project, which together feed into my PhD study at the University of Southampton titled 'Mobile, connected, included? How information and communication technology can support later life travel-based mobility'.

This summary sheet provides you with details of the main findings of each of the studies, as well as some feedback about my PhD studies.

Michelle Heward – email: michelle.heward@soton.ac.uk

The MAPPED Project

Project overview

During the MAPPED project a sample of older people, and people with disabilities tested handheld satellite navigation (sat nav.) devices. The hand held devices looked like mobile phones (see the picture), and worked in a similar way to the in-car GPS systems, such as Tom-Tom. The handheld devices were tailored to offer users the following services:

- *Journey planning software:* tailored to match the chosen mode of travel, and (dis)ability level of the user. The output can easily be switched from pictures to sound.
- *Real-time journey information*: such as which bus stop to use and what time the next bus will arrive.
- *Points of Interest (POI):* the system informs the user if, for example, the place they are visiting has wheelchair access or provides Braille leaflets.
- *Geographically indexed accessibility information:* tailored to the (dis)ability level of the user the system, for example, informs the user in advance if disabled access ramps are positioned, and if so where to find them.
- *Disabled friendly mobile user interfaces:* for example, larger keyboards are available to visually impaired users.

The purpose of the MAPPED project was to find out what the participants thought about the handheld devices and the information and services which they offered.

Main findings

The participants felt that:

- The overall concept and functions of the handheld navigational device, and the quality of the accessibility information available were excellent

- There was a mixed reaction regarding whether the MAPPED software was viewed as user friendly or not

- The handheld device was slightly too heavy

- The Points of Interest function was useful for unfamiliar journeys

- The journey planner was helpful when undertaking an unfamiliar journey or to check if there was an alternative route

- Accessibility information was extremely helpful, however some of the participants felt that they would not use it at this particular time in their lives but may need it in the future. This view is summarised by one participant: "the handheld would certainly be useful if you're in a wheelchair or with a friend that's in a wheelchair, you know to find out if there were steps on route, and also where you could park. I suppose another thing with wheelchairs you need to know about steep slopes as well, which this did tell us" (Male aged 80 years old)

- None of the participants felt unsafe whilst walking around with the handheld device in their hands during the trials; however they did acknowledge that it could be a possible target for crime

- There were limitations with the actual handheld navigational devices tested, and these included: the poor GPS signal strength; the small screen and buttons; and the poor quality colours and maps that made the device difficult to use

- The participants felt that a number of these handhelds could be available to borrow from public libraries

- One participant suggested that the companies involved with developing this type of technology could invest "some of their profits back into local or national schemes where the ordinary populace are involved in learning about technology, government has done it in the past like setting up computer cafes and things but they tend to withdraw the funds after a couple of years and it would be nice if industry could back it up" (Male aged 71 years old)

Your suggestions for future improvement

Many participants encountered difficulties using the handheld navigational device and the MAPPED software. They recommended a range of things to improve the design of future mobile journey planning system, these included:

- Stronger GPS signal and receiver
- Different PDA design with sliding keyboard and larger screen
- Larger buttons and text size
- Larger, less reflective screen
- Different colours such as black and white, and blue and yellow (especially on the maps)
- Neck strap

- Weather proof carry case
- Attaching the stylus to the device (to avoid dropping it)
- Non slip grip on the side of the device

Future development of the MAPPED project

A further project testing similar software on the iphone and sony vaio is currently being undertaken by ******** ******* *********. Whereas, in car satellite navigation systems are now widely available, this type of handheld technology is relatively new. However, since the MAPPED project there have been rapid advances in mobile technology, such as the iphone. This means that much of the information which the MAPPED software offered is becoming more readily available. An exception is the MAPPED project accessibility information which is, as yet, not available to the public. Further research is needed to determine the types of accessibility information that would be useful for older people and people with disabilities, as well as the best strategies for making this information easily accessible (online, printed material, telephone service etc).

The Getting Out and About project

Project overview

The purpose of the Getting Out and About project was to look at how information and communication technology (ICT) might be used to assist the mobility of people aged 65 years and over living in urban areas. The participants took part in individual in-depth interviews, in which the following topics were discussed:

- Travel needs, expectations and problems
- Awareness, access and use of ICT
- How ICT currently supports travel in later life
- Travel-based mobility in later life

The purpose of the study was to find out about the local travel patterns, and the level of access and use of ICT of older people within ********. The study also looked at how the participants felt about undertaking virtual journeys, such as internet shopping or sending an email, instead of physical journeys.

Main findings

"I would probably be like a bear with a sore head if I couldn't get out and about" (Female aged 66 years old).

Amongst this sample:

- Car ownership is likely to decrease as people age; therefore older people are increasingly likely to rely upon public transport as they age

- Car drivers are likely to travel further and more frequently then those who use public transport in later life

- Older people are more likely to undertaken familiar rather than unfamiliar journeys in later life

- Unfamiliar journeys in later life are more likely to be undertaken in a car

- Lack of information and personal level of motivation were the most significant factors that the participants gave for not undertaking unfamiliar journeys in later life

- Factors that impact mobility in later life, were: health; access to public and private transportation systems and services; assistive technology; accessible travel information; fear of crime and youth culture; social networks; weather; condition of pavements and roads; access to public toilets; time of day; and day of the week

- The participants expressed a need for reliable, accessible and affordable transport. And they expected clean, safe and quick transport with friendly bus drivers

- The reoccurring problems with public transport services were bus drivers' poor attitudes, lack of information about changes to bus routes, the declining bus service which they had experienced lately, and the expensive cost of rail travel

- The participants associated mobility with being independent and felt that being able to do things for themselves, and not relying on others, was an essential part of this

- Specific reasons for undertake mobility included: shopping for groceries; shopping for other items such as consumables; work and voluntary work; attending religious services; helping friends or family; organisational meetings; meeting people; attending social events; visiting the library; leisure activities; doctor & hospital appointments; to get fresh air; exercise; walking; banking and paying bills; and going to the post office.

- Friends and family were sources of support, and it meant that if others were unwell or in need of extra support then they would pull together to make sure they had everything they needed

- The people living in a house also impacted mobility, as sometimes journeys were made for these people as well as for themselves

- The participants were generally unhappy with the bus service offered locally

- Some participants felt that the free bus pass had led to the deterioration of the bus service, including cuts to the frequency of buses on some routes, and the disappearance of some bus routes all together

- Roughly half of the sample used information and communication technology such as the internet or a mobile telephone, and half did not

- Those who used the internet described a wider range of experiences in terms of both access and use

- Some of those who used the internet used it regularly to keep in touch with friends and family, search for information or for their own pleasure. Whilst those who used the internet occasionally did so to search for information and described this use in terms of need

- The sample had a mixed reaction to the idea of virtual journeys, such as online shopping and sending an email. Those who used the internet regularly were more likely to feel comfortable undertaking virtual journeys.

- The sample thought that virtual journeys would be most useful during spells of ill health which caused limited mobility

My PhD studies

I am currently writing up the results of the MAPPED project and the Getting Out and About project, which form part of my PhD study 'Mobile, connected, included? How information and communication technology can support later life travel-based mobility'. I am using both projects as examples of how information and communication technology can support travel in later life. There were limitations with the handheld navigational device tested during the MAPPED project. However, despite these weaknesses, the positive attitudes of the participants show the usefulness of this type of device, and the potential for developing these ideas further. The participants felt that if older people and people with disabilities were to be involved from the start of the design process then the outcome would be more suitable for their use.

The Getting Out and About project shows that some older people are using information and communication technology in many different ways, depending on their individual circumstances. Some older people are substituting or supplementing physical with virtual journeys, for example by shopping for groceries over the internet. However, not all older people can afford to, have the skills to, or want to use information and communication technology. Therefore, adequate training and public access points are essential if the numbers of older people using information and communication technology are to increase. This research shows that information and communication technology can support travel in later life by increasing access to information and services, however, use of such technology remains a choice made by the individual.

Once again a big thank you for taking part in the MAPPED project or the Getting Out and About project. Your input was invaluable and without it my PhD study would not be possible!

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