Cycling experiences: exploring social influences and gender perspectives

Anja Susanne Dalton

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Faculty of Health and Applied Sciences/Centre for Transport and Society, University of the West of England, Bristol, UK

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Abstract

Whilst a significant gender gap in bicycle usage in the UK has been apparent for some time, the reasons why women are cycling less than men has not been comprehensively studied. Similarly, whilst we know that people influence each other's travel choices, social influence and cycling have been little studied. This qualitative research added to knowledge of this important health and transport policy area by providing new data on women's and men's experiences of cycling in two UK cities; Bristol and Cardiff.

A reflexive sociological perspective, which combined influences from both critical realism and feminism, informed the research and shaped the research design and the data production and analysis. A total of 49 discussions were conducted with females and males who currently cycle, using a novel two-stage methodology, involving 42 semi-structured interviews and 7 linked social reference focus groups (SRFGs), with social contacts of the initial interviewee. This method was designed in order to detect social influence on (inward) and from (outward) research participants.

The data were analysed using thematic analysis and presented using five key themes; affective barriers, affective enablers, instrumental barriers, instrumental enablers, and gendered aspects of the cycling experience. Key differences were identified around aggression and competitiveness in cycling, gendered norms on clothing and appearance and the continuation of gendered social roles. However, a

large degree of commonality between men and women was also present, especially around the desire for a safer and more attractive cycling experience.

Social influence was explored using 'social maps', which participants made to describe their key social influences related to cycling. Social influence was gendered, with women more likely to encourage other women, and men other men. Participants also portrayed their influence as largely positive, with no or few negative social influences, although instrumental influencers were sometimes viewed as negative.

The research highlighted the need to encourage women to cycle by both providing better for their infrastructural needs, but also to recognise the often different ways in which they might approach cycling in policy initiatives. Further research could explore ways in which this could be achieved, and also provide a comparative analysis of men's and women's cycling experience between a UK location and a high-cycling country location, such as the Netherlands, Denmark or Germany.

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Glossary

Affective - defined by the Oxford Dictionary as an adjective from psychology 'related to moods, feelings and attitudes (Oxford Dictionaries, 2015), I use this word to describe the more emotional side of cycling behaviour, such as feelings about social roles, aggression from drivers and cyclists and the freedom and fun which can be experienced when cycling. In Chapter Six, my gender results chapter, my key findings are divided into instrumental and affective factors. Clearly it is difficult, if not impossible, to entirely separate these two aspects, since in many people's minds instrumental and affective aspects are to varying degrees combined. However, I have used this term when I believe that it is the dominant element in the matter under discussion.

Alters – This term, which is borrowed from social network analysis (SNA), refers to the social contacts of my initial interviewees (or egos). The focus of SNA is on peoples social or 'ego-networks', and upon the relationships of the group, rather than an individual's attributes (Edwards, 2010). Alters could be family, friends or colleagues of the initial participant or ego.

B&BRP - Bristol and Bath Railway Path: a traffic-free cycling and walking path between the cities of Bristol and Bath on the route of a former railway line, built by Sustrans in the late 70's and early 80's, which is an extremely popular part of the National Cycle Network. It carries upwards of 2 million walking and cycling trips per year, according to Sustrans (Sustrans, 2015).

Computer Assisted Qualitative Data Analysis (CAQDAS) - This term refers to computer software packages which aim to assist researchers with the analysis of

qualitative data. Depending on the package used many forms of data can be stored, such as audio recordings, text based data such as interview transcripts, maps and images, and video, and different functions can enable coding, searching and querying and a host of other ways of viewing the data. Some current CAQDAS programmes which are currently used are: Atlas.ti, MAXQDA, NVivo and Transana.

Connect2 – a Sustrans Big Lottery funded programme which aimed to build walking and cycling bridges to connect communities severed by roads, rivers or railways. According to Sustrans the Connect2 project created 84 individual new walking and cycling networks in England, Wales and Scotland, delivered in the 5 years between 2008 and 2013. For more information, see (www.lotterygoodcauses.org.uk/project/sustrans-connect2)

CTC – The Cyclist's Touring Club as they were historically known, have now changed their name to 'CTC - the national cycling charity.' They were established in 1878 as the 'Bicycle Touring Club', largely by people interested in cycle touring, or leisure bike rides of a long duration. There are hundreds of local groups of the CTC across the country, including groups in Bristol (http://www.cyclebristolctc.org.uk/) and Cardiff (http://www.spokes-ctc.org).

Cyclenation – The federation representing local cycle campaign groups at a national level. There are local cycle campaign groups both in Bristol: Bristol Cycling Campaign (http://www.bristolcyclingcampaign.org.uk/) and in Cardiff: Cardiff Cycling Campaign (http://www.cardiff-cycling-campaign.co.uk/).

Egos – A term borrowed from social network analysis (SNA), which describes the original participants or interviewees in a research study which focusses on the

relationships in a person's social network (Hawe and Ghali, 2008). The egos who participated in Stage 2 of the data production process, passed on contact details for members of their social network, called alters, who I then interviewed in the social reference focus groups (SRFGs).

iConnect –The iConnect Consortium (Impact of Constructing Non-motorised Networks and Evaluating Changes in Travel) was a research study aimed at evaluating the travel, health and environmental impacts of Sustrans Connect2 infrastructure. The research project ran from 2008 – 2013 and was a partnership between academics at nine different Universities. The results from the iConnect study are briefly summarised in Section 8.7. For further information see (www.iConnect.ac.uk).

Instrumental – defined by the Oxford Dictionary as an adjective 'serving as a means of pursuing an aim' (Oxford Dictionaries, 2015), I use this word to describe the more practical and pragmatic side of cycling behaviour, such as weather, topography, cycle clothing and cycling facilities. In Chapter Six, my gender results chapter, my key findings are divided into instrumental and affective factors. Clearly it is difficult, if not impossible, to entirely separate these two aspects, since in most people's minds instrumental and affective aspects are to varying degrees combined. However, I have used this term when I believe that it is the dominant element in the matter under discussion.

Mode – transport term describing a way of travelling or type of transport the person is using (i.e. bus, bicycle, car, walking).

NGO – Non-governmental organisations (NGOs) can be defined as '*organisations whose purpose is for the public good, but not governmental or profitable in nature*' (Thrandardottir, 2015). NGOs range in scope and scale from localised and/or single issue groups (Volunteer Bristol, Bristol, UK), to large and well-funded global organisations (Amnesty, Greenpeace, WWF).

SRFG – Social Reference Focus Group: This is a term coined during discussions with myself and my supervisory team to describe Stage 2 of my novel methodology. SRFGs are focus groups consisting of members who are social contacts (colleagues, family and friends) of the original interviewee, from Stage 1. The primary purpose of the SRFGs is to ask the contacts of the original interviewee about their cycling and so to analyse inward and outward social influence around cycling. They are described more fully in Chapter Five, Section 5.3.6.

Sustrans – A UK based sustainable transport charity, Sustrans is the NGO behind the National Cycle Network, and also works on many other projects which encourage people to cycle, walk and use public transport. It was initially established in Bristol in the late 1970's as 'Cyclebag', by a group of people including John Grimshaw, who ran the organisation for many years. (www.sustrans.org.uk)

Chapter 1:   Outline of this thesis

1.1   Introduction to the topic

In this chapter I will provide a brief overall introduction and orientation to the research, which I will then describe in greater depth in the subsequent chapters. I will firstly give a concise introduction to the subject areas: gender, cycling and social influence and the importance of studying such topics. My aims were to understand how people's cycling is shaped by their gender, culture, available infrastructure, and local environment, and to discover what role is played by social influence in encouraging cycling.

I view the research topic through a sociological lens, which takes material from several fields, the most important of which are health and transport. My personal interest in this subject and my motivations for undertaking this piece of work are outlined next. The methodology and how I arrived at my research aims, objectives and questions follows. The data production locations, the UK cities of Bristol and Cardiff, are then described briefly and justifications for selecting them are given. Finally, I summarise how the remainder of the thesis is structured and succinctly outline the contents of each chapter.

1.2 Gender, social influence and cycling

The economic (Cycling England, 2007; Darnton, 2009, Davis, 2010), environmental (Gatersleben and Appleton, 2007; Hillman, 1997) and health and social (Buehler *et al.*, 2011; Davison and Curl, 2014; Handy *et al.*, 2014; Jacobsen, Racioppi and Rutter, 2009) benefits of cycling both for the individual and for the wider society have been well documented. However, cycling is unequally distributed in many places, with groups such as older people, ethnic minority groups and females less likely to choose to use a bicycle (Steinbach *et al.*, 2011).

Women use a bicycle considerably less than men both in the UK (Department for Transport, 2014), and indeed in other countries with low levels of cycling such as Australia and the USA (Garrard, 2003; Bell, Garrard and Swinburn, 2006). This inequality has health, environmental and societal impacts. However, in Holland, Germany and Denmark and other countries where cycling is widespread and normalised, and there is good provision and support for cycling (Heinen and Handy, 2012), women cycle just as much and indeed, sometimes more than men (Garrard, 2003). Exactly why this is the case has not been fully and comprehensively detailed, and I identified this as a knowledge gap whilst conducting my literature search. This thesis therefore explores the current cycling experiences of men and women in two locations in the UK, in order to understand some of the reasons why women are bicycling less in the UK and what might lead to an increase.

One potential mechanism for increasing women's cycling; social influence, including any gender difference present, is explored in greater depth using a novel methodology. A structure and agency perspective based on critical realist theory was employed to examine how cycling is viewed in the transport and health areas. Alongside this an innovative, flexible, qualitative research design was utilised to investigate the gender and social influence aspects of cycling. Using interviews and social reference focus groups (SRFGs) (see glossary, p.XIV and Section 5.3.6), 49 discussions were conducted in both Bristol (pilot study) and Cardiff (main research location). The data were collected in 2010 – 2011, and were analysed using thematic analysis to produce a rich and detailed account of participant's instrumental (practical) and affective (emotive) experiences of cycling (see glossary, p.XIV). I then built on these accounts to determine potential policy measures aimed at increasing gender equality in cycling.

1.3   My motivations and interests in undertaking this study

Unlike most people of my generation in the UK, I did not grow up knowing how to cycle, but instead learned in my late twenties on the Bristol and Bath Railway Path (B&BRP) (a traffic-free walking and cycling route near my home – see glossary on p.XIV). Although I cannot clearly remember why I did not take to the bike as a child it is recounted as a family story. I was four and had just moved to Ivybridge in South Devon with my family. All the other children in the street could already ride their bikes and as they watched my efforts with my bike with stabilisers they laughed,

which caused me to be embarrassed and want to give up learning to cycle. My parents, not wishing to force the issue, abandoned attempts to teach me to ride unaided and so unfortunately a valuable skill was not acquired at that time.

Later, as an adult, my husband taught me to cycle on the B&BRP and this has become a life-changing experience for me in many ways. I live next to the B&BRP, and use it nearly every day; as a walker, runner and cyclist. It has affected my professional life and personal life in equal measure. It helps to shape how I view what is possible in terms of movement in the city, and has affected my travel choices to a large extent, including my decision not to drive or own a car. The independence and freedom which travelling by bike has given me is immense, which is a recurring cultural motif across different places and times in history, especially for women (Al-Mansour, 2012; Avineri *et al.*, 2010; Hanson, 2010; Robinson, 2009).

However, I have often noticed the difference between how I try to approach cycling - as a utilitarian, egalitarian and enjoyable activity, undoubtedly influenced by my part-continental background - and the competitive and sport-orientated nature of much of UK cycling. As a female cyclist and a feminist, I was also drawn to understanding the factors that encourage and discourage female and male cyclists, and to finding ways of making cycling more accessible to women. I also worked for several years for Sustrans (see glossary on p.XIV), a sustainable transport charity, who are the organisation behind the building of the National Cycle Network (Sustrans, 2015) which includes the B&BRP (see Section 5.4.4). As well as my work

there, I have also chaired Bristol's Bike Forum, helped to run Carfree Bristol and Carfree UK and have undertaken research for Bristol City Council into cyclists' interactions with other travellers. These experiences cemented my interest in cycling and in sustainable transport generally. They led to a desire to find out more about people's everyday experiences of cycling and ultimately to this doctoral research and the writing of this thesis.

1.4 Research Aims, Objectives and Research Questions

The main focus and interest in this study is the way in which gender impacts on people's willingness to cycle and whether (and how) those who do take up cycling may socially influence others. It is argued that such behaviour may have the potential to create a 'virtuous circle' whereby those who take up cycling encourage others to do so; over time creating a significant transport and cultural shift which promotes greater levels of walking and cycling (Avineri *et al.*, 2010; Sherwin, Chatterjee and Jain, 2014). The aims and objectives were developed following the policy and literature reviews detailed in Chapters Two, Three and Four and the gaps in the literature which were identified as a consequence of undertaking these reviews. The aims detail what I wanted to achieve by undertaking this research, and the objectives form a bridge between the aims and the research questions; giving more detailed information on how I would achieve this. Having aims, objectives and research questions enabled me to fully detail what I wanted to find out and ways of

realising that aim; they provided a comprehensive structure with which to take my research forward.

1.4.1 *Aims:*

1) To examine the gender differences present in cycling in the UK and explore the most important reasons for the lack of participation in cycling by women.

2) To understand the relationships between culture, environment, infrastructure and gender in cycling behaviour.

3) To discover how social influence operates in persuading more people (and especially more women) to cycle.

All of these aims will be answered through a combination of literature review and by primary fieldwork.

1.4.2 *Research Objectives:*

1) **Understanding the context**: to explore the existing evidence base relating to gender and cycling and determine the underlying structures which operate to influence the current disparity between the levels of cycling undertaken by men and women.

2) **Exploring practical and social factors**: to better understand the ways in which those who cycle are influenced by instrumental and affective (see glossary on p. XIV for definitions) dimensions for both genders, but particularly women.

3) **Assessing behavioural change**: to determine how cyclists may or may not socially influence their friends, family and colleagues and in turn be influenced by them.

4) **Using the evidence**: to disseminate insights from the study in order to influence future cycling policy to better reflect the concerns of both women and men.

The policy and literature reviews detailed in Chapters Two and Three explore research from the transport (both advocacy and academic perspectives), sociological, sustainability and health fields on wider transport issues, and more specifically, gender and cycling. In Chapter Four I give a brief overview of approaches taken in the behavioural change fields which inform the part of this study which is examining the role social influence plays in cycling, both positively and negatively. When constructing the research design I attempted to find the most appropriate way of answering the research questions below; in this case I believed that a flexible qualitative design using semi-structured interviews and linked SRFGs was the most suitable (see Section 5.3.3 for more detail). It is intended that such an approach will give voice to how men's and women's experiences of cycling may converge or diverge. I will also show how people may be influenced by others in a social context to adopt new or different behaviours. A detailed discussion and justification of the methods employed is in Section 5.3.

1.4.3 Research Questions:

To provide the contextual background to the research questions it is necessary for me to describe the fact that the research was conducted in two phases, each consisting of two stages:

a) Phase 1: A pilot study based in Bristol which trialled the use of the semi-structured interviews (Stage 1.1) and linked SRFGs (Stage 1.2) (see glossary on p. XIV).

b) Phase 2: The main data production phase, conducted in Cardiff, which built upon the methods refined in the pilot study, and which also involved semi-structured interviews (Stage 2.1) and SRFGs (Stage 2.2).

The research phases and stages are discussed in greater detail in Section 5.4.

Research Questions

1. In what ways do men and women perceive barriers to and enablers for using cycling as a mode (see Glossary, p. XVI) of transport for utilitarian, commuting and leisure needs?

2. What role does social influence play in encouraging people to cycle?

3. How is gender difference apparent in the ways in which social influence operates on peoples' participation in cycling?

> *4. Do SRFGs provide a consistent and dependable method of examining social influence in relation to men's and women's participation in cycling for transport and leisure purposes?*
>
> *5. How can the enabling cultural and instrumental factors which encourage women's participation in cycling best be facilitated?*

1.5 The study area context: Bristol and Cardiff/Penarth and their respective cycling cultures

Bristol, England was chosen as the location for the Pilot Study (Phase 1, Stages 1.1. and 1.2), conducted between April and September 2010. This selection was made after Cardiff had been decided upon for Phase 2; the reasons for this are outlined in Section 1.5.2. The main data production phase (Phase 2, Stages 2.1 and 2.2) was undertaken in Cardiff and neighbouring Penarth, Wales, between October 2010 and March 2011. In this section I describe the two cities briefly and provide a summary of the reasons for their choice as research locations. A fuller contextual background to them, and a more detailed justification for their selection is given in Chapter Five.

1.5.1 Bristol and Cardiff/Penarth; the cities and their cycling environments

Map 1 shows the geographical location of the two data production location cities of Bristol and Cardiff/Penarth in relation to the rest of the South of England and much

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of Wales. A brief description of the two cities is given, including an introduction to their cycling infrastructures and cultures. A justification of why these locations were chosen is then presented in Section 1.5.2. Fuller information on the data production locations is given in Sections 5.4.4 and 5.5.4.

Map 1: Regional map showing the locations of the two data production locations: Bristol, and Cardiff and Penarth

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The urban area of Bristol, located in the South West of England, is a medium-sized city with a population of 442,500 (or 714,600 including neighbouring South Gloucestershire) (Office for National Statistics, 2014b). The city overall has a relatively affluent population and has one of the highest levels of car ownership in the country (Bristol City Council 2011a). It is also home to a number of sustainable transport and cycling organisations and a range of cycling-related businesses and has approximately 155km of cycle lanes and paths (Chris Mason, Bristol City Council,

pers. comm. 28/09/15). The two local authorities of Bristol and South

Gloucestershire were jointly awarded the UK's first Cycling City status by Cycling

England between 2008 and 2011. The city was later awarded Green Capital status

for 2015, partly due to 'its investment plans in the areas of transport and energy'

(*McCormick, 2015*).

Cardiff is a unitary authority and the capital city of Wales with a population of

346,000 (Office for National Statistics, 2014b). Located in the South East of Wales,

it is host to many cultural, business and service industries, as well as the Welsh

Government (WG) (formerly Welsh Assembly Government). The city is also a

popular tourism destination, with 14.6m visitors in 2009 (Bolter, 2010). Like Bristol,

it gained much of its former wealth from being an industrial and port city, and also

in common is the recent redevelopment of these historic harbour side areas as

places for living, working and leisure. Penarth is a seaside town located 5 miles to

the South West of Cardiff city centre which is administered by the Vale of

Glamorgan local authority. Many of its population of 23,245 (Vale of Glamorgan,

2014) commute into Cardiff; in fact it has the highest rate of outward commuting of

any local authority in Wales (ibid.). There are a high number of older, retired

residents also (ibid.) as is common in UK coastal towns (Oven *et al.,* 2012). Penarth

was chosen alongside Cardiff since the Pont y Werin (The People's Bridge) (see

Section 1.5.2) connects the two locations.

As the largest cities in their respective locations, both Bristol and Cardiff are transport hubs serving the surrounding areas. Bristol Temple Meads and Cardiff Central railway stations are central stations, and local rail lines serve the many districts and outlying towns surrounding them. There is also an integrated transport hub at Cardiff Central railway station with the bus station being located directly in front of the railway station. Several popular traffic-free walking and cycling routes, such as the Taff, Ely and Rhymney Trails form part of an overall provision of cycle routes of 94km (Cardiff Council, 2011). However, research conducted in 2003 into people's commuting behaviour found that: 'cyclists in Cardiff appear to be influenced to a greater extent by deterrents to cycling and as a result will need a greater level of improved facilities to increase cycling numbers' (Department for Transport, 2004). Cardiff was chosen to be the first Sustainable Travel City in Wales in 2009, and developed the Cardiff Cycle Network Plan in 2011, which was intended to strengthen the existing cycle network and to increase the numbers of people choosing to cycle (Cardiff Council, 2011). Like Bristol, Cardiff would seem to have some way to go towards achieving a comprehensive and safe cycling infrastructure and high rates of cycling, and can therefore be considered to be an emergent, rather than an established cycling location.

1.5.2   Justification of Bristol and Cardiff as research locations

The choice of where to situate the data production phases was based on three main factors: pragmatic considerations, the similar characteristics of the two cities, and also due to the location of the Pont y Werin Cardiff Connect2 site (and the iConnect

programme which my PhD research was initially part of) (see glossary, p. XVI for

details of these programmes). Bristol and Cardiff are both medium-sized cities and

share some common characteristics such as: a history of heavy industry, being

centres for arts and cultural activities, having dock areas which have been re-

developed into living, leisure and shopping areas and large populations of young

people and students (Aughton, 2003; Hooper and Punter, 2006). Neither city had a

very high rate of cycle commuting at the commencement of the research; 3%

(Cardiff) and 4% (Bristol). Both Bristol (by 94%) and Cardiff (by 65%) have since

increased their cycle commuting share, as the table below shows.

Table 1: Areas with the highest percentage increase of residents cycling to work, England
and Wales, 2001 and 2011.

	Counts		
Area	**2001**	**2011**	**Percentage Change (%)**
Inner London	43,494	106,219	144
Brighton and Hove	3,168	6,635	109
Bristol, City of	8,108	15,768	94
Manchester	4,610	8,426	83
Newcastle upon Tyne	1,781	3,223	81
Sheffield	2,365	4,267	80
Cardiff	3,514	5,791	65
Gateshead	816	1,314	61
Exeter	2,304	3,542	54
Leeds	4,189	6,237	49
Liverpool	2,686	3,970	48
Outer London	33,836	49,070	45

Note: This table is based on local authority data, with the exception of London where for
this table data has been calculated for Inner London and Outer London.

Source: (Office for National Statistics, 2014a) *Census 2001 and 2011, Office for National Statistics*

Bristol states that the rate of cycle commuting has nearly doubled to 7.5% in 2011 (Bristol City Council, 2014), partly due to the funds given during its time as Cycling City.

All of these factors together gave the two cities sufficient similarities to make conducting the two research phases there useful. If I had situated one of the phases in a city which much higher, or possibly even lower rates of cycling, for example, the research participants may have had very different everyday cycling experiences due to this.

Also, whilst as mentioned, both cities have popular traffic-free routes (largely part of the National Cycle Network), the city centres of both locations are difficult to navigate by bicycle, with some roads which are prohibited to cyclists (Queen Street in Cardiff and parts of Cabot Circus in Bristol). Bristol, therefore, provided a useful and pragmatic location to complement data production in Cardiff, since cycling levels were similar and they shared some common circumstances. It was important the two data production locations were similar in these characteristics, so that the mechanisms impacting on people's cycling in the two areas were not highly dissimilar. Cardiff was also a pragmatic choice in terms of being a realistic distance to travel regularly in order to conduct the interviews and SRFGs. This was largely an economic decision, since I was unable to fund either regular staying away from home or many instances of travelling to and from a distant data production

location. I travelled to Cardiff over 20 times in the course of my research, so costs to travel somewhere significantly further away would have been considerable.

Cardiff was chosen as part of the Sustrans Connect2 programme to have new facilities for walkers and cyclists – the Pont y Werin and its surrounding linking routes. The bridge itself connects Cardiff Bay on the Eastern side with Penarth on the Western side and was officially opened on 14th July 2010 (see Section 5.5.5 for a more detailed description of the bridge and some images of it in use). The Cardiff Bay Trail is a six mile long, mainly traffic-free route that has been developed around Cardiff Bay which utilises the Pont y Werin. The bridge was a major undertaking, costing £4.5m and providing the first new walking and cycling route in this area for many years. The iConnect project also chose Cardiff as one of the sites for their pre- and post-intervention survey, conducted in 2010 and 2011. I helped to investigate other potential locations for the iConnect data production, and one of the reasons why Cardiff was selected was due to the size and scale of the intervention and the ability to detect any changes in travel behaviour in the locality.

Although my research focussed mainly on the social and behavioural aspects of cycling, I considered it important to situate my data production in this area where such significant infrastructure was planned, in order to link in with the wider iConnect programme which I was a part of. It afforded me the opportunity to provide qualitative data on what people in the local area thought about the new infrastructure and to see how widespread their knowledge was about it. Therefore,

I incorporated a question about whether participants were aware of and had used the new infrastructure and this prompted a range of interesting responses for the project; both supportive and unsupportive.

1.6 The Structure of the Thesis

In this introductory chapter I have outlined briefly why, when and how I undertook this research and given a brief overview of cycling in Bristol and Cardiff where the data were collected. I will now describe briefly the structure and scope of the remainder of the thesis.

In Chapter Two I critique and discuss the policy and contextual background within the transport and health fields which relate to this research. I describe the different actors within the cycling policy community, such as cycling advocacy organisations and other NGOs (see glossary on p. XVIII), and local and national government. Understanding how these different actors have shaped current patterns of UK cycling is relevant to the research questions, in terms of understanding how the current pattern of cycling in the UK has been arrived at. I also introduce the idea of 'barriers' and 'enablers' to cycling. Chapter Three contains a literature review of gender and cycling, and also broader related debates within transport and health. In Chapter Four I review the literature concerned with behaviour change and social influence, as it relates to cycling and transport generally.

In Chapter Five the methodology is outlined: how I designed and conducted the research, the two key phases involved, and the locations used for the data production. I also describe my reflexive approach to the data production process, the strengths and weaknesses of the methodology and how I considered the ethical implications of the research.

The following two chapters all combine results from the data production process, and include a discussion of the implications of those results. The first of these, Chapter Six, focusses on the gender aspects of the research using material from the Stage 1 individual interviews: how women and men conceptualised their cycling experiences, and how barriers and enablers to cycling were perceived. In Chapter Seven I explore findings relating to social influence as perceived by participants, relating to their cycling, drawing upon material contained in both the SRFGs and the individual interviews.

Notable discussion emanating from the data, conclusions drawn from the data production and analysis process, and policy recommendations are contained in Chapter Eight. The chapter includes a reflection and discussion on how the methodology could be enhanced for future research projects. I also re-situate my research in the context of existing literature and evaluate what has been learned during the course of the doctorate, and make suggestions for further research related to this area. My references and appendices are provided at the end of the document.

Chapter Two now follows; a policy background to the thesis. It will outline how cycling and more broadly, transport generally has been viewed in recent history, within the health and transport fields. It also describes the role of cycling organisations in advocating for the bicycle and how their disparate philosophies may have in some respects contributed towards a worsening situation for many cyclists and potential cyclists.

Chapter 2:   Political and Historical Commentary on UK Transport

Before I explore the specific areas which I will focus on in this thesis; gender and cycling in Chapter Three and cycling and social influence in Chapter Four, some contextual background is necessary to show how current transport patterns have evolved. In this chapter I will describe some of the historical transport patterns in both the UK, and other, mainly European, countries, which have led both to very different cycling cultures and different use (or non-use) of the bicycle. Firstly I will outline how cycling usage has historically ebbed and flowed within a transport context which includes many other means of transport. The dominant mode in recent decades in most Western countries has been motor vehicles. In considering the fortunes of cycling, we must also look at what has been displacing both it and many other forms of transport; 'car-centric' culture (Urry, 2004). As a recent note to this particular discussion, the contemporary trends in lower car usage in high income countries are identified and their implications discussed.

Part of the picture of how we arrived at the current point for cycling in the UK, also involves examining those who have continued cycling, despite an often difficult environment, and those who have actively advocated for cycling. The cycling NGOs, their relationship to one another, and the ways in which they have (or have not) influenced transport policy is next considered in Section 2.2. How cycling has come to feature in the public health agenda over the last 20 years and how it is viewed from this field is discussed in Section 2.3. Finally, the individual and social factors impacting on both the potential for walking and cycling and the problems which

exist with collecting valid travel data are described and discussed in Sections 2.4 and 2.5.

2.1 Cycling and its fortunes within the transport arena

In this section I will give a brief overview of how cycling's fortunes have changed over time, and discuss both the current state of cycling and its future potential. I intend to show how cycling fits into the overall transport picture in the UK, and how health and transport policy currently view it.

Image 1: District nurses about to go off on their rounds by bicycle, 1950's

© The Queen's Nursing Institute

Cycling was last an everyday mode of transport for a large proportion of people in the UK during the 1950s and 1960s, as Image 1 shows. It was used as a practical vehicle for accessing work, shopping and leisure activities, exemplified by the image shown above. In 1949, 37% of all transport trips were made by bicycle, whilst today it is only 2% (Department for Transport, 2014). One minor caveat to this however, is that it is difficult to gain an accurate picture of how widespread cycling is, since it is not measured in a comprehensive and systematic way, which is discussed in Section 2.5.

Since the middle of the twentieth century cycling as a mode of transport has been in fairly constant decline, until recently, outside of a few enclaves with high cycling levels and a correspondingly more hospitable cycling culture (e.g. Cambridge, Oxford, York). In the UK context, where 2% cycling levels are average (of all transport trips), a cycling level above 5% might be considered high. This is in contrast to the levels of cycling seen in high cycling countries, such as Denmark, Germany or Holland, which are considerably higher, as is shown in Figure 1.

Figure 1: Percentage of trips by bicycle in selected countries
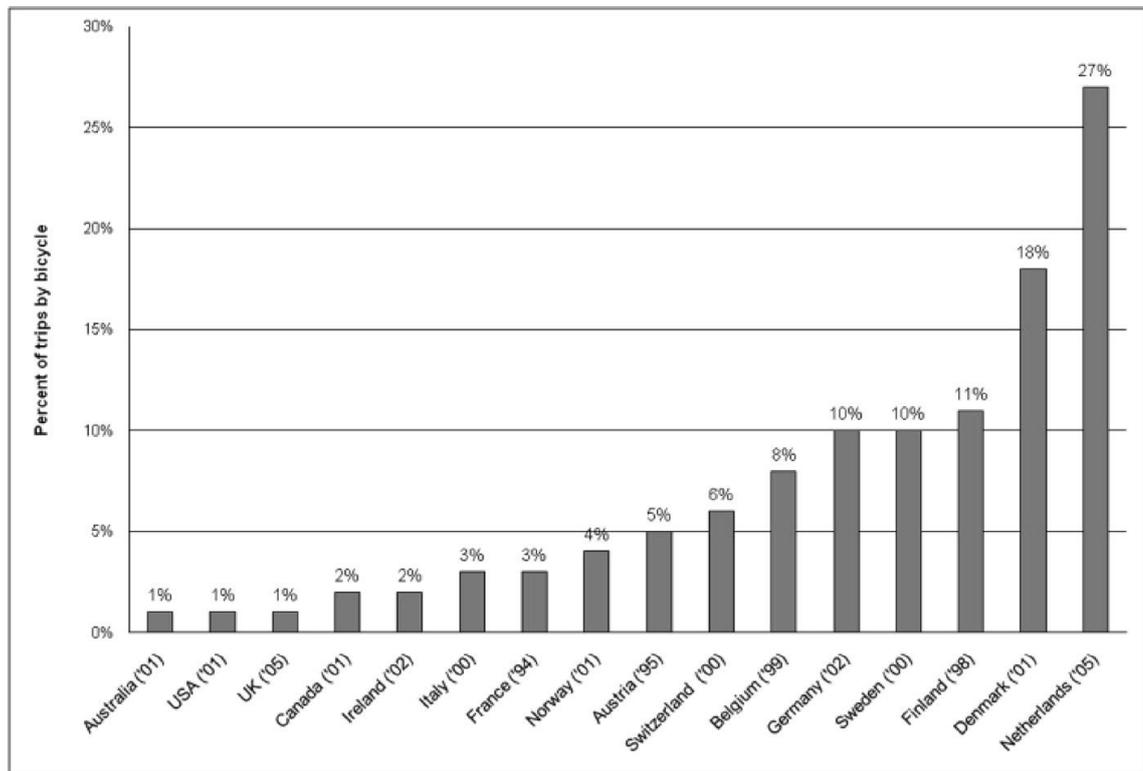
Sources: European Union (2003); German Federal Ministry of Transport (2003); U.S. Department of Transportation (2003); European Conference of the Ministers of Transport (2004); Department for Transport (2005); Organisation for Economic Cooperation and Development (2005); Netherlands Ministry of Transport (2006); Australian Bureau of Statistics (2007)

Source: (Pucher and Buehler, 2008) www.tandfonline.com

Figure 1 shows that the UK, USA and Australia have the lowest percentage of trips by bike, whilst The Netherlands, Denmark and Finland have the highest. Whilst the aggregate country levels shown here can hide some wide disparities within countries, there are only a few cities in the UK which have more than a 5% share of bike trips, whereas all but one of German cities have at least 5% share, as can be seen in Figure 2 (Pucher and Buehler, 2008). It is apparent that all of the highest cycling countries are in Northern Europe, but that the UK, despite its neighbouring geographic location to these countries, has very different cycling levels.

Figure 2: Bike share of trips in selected cities in the Netherlands, Denmark, Germany, the UK, Canada, the USA and Australia (2000–2005).
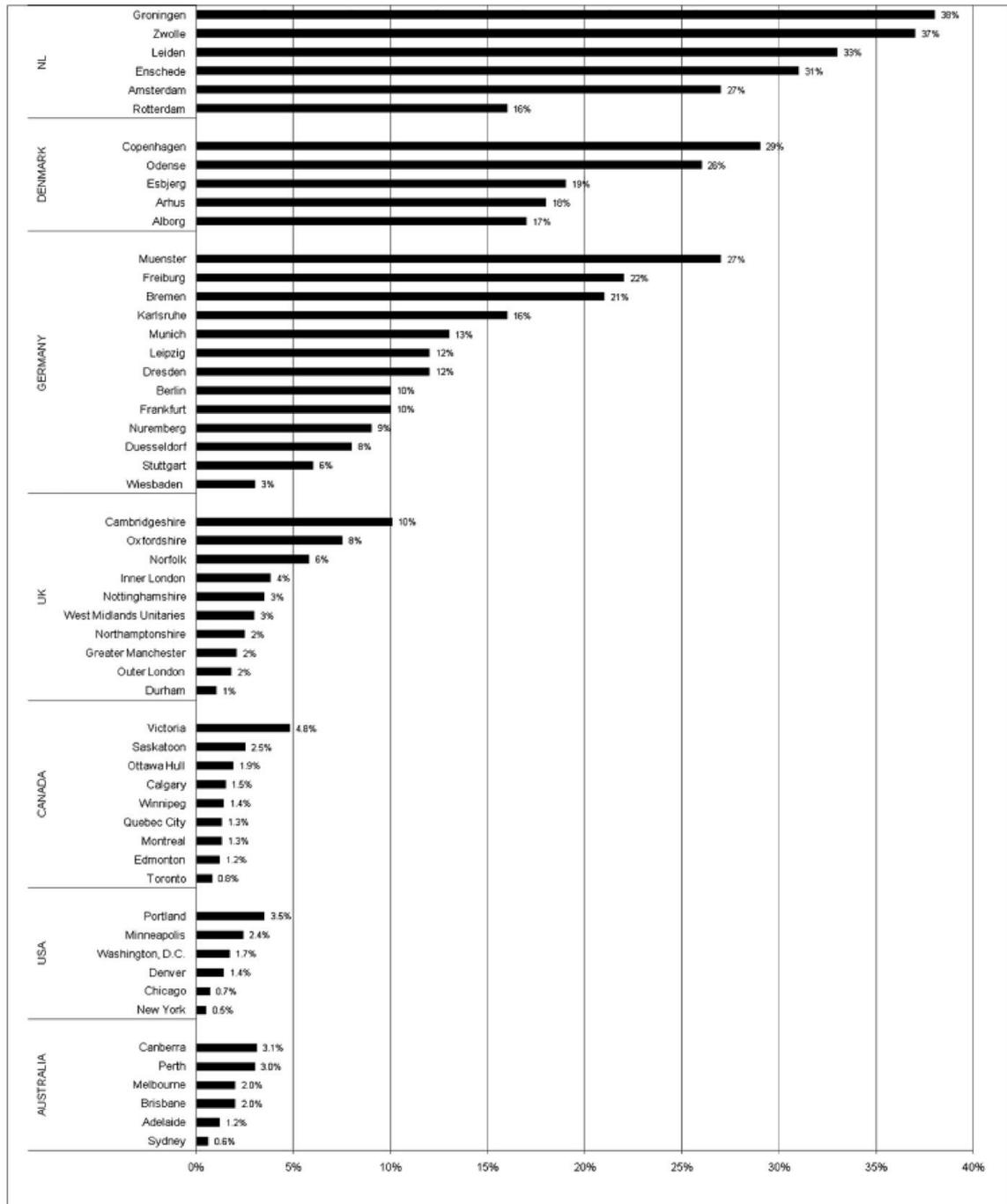
Sources: Andersen (2005); Department for Transport (2006); Dutch Bicycling Council (2006); Australian Bureau of Statistics (2007); Netherlands Ministry of Transport (2007); Socialdata (2007); Statistics Canada (2007)

Source: (Pucher and Buehler, 2008) **www.tandfonline.com**

As Pucher and Buehler (2008) detail, in most Western countries in the post-war years cycling levels started declining, and in the UK they have continued to decline for some decades and since then remained basically static, at a very low level. The decline of cycling (and indeed walking for transport in many places) has been happening in partnership with - and in no small part is directly attributable to - the rise in motor car ownership and use along with the concomitant 'car culture' (Sheller, 2004). According to the RAC, car ownership has risen from 19 million in 1971 to over 31 million in 2007, an average growth rate of 3% per annum (Leibling, 2008). This significant rise has had a myriad of impacts upon cars and car use and ownership itself, but also upon what it is like to travel around by other means of transport, including cycling.

The 'automobility culture' (Urry, 2004, p.25) not only impacts on how cars and drivers are viewed, but also increases the tendency for all other forms of transport to be seen as inferior. Urry describes how car culture is embedded into society in a whole series of linkages between the production and sale of cars themselves, to their allied powerful industries, such as; 'petrol refining and distribution, retail and leisure complexes, advertising and marketing and road-building' (Dennis and Urry, 2009, p.36). As well as powerful economic interests involved with the car system, it is socially and culturally dominant; 'generating new ideals about what represents the "good life" and what is necessary to be a good mobile citizen...' (ibid., p.37). Conditions for driving are continually bolstered and improved by such systems, and often with the support of land-use planning. This makes driving ever more

necessary and makes conditions more difficult for people who cannot or do not wish to drive. Barton, in his review of the relationships between planning and health, describes how; 'we have literally been building unhealthy conditions into many of our towns and cities' (2009, p.115). If left unchecked and unchallenged the system of auto mobility is therefore self-developing and self-promoting, in turn ensuring ever greater dependence on it by people going about their daily business.

Economically, car purchase and ownership has become cheaper over time, compared to using public transport, where train fares especially have increased considerably (Campaign for Better Transport, 2015; Department for Transport, 2010). Train usage has, however, increased despite rising fares (Department for Transport, 2014). Bus use has suffered with poorer service provision (outside of London and a few other locations), reducing usage and often, though not always, an image problem. In a review of public attitudes to transport for the Department of Transport, the main reasons given for not using the bus were the convenience of the car and the extra time needed, but attitudes were much more positive from current users rather than non-users (Lyons *et al.*, 2008, p.35).

Until recently the increasing volume and also often speed of traffic has led to a situation where conditions on many roads are perceived as dangerous and inhospitable for cycling to the majority of the population, with only a small proportion of people willing to cycle, potentially despite the conditions. Pooley *et al.*, in their mixed-methods research project in four UK cities, Understanding

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Walking and Cycling, found that 'it is clear that traffic is a major deterrent for all but the most committed cyclists' (2011, p.9). One of the participants in their study, Molly, from Leicester, sums this view up succinctly; "I am not comfortable at all with cycling. I am always scared of the traffic around me" (ibid. p.9). This view is not limited just to cyclists, however, and the impact of traffic and parked cars affects people in many ways, as will now be detailed.

The wider societal impacts of cars, which are often overlooked, are the focus of Mullan's study on the effects of traffic in Wales and of young peoples' (11 – 16 year olds) experience of it (2003). She found that those who reported living in areas next to busy roads with high levels of parked cars were 'less likely to have positive perceptions of the safety, friendliness, appearance, play facilities and helpfulness of the people in their local area' (ibid, p.351). Other similar research from Australia, into associations between adults' perceptions of the local area and children's walking and cycling found that: 'parental perceptions of issues regarding safe pedestrian and cycling conditions were negatively associated with 10- to 12-year old children's walking or cycling to local destinations (Timperio *et al.*, 2004, p.45). So children's (and adults) mobility can be curtailed by the negative associations which both children and their parents have of their local area, due to the presence of motor traffic.

In a similar vein, Hine, in his qualitative research, which combined in-depth interviews with video footage, found that 'traffic represents a major behavioural

constraint to pedestrians, in terms of both observed and unobserved behaviour'
(1996, p.196). The impact of cars therefore is not limited to other forms of
transport, but also had myriad wider health and social effects (Woodcock and
Aldred, 2008). These are rarely conflated and discussed, but are often dismissed or
ignored, due to the primary position which motor vehicles occupy in society.

2.1.1 Peak Car?

A recent counter-veiling trend to the 'automobility culture' which has just been
discussed is the idea of 'peak car'; a slowing down in the rate of growth of car
ownership amongst younger adults. It has been defined by Goodwin and Van
Dender in their review paper as: 'the observation of slower rates of growth,
levelling off, or reduction, in various measures of car use, which have been seen in
many though not all developed countries' (Goodwin and Van Dender, 2013, p.243).
They found three common themes from the papers they assessed; younger people
are showing a reduced propensity to drive, an important localised and urban
component, and the economic factors around driving have changed and become
more complex (ibid., p.251). Some academics have gone beyond peak car to
imagine a future after the car, arguing that the; 'days of the current car system are
numbered' (Dennis and Urry, 2009, p.213). They propose three post car system
scenarios; 'localised sustainability', 'regional warlordism' and 'digital networks of
control' (ibid., p.161). To what extent, and if at all, cycling and walking form part of
the new, post-car landscape, should one come to exist, is of course yet to be
determined.

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2.2 UK Cycling Advocacy

Whilst cycling levels have declined in the UK, and, as was discussed earlier, cycling has become more marginalised, there have been some organisations who have been active in campaigning for or providing for cycling (c.f. Aldred, 2012a, for a fuller discussion concerning UK cycling advocacy). There are three key organisations who are most important in this context; Sustrans, Cyclenation and the CTC (please see Figure 3 which shows their relationships to each other). Other organisations have been involved in cycling provision or promotion, such as the Department for Transport, Local Authorities and Cycling England, but here I am focussing on the specific cycling advocacy organisations mentioned above.

Brief mention of how cycling provision is funded in the UK is here made, for clarity. The UK Government Department for Transport is the chief funder of specific national transport schemes including cycling, through schemes such as the Local Sustainable Travel Fund (LSTF) (via local authorities and sometimes partner organisations such as Sustrans). Much funding for cycling has however been sporadic, short-term and in key targeted locations, meaning that provision across the UK is uneven and localised (Aldred, 2012a). Some schemes have involved joint funding, for example the Cycling Cities and Towns programme, funded by the DfT, Cycling England and the Department of Health.

The three cycling organisations mentioned above (Sustrans, Cyclenation and the CTC) have made significant impacts on UK cycling culture, but for long periods of their history they have adopted policies which often precluded them working together. This situation seems to have shifted in recent years, with more common ground being found in their approaches, and for example, work together under the auspices of the Active Travel consortium (Active Travel Consortium, 2012). However the combined impacts of these different approaches has led to a rather particular history for UK cycling; on the one hand not desiring any specific facilities for cyclists and on the other those which have been provided are arguably sometimes more focussed on the needs of recreational rather than utilitarian cycling.

Figure 3: The roles of cycling organisations in the UK and Europe.
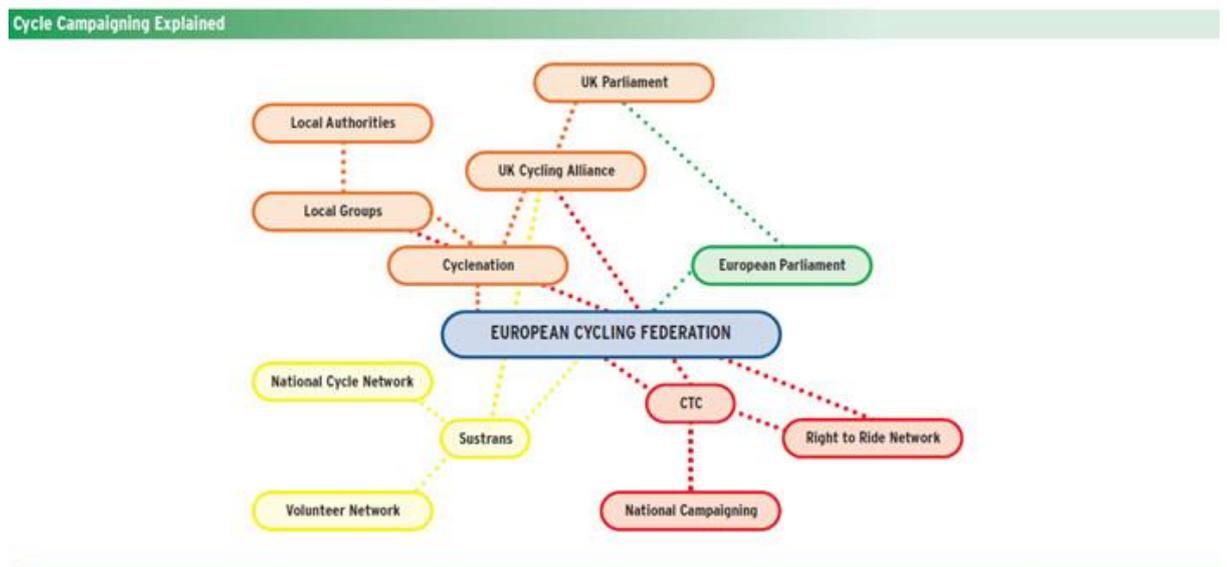
Source: (Cyclenation, 2014)   Reproduced by permission of the creators

Sustrans was established in 1977 (initially it was called Cyclebag, but this was soon changed) out of concern over the lack of cycling present at the time, and fairly quickly decided upon the idea of utilising former railway routes as walking and cycling routes (Sustrans, 2014a). Many railway routes became available gradually, closing over a period of many years as a result of the cuts recommended by Lord Beeching, in his 1963 report 'The Reshaping of British Railways'. He advised that nearly a third of the UK's railways be closed after being found 'not economically viable' (Wolmar, 2008, p.283). Sustrans had the idea to bring these disused routes back into life as safe and comfortable paths for people walking and cycling, away from motorised traffic, and what later became the National Cycle Network (NCN) started to come into being. Whilst the disused railway lines (and to a lesser extent canal towpaths) are a key feature of the NCN, the majority of the NCN routes, are in fact on roads, though mostly on quiet or traffic calmed streets. The NCN is now over 14,700 miles long and carries over 748 million journeys per year (Sustrans, 2014a). It is also established as part of a European network of long distance cycling routes, organised by Eurovelo (EuroVelo, 2014).

There are a number of other key Sustrans projects, such as TravelSmart (a Personalised Travel Planning (PTP) package developed with Socialdata), DIY Streets, Safe Routes to Schools, Safe Routes to Stations and Art and the Travelling Landscape which encourage sustainable or active travel in a number of ways. Several of these programmes are engaged with 'civilising' urban streets or providing safer cycle routes to key destinations, which could provide particular

benefits to women, who are more likely to undertake escort journeys (as discussed in Section 3.6). However, the NCN is the 'flagship' project, and the one which has received the most funding and attention. Whilst Sustrans as an organisation and the NCN as a project have undoubtedly been a success in terms of their popularity and usage, there have been a number of criticisms of the focus which Sustrans has on such routes (Jones, 2008).

One of the critiques of some of the NCN routes is that, although specifically designed with the idea that anyone over the age of fourteen would feel safe enough to ride the routes unaccompanied, without fear of traffic, in reality this may not be the case. Some routes, by necessity, do use quite busy roads or have to cross major roads. Others use quieter country roads, but traffic on such roads often travels at speed as drivers are not necessarily expecting to meet other traffic. This can make such routes dangerous, especially for those unaccustomed to them. Yet others are extremely hilly and physically taxing and could not be tackled by any beyond the most fit and able section of the population. This means that whilst some of the NCN is suitable for nearly anyone to walk or cycle along, other parts are challenging in terms of safety or fitness, and so not as inclusive for all cyclists.

Another critique of the Sustrans approach is that they have tended to concentrate on routes between places, rather than on the routes within towns and villages, which has tended to be the preserve of the relevant local authority. Whilst this may partly be the legacy of seizing the opportunity of transforming former transport

corridors for a new generation of sustainable travellers, it may also be traced to the funding and political climate in which it needs to operate. Aldred argues that UK government transport policy has, since the post-war period, either ignored cycling as transport completely, or more recently adopted a localised, 'arms-length' approach to cycling, including very low spending rates. She states that: 'this localisation of cycling is a continuing thread within UK transport policy, as is the opposition to 'segregation' of cyclists from the motorised carriageway' (Aldred, 2012a, p88).

Partially as a consequence of this typically UK local authority spending on cycling has been very low (£1 or less per inhabitant, outside of particular areas which have been given greater funding to provide 'best practice' facilities over particular time periods), compared with up to ten times that amount spent over many years in places such as Freiburg in Germany (Jones, 2008). Lanzendorf and Busch-Geertsema (2014, p.26) in their analysis of cycling in four German cities also claim that; 'although local cycling policies are not the only factor for successfully increasing cycling usage, they play a crucial role in the process of increasing cycling use in cities'.

The resulting situation in the UK has been that no organisation has been entirely focussed on making clear, safe and accessible routes which navigate the difficult and contested terrain of inner city and town areas, although within the overall funding climate in which it has been operating such ability is curtailed. Most people,

particularly women, and younger and older people appear to have decided that many city centres are inhospitable for cycling and so choose not to.

For the cyclist this has perhaps resulted in a more attractive and safer experience whilst journeying on many NCN route between places, followed by a sometimes confusing and/or unfriendly environment to reach their final destination, once an urban centre has been reached. In his doctoral research on NCN routes in Stafford, Jones found that 'provision of urban NCN traffic-free paths alone were found to be insufficient in encouraging a shift from car to cycling for everyday travel purposes' (Jones, 2008, p.ii). This raises the issue as to whether the focus on long-distance, traffic-free routes, which may be used more frequently for leisure, has in some respects hindered the provision of utility cycling infrastructure in urban centres. As Jones argues;

> This raises an important issue as to whether more weight has been given to initiatives that encourage recreational cycling (either as a support system to aid the transition into functional cycling or indeed as a resource in its own right) at the expense of (arguably more difficult) efforts to develop the infrastructure and support for everyday functional cycling (ibid., p.72).

However, in Sustrans defence it may be countered that without the NCN initiative, the UK may have been left without significant facilities for *either* functional/utility *or* recreational cycling, given the lack of political interest and funding given to cycling in the UK until recent years.

The CTC (see glossary on p. XIV), has had another historical impact upon UK cycling which has also contained some aspects which might not be perceived as advantageous to many current, or potential cyclists, especially women. For many years, (until a recent change of position) the CTC was strongly influenced by an anti-segregation or 'integrationist' doctrine. This idea has been in recent decades championed by John Franklin, who argues that cyclists not have any special facility on roads (such as designated lanes) but instead should cycle on roads together with the traffic (1997). This is based on the idea of assertive or aggressive cycling (often termed vehicular cycling) which involves cycling at speed with the motorised traffic, positioning yourself far into the road and away from the gutter or edge of the road, so that you can be seen and taking your 'proper place in the road.' (ibid.).

Franklin, follows the position advocated by John Forester (in the US context) that; 'cyclists fare best when they act and are treated as drivers of vehicles' (Forester, 1977, cited in Jones, 2008, p.70). Both of these approaches find an antecedent in the CTC, who lobbied as far back as the 1930's; 'against the separation of cyclists from general traffic and largely achieved its aims' (Melia, 2015, p.72). The rationale for this was partly a class-based one, as Melia describes, based on differing interests between the CTC membership which was composed mainly of passionate leisure cyclists, and working class urban utility cyclists (ibid.). The members were concerned that if separate cycling facilities were provided, this would give motorists exclusive use of roads and deprive them of their freedom to ride (ibid.).

A variant of vehicular cycling is still taught by many cycle training organisations, and often presumes that the cyclist themselves takes responsibility for safety by cycling in a way which they perceive will reduce the frequency of accidents. There are a number of potential pitfalls with this approach, however, especially for women and younger and older cyclists, as will be discussed further in Chapter Three. According to such a philosophy a person must have the ability and 'competence' to ride on the road with the traffic, at a fast pace (Franklin, 1997). UK transport policy is still influenced by the vehicular approach, with its hierarchy of provision favouring retaining road space for motor vehicles. Aldred suggests that the hierarchy of provision has: 'led to frustration among 'segregationists' and 'integrationists' with the former calling for enforceable national standards based on international best practice, and the latter fearing that demands for segregation may reinforce the marginalisation of cycling given an unfavourable political context' (Aldred, 2012a, p.96).

However, many people, due to age, disability, fitness levels, confidence or even choice will rarely/never be willing or able to adopt such an approach. They cannot cycle at the speed required and feel intimidated by both the speed and volume of traffic which is passing them. To call for children, older people or indeed many women to behave in such a way on a bike may be unlikely to encourage them to cycle. Indeed since people have been free to take up this approach for many years but – as falling levels of cycling tell us – they have not chosen to do so, we can see that this stance has not succeeded in countering the stagnating/falling levels of

cycling. As Pucher argues; 'Bicycling should not be reserved only for those trained, fit and daring enough to navigate busy traffic on streets' (Pucher, 2001, cited in Jones, 2008, p.71).

Cyclenation is the group which represents local cycle campaign groups at a national and international level. Some 20,000 people are affiliated to Cyclenation via these smaller city and town-wide groups. Cycle campaigning does tend to focus directly on the experience of cycling in city and town centres and directly lobbies local authorities to improve on-the-ground facilities for cycling. Such dogged commitment has in some areas achieved real progress in terms of increased provision for cycling, for example in Hull (Aldred and Jungnickel, 2012). In common with the CTC, however, this has traditionally been a male-dominated preserve, with little input from women on what their cycling needs and considerations are (or other groups who are currently marginalised from cycling) (Cyclenation, 2015). In more recent years the cycling advocacy field has changed, with the Cycling Embassy of Great Britain calling for Dutch-style facilities to be provided in the UK, and also a host of social media sites providing outlets for bloggers, new online groups and witnessing such as people using video cameras to record dangerous and/or abusive driver behaviour (Aldred, 2012a).

So, we can see that cycling lobbying or campaigning has been active in the UK, in a climate which for many years has often been at best ambivalent and at worst hostile to cycling. This energy and determination has achieved significant successes

in terms of both new and improved infrastructure and improving the wider circumstances for walking and cycling, such as 20mph areas in towns and cities (Sustrans, 2015; 20's plenty for us, 2015). However, for various reasons, of culture, ideology, and practicality the main cycling organisations have not focussed on improving conditions for the less experienced or able urban cyclist to the extent that they might, though often for reasons outside of their control. Also as Aldred notes: 'all UK cycling advocates continue to wrestle with the image of cycling that tends to be dominant where cycling levels are low; a minority, high-risk, sporty activity attracting skilled, confident, and properly attired and equipped people' (Aldred, 2012a, p91).

2.3 Public Health and Active Travel

Within the transport research field, cycling and walking have traditionally received less attention and have not been accorded the same status as motorised forms of transport (Hillman, 1997). More recently this has begun to change, with a greater number of funded studies to try and evaluate the worth of the active travel modes (cycling and walking) from economic, health and social and environmental angles. This has emerged due to the recognition of a whole host of problems with current patterns of mobility; emissions from transport contributing to climate change, pollution, obesity and overweight due to inactive lifestyles, restrictions on children's play, lack of social connections and social exclusion amongst others (Lyons and Urry, 2006).

There has been increasing interest from the health sector in the contribution which active travel can make towards better health and decreased incidence of overweight and obesity among the population. Conversely, looking at the general trend of a reduction in walking and cycling, Davis et al found that 'a reduction in walking of just eight minutes a day may be sufficient over the long term to increase body weight from a BMI of between 20-25 (healthy weight range) to over 30 (obese)' (Davis, Valsecchi and Fergusson, 2007). In addition to weight control, active travel can also help guard against modern health problems, such as cardiovascular disease.

However for most people, cycling and walking are not viewed as regular, cheap and convenient forms of exercise. Rather, they are often viewed as something difficult, unpleasant, and unappealing (Pooley *et al.*, 2011). The Understanding Walking and Cycling Project (UWAC), which investigated the factors influencing everyday travel decisions describes the current situation as: 'the extent to which a household finds it difficult to incorporate walking and/or cycling journeys into its everyday routines reflects the degree to which car use has become normal and habitual' (ibid., p.17).

Vigar, in his study of how sustainable travel initiatives were implemented in several local authorities, points out that transport issues, such as over-dependence on the car, have been (and often continue to be) framed as congestion issues rather than fully recognising wider and much larger concerns, such as carbon emissions (Vigar,

2002). This viewpoint is critical, as it determines whether cycling is seen as a nice

'add-on' once demand for road space for cars has been resolved, or as a vital part of

reducing both the amount (frequency/distance) which we travel per se and the type

of travel, with far greater numbers of trips being made by sustainable modes.

2.4 Potential of walking and cycling

This section examines the evidence on the potential for greater levels of cycling and

walking in the UK, and what that could mean in terms of environmental, social and

health impacts. Barriers to cycling are discussed in the context of gender, in Section

3.8. Cycling has been seen by some as an ideal solution for many of the problems

inherent in the automotive system and there have been efforts to increase levels of

cycling by successive governments, which have met with mixed success.

Over the last couple of decades a greater interest has been shown in cycling and

walking in both the transport and health fields, largely led by both environmental

and health concerns around the impacts of transport. Motorised transport is a

significant and growing contributor to greenhouse gas emissions; it contributed 18%

of total worldwide CO_2 in 2003 (Rothengatter, 2010, p.8). It is also a significant

cause of death worldwide, via road traffic accidents, with 1.3 million deaths

recorded in 2012 (World Health Organisation, 2014). Such mortalities are inflicted

disproportionately upon poorer and marginalised groups within society, such as less

affluent neighbourhoods, and amongst children and older people (The AA, 2003).

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Indirectly motorised transport also causes significant mortality and morbidity for many people living in inner-city areas, where the air pollution caused leads to many premature deaths (Woodcock and Aldred, 2008). Motorised traffic by its volume and speed also suppresses the desire and ability of people to walk and cycle and can therefore be seen as contributing to the lack of exercise which impacts on the populations health and obesity levels (Jacobsen, Racioppi and Rutter, 2009).

A few key advocates within the transport field, such as Hillman, Tolley and Whitelegg have called for much greater prominence to be given to the active travel modes of walking and cycling (Hillman, 1997; Tolley, 1997; Whitelegg, 2015). They have pointed out the potential which such modes have to solve some of the multiple policy problems described above. Mackett, for example, estimates that 31% of everyday short journeys could be transferred from car to walking and 78% to another sustainable mode, even with current levels of infrastructure (Mackett, 2001, cited in Jones *et al.*, 2009). Whilst this view has been widespread in some parts of the transport field, it has not had much impact on policy on the ground, which has continued to mainly prioritise car-based development.

Darnton, citing economic modelling of cycling which valued improvements in health and reductions in congestion and pollution, states that 'a 20% increase in cycling by 2012 would release a cumulative saving of £500 million by 2015 (Darnton, 2009, p.2). Hillman has gone further and suggested that spending on

walking and cycling is by far *the* most cost-effective and useful way of tackling

problems within the transport sector. He argues that 'there should be a

presumption in favour of giving priority to the creation of networks for cycling

and walking – well in advance of, but not of course precluding – investment in

public transport' (Hillman, 1997, p.101).

Of course, as well as acting to complement and encourage walking and cycling

for certain journeys, public transport and active modes of transport may also be

in competition as Vandenbulcke *et al*. note (2009). There are some transport

researchers who have criticised the emphasis on cycling and as Wardman *et al*.

argue: 'there remains a scepticism in some quarters that improvements to

cycling can deliver what is promised by its advocates' (2007, p.349). Yet others

may see any travel time savings as a worthwhile investment and so view a modal

shift from walking or cycling to bus patronage as a transport gain (Lucas, Tyler

and Christodoulou, 2009).

Writers from the fields of health, environment and sustainability, psychology,

and social and cultural studies have also considered cycling and called for a

switch from car trips to cycling trips. A report from the Sustainable

Development Commission, suggested 'handing out free bikes to encourage

more people to take up cycling for journeys of five miles or less', as one of its

'Breakthrough Ideas for the 21st Century' (Gray, 2009). Davis *et al.* (2007) also

call for comprehensive action to return to walking and cycling levels which were

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in evidence before the growth in car ownership in the 1970s, to curb the twin

problems of obesity and climate change. Whilst such levels, certainly for cycling,

might seem unimaginable in the UK currently, some high-cycling locations are

achieving this (i.e. 50% of trips in central Amsterdam are by bike) (European

Union, 2015).

Despite the range of evidence which has been presented on how walking and

cycling can make a significant contribution towards many policy goals in health,

transport, environment and social spheres, the commitment to providing for

these modes has been low from national and local government, outside of a few

key cities such as Cambridge, Hull, Oxford and York. Aggregated levels of

cycling to work (as main mode) across the UK are remaining stagnant, with a

modal share of 3.0% in 2001 rising minutely to 3.1% in 2011, according to Census

data (Aldred, Woodcock and Goodman, 2015). However, the recent investment

in programmes, such as, Sustrans' Connect2 and Cycling England's Cycling City

and Towns initiatives, may have signalled a shift of emphasis towards greater

interest in the active modes of travel at a national level.

One difficulty which arises when encouraging greater levels of cycling is

driver/cyclist interaction and the views of drivers towards cyclists. In a UK study of

driver's perceptions of cyclists, Basford *et al*. (2002) found that driver's often

thought of cyclists as an 'out group' and consequently thought of their behaviour as

erratic and unpredictable. Additionally, when drivers encountered cyclists where

road conditions were challenging, the cyclists were seen to be at fault. The report made a number of recommendations to improve interactions; changes to highway design were required (segregation, good cycle route design and/or slower speeds), driver awareness of the challenges cyclists face using the existing road network, and enforcement of existing traffic laws which impact on drivers and cyclists (ibid., p.31).

In related research which argued that cyclists face having a stigmatised identity where they are not seen as 'normal', Aldred (2013, p.268) states that: 'in the UK at least, cyclists must negotiate their way out of a distinctive combined stigma of being both too competent (at 'being a cyclist') and not competent enough'. Being a competent cyclist often involves taking responsibility for many aspects of their transport choice, involving a high level of awareness when riding, and often involving carrying kit and potentially fixing any maintenance problems personally also. Rissel *et al*. (2010, p.7) studied media portrayals of cycling and cyclists in Australia and found that; 'almost half of all articles include the frame of cycling as a risk to cyclists and that death, injury and danger were the main ways in which cycling attracted news media attention'. Such stereotypes and stigmatising portrayals of cyclists can make it difficult to encourage others to cycle, and the significant potential for walking and cycling needs to be balanced by acknowledgement of such social barriers to greater levels of cycling.

2.5 Problems of collecting valid walking and cycling travel data

Some issues have been identified relating to collecting accurate walking and cycling travel data in many countries, which has been highlighted by some transport researchers. There are no standardised travel surveys which allow accurate international comparisons (Bassett *et al.*, 2008). This is also the case within the UK; there is no unified source for walking and cycling data for all purposes. Partly this may be due to the low status of walking and cycling that there is not a specific data source just for these modes, as Aldred argues (2012b). There are three main national datasets which cover walking and cycling in England; the National Travel Survey conducted by the Department for Transport, the Active People Survey commissioned by Sport England and the National Census, which covers the whole of the UK. A table outlining their key characteristics is provided below.

Table 2: The three main travel data sets for England.

Dataset	Organisation/Method	Area covered	Key purpose/focus	Travel information collected/ outputs
Census	UK Government (whole population, i.e. 94% in 2001)	UK (administered from 3 separate locations)	Detailed information on national demographics and for resource planning	Individual travel to work only. Via interviews or online (from 2011).
National Travel Survey	Department for Transport 16,000 individuals (all age groups) First conducted in 1965 (not all years)	England	Tracking long-term developments in how, when and why people travel.	Travel for all purposes, measured by trips (single purpose) and stages (different modes). Interviews and 7-day travel diaries.
Active People Survey	Sport England (by TNS BMRB) 165,000 adults, annually Representative, since 2005	England	Measures sports and physical activity participation	Sporting and PA participation by 14+ adults. Outputs by sport/PA and by LA area.

Source: adapted from (Office for National Statistics, 2014a; Sport England, 2015; Department for Transport, 2014)

One of the most popular means of collecting travel data within transport research is the travel diary, which asks participants to fill out a sheet detailing their movements over a set time frame; often a week. However, subjective travel diaries which rely on participant's recollection of their travel and activities, may find that such recollection may not be entirely accurate. It is also common for people to

remember the longest and/or most significant trips which they undertake, meaning that shorter/more local trips and shorter legs of multi-modal trips can go under-reported (Department for Transport, 2014). These are often trips on foot or by bike.

The Department for Transport with its National Travel Survey (annually) and the National Census (every ten years) both collect data on cycling, but the latter focusses on commuting, as opposed to other cycling trips. This may produce a misleading (in terms of who is cycling) picture of current cycling, since shopping, leisure and personal business conducted by bike are not fully counted (although they may of course be combined with commuting as part of a trip chain, see Section 3.3). Whilst the NTS does collect data on all purpose trips, there are two potential ways in which such data may not fully capture all cycling; the fact that it records trips on the public highway rather than on cycling or walking routes, and that it counts trips as one-way journeys for a single purpose, which may not capture the full range of all journeys (e.g. escort trips, multi-purpose trips). Women, who are more likely to work both part-time and during hours which enable escort journeys to be undertaken, may not be represented via traffic count data as fully.

Sustrans (who also collect data on walking and cycling on the National Cycle Network) have also argued that traffic counts, with their focus on traffic on main roads, may under-count cycling and walking, which often take place on traffic-free routes or roads with little traffic (Sustrans, 2014b; Aldred, 2012a). The Active People Survey (and its successor Active Lives) also captures some data about peoples'

patterns of cycling and walking, but the primary focus of this is on sport and recreation, which is not the total of many peoples cycling and walking. Since we do not know what, if any, aspects of people's journeys may not be fully captured by all of these data sets, this is only a potential problem, which cannot yet be verified.

Two of the major UK surveys also ask people for their *main* commuting mode, which may also hinder capturing all cycling activity accurately. Some people have varied commuting patterns, and may use a bike some of the time but a car on other occasions. If the split between the former and the latter was 49 – 51%, a survey respondent would still be likely to answer that their main mode of commuting was by car. This complicated scenario becomes more problematic when people use multiple modes to get to work, for example walking to a local train station to catch the train to work, and then walking the other end to reach their final destination would involve 3 journey 'stages'.

However, since many travel and transport surveys would ask just for the main mode, only one stage is likely to be counted (the train journey), since it is usually the longest part of the overall trip both in time and in distance. The Department for Transport have recently recognised that for these and other reasons, they are likely to be under-counting walking and cycling and are therefore consulting on how best to improve their data production in this area (Department for Transport, 2014). At a European level this has been recognised also, with Wittink describing how walking 'stages' are under-counted in current methods of measuring transport trips (2001).

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2.6 <u>What have we learned from cycling research?</u>

Aside from the wider debates over sustainable transport within the transport community, cycling-specific research has focussed on a broad range of areas. Rosen, in his review of cycling research projects, found over 160 studies conducted in the UK since the early 1990s. He found that the most prominent issues which emerged from the knowledge base were infrastructure and design, safety issues, the cultural dimensions of cycling and transport and the position of cycling within the overall modal split (Rosen, 2003).

He also identified the following gaps; a limited understanding of the balance between utility and leisure cycling, little awareness of the interconnectedness between behaviour and technical issues and minimal knowledge about how to bring new children or adults to cycling (ibid.). Unfortunately, whilst the review, which was conducted to see how cycling research could help implement the National Cycling Strategy, recognises social inclusion, health and young people as areas for research attention it does not focus on the relationship between gender and cycling behaviour. Gender is mentioned as part of a section of social demographic characteristics, but any gender-based themes which may have emerged from the cycling research are outside the scope of the review.

Policies aimed at increasing bicycle usage have often focussed on improvements to infrastructure (more cycle routes), social marketing of cycling (better advertising of

bike travel), or a combination of both. However, as Lee argues, embodied knowledge (actually encouraging people to cycle via bike rides and events) has often been overlooked when considering options to raise the numbers of people cycling (Lee, 2015, p.2). All of these aspects are likely to be important, together with wider measures to improve the walking and cycling experience such as: 'traffic-calming, urban design orientated towards people not cars, restrictions on motor vehicle use, and education and enforcement of road rules protecting cyclists' (Jones, 2008, p.71). A recent Transport for London Attitudes to Cycling survey found that whilst perceptions of cycling in London generally had improved, with many rating it as fast and convenient, their perceptions of cyclist's safety had slightly worsened and they were more likely to wear helmets and hi-vis (Transport for London, 2014).

2.7 Chapter Summary

This chapter has reviewed cycling in the UK from a transport and health policy perspective and has related how it has historically been viewed from these fields. The relationship of cycling with other transport and most particularly with cars and car culture was outlined, including recent debates on whether this car system is starting to change; 'peak car'. The activities of the cycling advocacy bodies in this country and how their beliefs on how cycling should develop has influenced cycling patterns today, was discussed. Issues of collecting accurate travel data were highlighted and their relevance to gender stressed. The potential for cycling was

then delineated, and lastly, cycling research and the aspects of cycling which have been either prominent or side-lined were debated.

Chapter Three, which follows, provides an overview of how gender impacts upon society generally, and then discusses gender and overall transport usage, before specifically concentrating on cycling and gender.

Chapter 3:   Gender, transport and health; what relationships exist?

In this chapter I will explore how concepts of gender have been discussed and shaped within the sociological literature, including a brief description of patterns of gender inequality. This will provide some valuable cultural context and analysis for my chief research questions related to gender, RQ1 and 5, which assess how men and women perceive barriers to cycling, and how women's participation in cycling can best be facilitated.

After this concise overview of gender relations, I will then discuss how gender relates to the fields of both health and transport. Following this I will both detail and offer a critique of what academic research has discovered about men and women and their patterns of movement and activity levels. Most of my discussion is situated in a developed country context, since my primary focus is cycling in the UK, the fifth richest economy in the world, but I have also briefly included some research from developing countries where I consider this to be pertinent.

Finally, I will look specifically at cycling, both as a mode of transport and as a leisure pursuit and examine the extent to which there have been differences in patterns of bicycle usage according to gender, both historically and currently. Part of this pattern is to examine the spatial relationships to gender difference in cycling; different countries and even different towns and cities may have greatly disparate levels of women's and men's cycling. This will show where my study fits within the

existing literature, and in turn enable insight into how my research questions were formulated.

3.1 Gender orders: the social shaping of gender

Before looking in detail at gender differences within the transport and health fields, it is useful to look at general patterns of gender difference, both throughout history and across different societies at the present time. In most societies, at most times, gender relations, or the '*gender order*', has, according to many researchers, favoured men to the disadvantage of women; economically, socially, and in terms of politics and representation (Connell, 2009). However, as Connell notes, the social enforcement of gender roles itself has no equality, and has sometimes favoured some women, and also come at a high price for some men (ibid.). There is also evidence to suggest that in many societies gender roles have become less rigid, and more egalitarian, with a much greater degree of workforce participation by women. Nevertheless, despite some improvements in the levels of equality and respect for some women, the signs of significant gender inequality are indeed almost universally apparent (hooks, 2000; Mather Saul, 2003).

In terms of politics, representation for women is low in most countries; very few heads of government are women and there has never been a female head of the World Bank or Secretary General of the UN (Connell, 2009). Over 80% of the members of the world's parliaments are men (ibid.). In the 'Global 500' top

worldwide business, just 2% had a female Chief Executive Officer (CEO). Therefore, in politics, global institutions and many large businesses women's needs and viewpoints are not being represented to the same degree as men's.

Whilst women's participation in the workforce has increased in many countries, most of these jobs are concentrated in caring and service roles, such as, clerical, cleaning, nursing and care work, teaching, serving food and working in call centres. Figure 4 below shows the percentage of women and men occupied in the different occupational groups in the UK; showing the areas where women clearly dominate are administrative and secretarial occupations, caring, leisure and other service occupations, and sales and customer service.

Figure 4: The percentage of those in employment working in each occupation group for men and women, April to June 2013, UK

	Men	Women
Managers and Senior Officials	13.1	7.3
Professional Occupations	18.5	20.7
Associate Professional And Technical Occupations	14.9	12.5
Administrative And Secretarial Occupations	4.9	18.2
Skilled Trades Occupations	18.1	2.3
Caring, Leisure And Other Service Occupations	3.1	16.1
Sales And Customer Service Occupations	5.6	10.6
Process, Plant And Machine Operatives	10.6	1.5
Elementary Occupations	11.2	10.6
All occupations	**100.0**	**100.0**

(Source: Office for National Statistics, 2013, p.11)

(Contains public sector information licensed under the Open Government Licence v3.0)

Employment in the passenger transportation sector is itself highly male dominated, with 78% of all employees in this sector in the UK being male (People First, 2010). Within this sector are quite disparate rates of genderised employment, for example 92% of bus and coach drivers, and 98% of aircraft pilots are men, whilst 79% of air travel assistants are female (ibid.).

As Frost and McClean state: 'Women in the UK still earn averagely less than men, and are under-represented in management jobs, on boards and in the 'top' professions' (Frost and McClean, 2014, p.94). Power, status and wealth are still substantially gendered as well as 'classed' (ibid.). An example of this can be seen in pay disparity; in the UK the Equal Pay Act was passed in 1970, making it illegal to discriminate between men and women on the basis of pay. Despite this, a recent report by the Chartered Management Institute claimed that at current rates of change female managers were unlikely to see genuinely equal pay until 2067 (Allen, 2010). The study found that at the present time the average male UK manager can expect to earn over £10,000 more than his female equivalent (ibid.).

As well as being concentrated in jobs which are often lower paid and have a perceived lower status, even when women do have the equivalent job to a man they are often paid less for exactly the same work. Men's and women's patterns of participation in the workforce over the life-course are also different. According to Majeed *et al.* (2015), in their study of Australian 'baby-boomers', men tend to have a more dichotomous pattern of mainly in full-time work until the age of 60 or more,

or no work, especially in the later years, when some men had to leave employment due to redundancy or ill-health. Women's patterns of employment were much more fluid with frequent shifts between full-time, part-time or no work, depending on their caring responsibilities for children, ill or disabled relatives, home and a range of other circumstances (ibid.).

A New Zealand cohort study of the effects of parenthood on workforce participation found that whilst women's participation decreased after having children, men's participation usually stayed the same or in some cases increased, leading to a distinct gender pay gap in the child-rearing years (Gibb *et al.*, 2014). These cases are from a specific cohort, and may not be applicable to the next generation in the same ways, however.

Another impact upon many women is that whilst women have increased their participation in the workforce, albeit not on terms of complete equality, men who are fathers have generally not taken on a corresponding share of the work of caring for children. A recent survey by the Fatherhood Institute states that only 1% of biological fathers are in sole charge of their babies for 30 or more hours per week, and this rises slightly to 4% amongst households with 3 – 4 year olds (Burrows, 2013). Whilst many parents claim that they are both doing an equal share of the caring for their children, closer examination reveals that in heterosexual relationships it is still largely women who perform most of the childcare, housework and associated tasks, often regardless of their own participation in the workforce

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(ibid., p.21). Feminists argue that sharing domestic chores equally has 'never become the norm, that for the most part women still do most of the housework and child care' (hooks, 2000, p.81). This unequal share of childcare responsibility also has extensive mobility implications, since women still do the majority of escort trips (taking children to nursery/school and accompanying older relatives on health and personal business errands).

This 'sexual division of labour' was, according to Connell, the first gender related term to enter the social sciences (Connell, 2009), and is still a highly relevant topic of discussion within them. Such division of labour occurs both within the workplace, with the different types of occupation into which men and women are focussed, but also domestically and with the raising of children. Sue Sharpe's classic study 'Just Like a Girl' (1976) describes the process whereby girls (and particularly working class girls) were socialised to consider their roles as mother and homemaker as primary, whilst work outside the home was seen as secondary and to be rescinded in the event of any conflict with their primary role. Such factors have a bearing on men's and women's mobility and their social roles also impact on how much freedom they have to travel where and how they wish.

In the next section I will provide a brief history of how historically cycling has been seen by some women as part of the struggle for greater independence and authority, via the women's movement. Following this I describe what we know about gendered patterns of mobility, design and health, before examining cycling

and barriers to cycling. Throughout this research I have been influenced by feminist thinking on gender and mobility, and have striven to conduct my research from a 'gendered' lens which seeks to avoid sexism.

3.2 Cycling and women's emancipation

Since the early days of cycling, there has been an association between using a bicycle and liberation for women. According to Carstensen and Ebert: 'some saw the bicycle as a great "emancipator" to help women learn about and demonstrate their strength and independence' (2012, p.29). In 1895 the American suffragette Frances Willard published a popular account of her learning to ride a bike in middle-age, entitled 'A Wheel within a Wheel' to which the later subtitle was added: 'A Woman's Quest for Freedom' (Hanson, 2010). This new machine which could provide independent mobility also challenged contemporary social norms around women's dress, which Willard hoped would lead to more 'rational' ways of attire (clothing which was more practical and less restrictive of movement) (ibid.). Hanson reiterates the case to say that gender and mobility are 'completely bound up with each other, to the point of almost being inseparable' (ibid., p.6).

These sentiments were echoed by American civil rights activist, Susan B Anthony, who wrote in 1896:

> I think [the bicycle] has done more to emancipate women than any one thing in the world. I rejoice every time I see a woman ride by on a bike. It gives her a feeling of self-reliance and independence the moment she takes her seat; and away she goes, the picture of untrammelled womanhood (Dawson, 2011).

However, the bicycle did not meet with completely universal approval; a few within the women's movement feared that this 'sporting device would keep women from tackling the real problems' (Carstensen and Ebert, 2012, p.29). Those using bicycles at this point in time were almost certain to be upper class women since bikes were expensive, and so out of the reach of most people. The idea of women using bicycles and the amount of freedom which it afforded them became a strong motif, which has re-occurred since. For example the recent Saudi Arabian feature film Wadjda told the story of a 10-year-old girls' quest for freedom by buying and riding a bicycle, an activity which is currently restricted for females in that country (Al-Mansour, 2012).

3.3 Current and historic gendered patterns of transport and mobility

Many studies have engaged with transport patterns generally from a gendered point of view (Arbour and Martin Ginis, 2009; Bell, Garrard and Swinburn, 2006; Dobbs, 2007; Garrard, 2003; Garrard, Rose and Lo Sing, 2008; Hamilton, 2003;

Hanson, 2010; Hjorthol, 2008; Hunter, Hatch and Johnson, 2004; Ker and Tranter, 2003; Rosenbloom, 2006; Stredwick, 2004; Emond, Tang and Handy, 2009). The main conclusions of these studies are that men and women's patterns of mobility are different. Women generally travel shorter distances, have a lesser degree of access to cars (where these are available in the household), have more complicated patterns of travel (often referred to as trip-chaining), and tend to use their mobility to help others more often, by escorting children or less-mobile or less-confident adults to education or other activities. Garrard *et al.* (2008) in their observational study of men's and women's cycling in Melbourne, Australia, found that women had made shorter cycling trips than men, so these general transport patterns seem to hold with cycling too.

The interpretation of such data, however, has varied, with some viewing greater gender equality as being provided by women having more access to cars, to give them the same transport opportunities as men (Hjorthol, 2008; Ortoleva and Brenman, 2004). Ortoleva and Brenman, in an American context, advocate that: 'counties should expand their existing programs or create new programs that lend money to welfare recipients and other low-income families to purchase cars' (ibid., p.274). This is prescribed to alleviate perceived problems of lack of opportunity for women in the transport sector. Similarly, Dobbs, in her mixed-methods study on the barriers to employment experienced by women in the North East of England, argues that women are 'stuck in the slow lane and their mobility deprivation often confines them to the private world of the family, or alternatively, to part-time, low

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paid work on the periphery of the labour market' (2007, p.85). Private transport in this study is only articulated in terms of owning or having access to a car, with the goal of achieving 'masculine' levels of mobility as desirable, in order to increase women's job opportunities (ibid.). This line of analysis urges women to follow the path men have, yet fails to examine whether the prevailing 'masculine' pattern is desirable, sustainable or even possible for women to reproduce.

Scheiner and Holz-Rau (2012) in a gender-based analysis of the German Mobility Panel study over a number of years examined how car usage was allocated within households. They found that social role (increased responsibility for household work and escort trips) and resource factors (the greater income earner) led to increased access to the available car(s) within the family, but that resource factors outweighed social roles (ibid., p.24). However, one weakness of the approach taken in this study is that it views the allocation of cars within the household from a 'car deficiency' viewpoint. The authors assume that a one car per adult household member is the 'correct' allocation, with anything less than this as a 'deficit.' For a family with adult children this could mean a less than four car household is seen as having a deficiency. This study also does not examine wider reasons and motivations for travel choice, such as the desirability of car use compared with other modes, and also excludes households which do not have a car (either by choice or economic necessity).

Other authors have taken a different view to those outlined above, arguing that modern patterns of land use and transport provision have made women's (typically more localised) journeys increasingly difficult and so have forced them to adopt car-based travel behaviour more out of necessity than choice; in other words limiting rather than adding to their freedom. As Ker and Tranter state: 'Many women feel forced into purchasing a motor vehicle because of fears for their personal safety as pedestrians, as cyclists or on public transport. Thus women may feel deprived of the freedom not to own a car' (Ker and Tranter, 2003).

This suggests a tension between those who advocate women adopting what may be seen as male, car-dominated patterns of transport, and those who argue for a more careful analysis of wider solutions including the provision of services which enable more localised transport patterns and which would favour greater levels of walking, cycling and public transport. Pooley et al., in their study of mobility in Britain in the twentieth century, argue that prior to the rise of the motor car there was: 'a consistent trend for women to be more dependent on walking and slower forms of public transport such as buses, trams and trolley buses. Before the rise of the motor car, men were much more likely to commute by bicycle and train' (Pooley, Turnball and Adams, 2005). However, the reasons behind such patterns are not clearly established, and equally, they may not necessarily be useful as indicators of potential future patterns of travel. Men's and women's participation in the workforce has changed significantly since then and social conditions are also

greatly altered since the early part of the 20th Century, which may indicate future changes in patterns of travel also.

The difference in the patterns of movement between men and women is an important aspect to consider when thinking about people's mobility. Trip chaining is the phrase which has been used to describe the typical daily movement pattern of many women, and a key study by Strathman and Dueker examined such patterns in detail (1993, cited in Bianco and Lawson, 1996, p.124). They found women were more likely to form 'complex commute and non-work chains than men' (ibid., p.124). So, we can see that many women may start their daily mobility by escorting children (if they have them) to nursery or school, followed by a return to home or a journey on to a workplace/education. On their way home after work they will often have a number of personal errands to run also, such as stopping off at the post office or picking up some food shopping. Then there may be a reverse escort journey and then home again. In contrast the majority of men have a much simpler pattern of daily travel; a commute to work and then back home again, with much less likelihood of having to provide escort trips or run errands (Bianco and Lawson, 1996).

Lehner-Lierz, in her study of travel patterns in Germany, provides interesting detail on gender difference in travel trips. In 1992, the average number of daily trips made by men was 2.8, whilst it was 6.1 daily trips for women; the highest number of trips were made by employed women with children (Lehner-Lierz, 1997). When the

amount of unpaid work (escort journeys, shopping, arranging children's activities, visits to doctors, dentists, banks etc.) undertaken by women and men is looked at, we see that men of all ages (apart from those who are retired) do an average of just under three hours per day. Women's unpaid work varied from nearly five hours to just over eight hours per day, depending on whether they were working, and or whether they had children. Critically if both partners were working and had children, the amount of unpaid work undertaken by the woman increased, whilst that of the man did not (ibid.). Working patterns per se were not examined in this study, and so factors such as unpaid overtime which may be a regular feature in some occupations is not taken into account. Obviously these data refer to trip patterns in Germany at a specific time period, and such patterns may have changed to some degree in that country and might not be as applicable in other countries. There is also possibly a terminology difference between this study and the UK transport planning, which may count many of these 'trips' as 'stages' (Department for Transport, 2014), although that in itself is an interesting, and potentially gendered, classification.

As Bonham and Wilson describe it; 'the potentially exhausting combination of domestic, carer and work journeys may make cycling a more difficult option' (2012, p.197). So, it is apparent that even if women are themselves keen to cycle, they may face a number of additional challenges to men, due to the more complicated responsibilities and hence journey patterns which they often experience. However, a paradox is present here, in the fact that if the particular pattern of journeys is

compatible with cycling (and other barriers have been overcome), then a bike can become an invaluable aid to such a busy and complex trip schedule. As Lehner-Lierz argues, it is this very attribute of speed and flexibility that has led to a substantial increase in cycling amongst women in Germany from the 1970's to the 1990's (1997).

In reviewing the literatures on gender and mobility Hanson argues that the two areas have been disconnected from each other, and that it is vital that they re-connect, especially with the increasing imperative to focus on sustainability within mobility discourse (Hanson, 2010). She stresses the need for synthesis across ways of thinking about gender and mobility, across qualitative and quantitative approaches and also across different places (ibid., p.5). It does indeed appear that such joined up approaches are rare within the sociological and transport fields. The present study aims to make a valuable contribution to viewing gender, mobility and sustainability in an integrated way, this will be revisited in Chapter Six in the discussion of gender aspects of the research results. Next I will look at how men's and women's movement patterns can also be influenced by the configuration of the spaces they need to navigate in order to run their daily errands.

3.4 Space, Design and Gender

Feminist research has shown that urban space is designed and built within a gender order which often prioritises men's viewpoints and preferences rather than women's (Marne, 2001; Scraton and Watson, 1998; Smyth, 2008). Schmucki (2012,

p.74) states that 'it becomes apparent that moving around in urban spaces is an experience which is or can be fundamentally different for women and men'. She uses a historical perspective to shed light on different patterns of gendered mobility. It is argued that women use public transport, and especially buses, more than men, for example, nearly 60% of bus journeys in London were undertaken by women (ibid., p.75). Schmucki further contends that the field of traffic engineering is dominated by 'middle class men between 30 and 60 with a good income and a car' (ibid., p.85). Such homogeneity, she believes, is partly responsible for a lack of focus on other modes of transport and a lack of interest in or exposure to the different experiences which other groups; women, children and older people have of travelling (ibid.).

It has been argued that it is discriminatory to be gender-blind and therefore designers who plan things equally for men and women actually are responsible for enforcing inequality rather than equality. For example, some authors argue that by providing the same amount of space for women's and men's toilet areas designers force women to queue, since more men can use a urinal quickly than can women using cubicle toilets (Greed, 2014; Women's Design Service, 2014).

In summary, design ideas, in common with many areas of life, are largely (though not always) decided from the viewpoint or convenience of men, since as we have already established they hold the primary positions of power and political influence within society (Connell, 2009). Such concepts are key when thinking about how

women and men may use urban space differently and how this may impact on their mobility and patterns of transport use.

3.5 Health patterns and gender

In this section I will identify relevant gender-related research from the health field. In this review I will discuss and critique literature which focuses on the impact that exercise and physical activity have upon health and whether there are gender differences in these impacts. From this it will be possible to see whether there are gender related determinants of health, and what impact increased cycling might have upon men's and women's health. I will also look at how transport has been viewed from the health perspective and the increasing move, especially from the public health sector, towards encouraging 'active travel'. This refers to walking and cycling, mainly as part of an individual's daily routine, such as their commute to work or education. Following this discussion I will look in more detail at cycling and gender, returning largely to the transport literature.

Within the health field there is significant concern over the insufficient amount of exercise which the majority of the UK population undertake, and their diet which is thought to contain too much fat, sugar, salt and processed food (Musingarimi, 2009). Therefore, there has been increasing interest from the public health sector in the contribution that walking and cycling as part of everyday activities (active travel) can make towards better health and decreased incidence of overweight and

obesity among the population. As has previously been mentioned, since only a quarter of women and a third of men achieve the government's physical activity targets of 30 minutes of physical activity at least five times per week (British Heart Foundation, 2005), the attractiveness of promoting active travel is apparent. As Woodcock and Aldred note: 'the obesity epidemic is linked to the shift from human powered to fossil fuel powered transportation, which contributes to an imbalance between energy expenditure and energy consumption' (Woodcock and Aldred, 2008, p.3). A greater proportion of people participating in active travel would automatically mean many more individuals achieving their daily physical activity (PA) targets.

Such claims are not uncontested, since some medical researchers have disputed the link between exercise and weight loss and argued that focussing on calorific intake is much more effective for prevention of weight gain, largely due to the small amount of calories often expended by many forms of low to moderate intensity exercise (Luke and Cooper, 2013). However, this study was chiefly focussing on obesity in the US, and exercise may play different roles in weight maintenance as opposed to weight loss, and also for different societies with different patterns of food consumption and physical activity. In a study of weight and car ownership in China, Bell *et al*. (2002, p.277) claim that: 'the odds of being obese were 80% higher for men and women in households who owned a motorised vehicle, compared with those who did not own a vehicle'. The balance of evidence still suggests that

regular exercise may help those within the healthy BMI range to remain a healthy weight (Davis, Valsecchi and Fergusson, 2007).

A recent Danish cross-sectional study focussing on men's and women's active travel provides evidence that 'commuting physical activity, independent of leisure time physical activity, was associated with a healthier level of most of the cardiovascular risk factors. An increase in commuting physical activity in the population may therefore reduce the incidence of CVD (cardiovascular disease)' (von Huth Smith, L et al., 2007). This study concluded that an active commute was sufficient in and of itself to help guard against heart disease, regardless of any other exercise which the individual partakes in. The researchers also found that this effect was strongest in women, so women may receive proportionately more benefit from active travel than men, though it is not clear exactly why this is the case. It may be linked to the amount of other, leisure time physical activity which men and women take part in, since women in general are known to exercise less (Azevedo *et al.*, 2007). Therefore, the protective effects from regular, long-term active travel may be of greater importance to women.

This pattern can also be seen among children. Voss and Sandercock's (2010) behavioural study of school travel mode and aerobic fitness in English children found that children who travelled to school using active modes were fitter than those who travelled by car or bus, although there were low numbers of children cycling to school. The effect was significantly greater for girls than for boys, with

70% higher fitness seen amongst girls who cycled or walked to school compared with 30% higher fitness for boys who did so (ibid.). Again it is not clearly understood why this is the case, though as above it may relate to a greater level of general activity amongst boys, meaning that the active travel component is less crucial overall for them. In this study more girls walked whilst more boys cycled to school. The authors concluded that; 'the positive associations between active travel and fitness are so strong that cycling should be encouraged, especially in girls' (ibid., p.286).

Different ways of encouraging walking and cycling for everyday journeys may help to increase their take-up. In a feasibility study trialling the impact of enabling people to hire pedometers from their local libraries in Kingston, Ontario in Canada, 40% of participants reported that wearing the pedometer increased their walking during the time they borrowed them (Ryder *et al.*, 2009). So, giving people motivational and tracking devices may be one useful way of encouraging them to increase their walking and cycling, although it is not known whether such an increase in walking was sustained over the longer term, and the sample was of course self-selecting by those who were already interested in trying the device.

For some sectors of society the promotion of cycling from a health and exercise perspective may yield significant results. The American based Association of Pedestrian and Bicycle Professionals (APBP) conducted an online women's bicycle survey and found that the most popular reason for cycling amongst their members

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was 'it's great exercise and it keeps me in shape' (Sibley, 2010). With 90% of respondents agreeing with this statement, it was more popular than 'bicycling reduces my stress' (73%), 'it saves me money' (72%) or 'it's very green and I'm doing my bit' (70%) (ibid.). The population who responded to this survey is certainly not representative of wider society, however, and is likely to be composed of individuals who are considerably fitter and more active than the average, and are by definition regular walkers and cyclists, which means the results are less generalisable.

Interest in active travel has led to some joint working between professionals within transport and public health; and vital pooling of resources in some instances to achieve joint aims. Some interesting examples of this are the Active Travel Consortium (a partnership between walking, cycling, transport and health bodies) (Active Travel Consortium, 2012), and the Cycling Cities and Towns programme (a partnership between the Department for Transport, the Department of Health and Cycling England) (report currently withdrawn). The Town and Country Planning Association also published a framework document on the new possibilities of health and planning working together afforded by changes in three sectors of legislation; the National Planning Policy Framework (2012), the Health and Social Care Act (2012) and the Localism Act (2011) (Ross and Chang, 2012). It is too early as yet to see how far joint working will be adopted, and whether it will be informed by gender perspectives.

This section has described the concern present in the health sector regarding the insufficient amounts of exercise undertaken by both genders, but especially women. Studies have shown that commuting physical activity (active travel) is a more important factor in keeping healthy and active for both girls and women, than in boys and men. This may be due to the aforementioned smaller amount of exercise generally by females, making active travel (where it is undertaken) crucial. Different ways of encouraging active travel need to be considered, and differing promotional messages which focus on health and exercise and on other factors need to be used, in order to reach disparate audiences.

3.6 Cycling and gender – what differences are there?

A significant factor when considering how best to increase cycling is that current uptake is unequally distributed, with only half (1%) as many transport trips by British women, compared to men with (2%) of all travel trips being cycling trips (Department for Transport, 2014) This modal share has declined and then stayed static for a number of years on an annual average basis, but for many individuals and in certain places cycling is clearly much more prevalent. Certain groups, such as older people and ethnic minorities are also currently under-represented (Stredwick, 2004; Department for Transport, 2014). This not only presents equity issues if some groups feel unable to cycle, but may also hinder efforts to encourage greater levels of cycling in the population if large sectors of society are simply not visible as cyclists. Studies of other socially desirable behaviours have found that simply

making the behaviour more visible may be one of the factors which can encourage

additional uptake (White *et al.*, 2009). This could mean encouraging more women

to cycle, so that they are present and visible 'on the streets', but may also mean

efforts to ensure that communications (print and social media, images and

promotional and campaigning materials) about cycling include a greater gender

(and age and ethnic) diversity.

The low level of cycling amongst women in Britain is a pattern which is common to

English-speaking westernised countries, such as Australia and the United States

(Garrard, 2003). These countries, like the UK, have a low cycling modal share

generally, which means that other forms of transport, especially the car,

predominate. The same is not the case in other countries with high cycling modal

share, such as Holland, Denmark and Germany where women cycle more than men

(ibid). The reasons why this is the case are not fully known, but a variety of

explanations have been offered, which will be documented next.

3.7 International cycling and gender differences

Looking more closely at some of these international differences, Pucher and

Buehler found that in low cycling countries such as the UK women made only 28% of

all cycling trips and in the US it was less than a quarter at 24% of all journeys by

bicycle (Pucher and Buehler, 2008). However in high cycling countries there was

little gender difference in bicycling rates. In Denmark 45% of trips were by females,

in Germany 49% and in the Netherlands women actually made the majority of cycling trips, at 55% (ibid.).

In the Netherlands, for example, 31% of all trips taken by women were by bike, compared with 26% of all trips by men (Garrard, 2003). A more recent study, based on the Dutch National Travel Survey, by Harms *et al.*, confirmed this general pattern. They found that of all transport trips taken a 28% share was by women cycling and a 25% share was men using the bike (Harms, Bertolini and te Brommelstroet, 2014). When looking in more detail at cycling levels within the Dutch provinces, women's share of cycling varies between 53% and 57%, so there are always more women cycling than men in all areas of the country (LARJ, 2005: 2). Also cycling patterns are more evenly spread in terms of age; '20% of trips made by those over 75 are by cycle' (ibid.). One in five trips being by bike amongst this age group is remarkable considering the rarity of seeing anyone of this age group cycling in the UK (Department for Transport, 2014). In these countries with a high level of cycling, a 'critical mass' has occurred, 'such that it becomes accepted that the bicycle is a 'normal' mode of transport (Davies *et al.*, 1997), and facilities are provided which make it safer and more comfortable.

In Belgium women also cycle more than men, according to recent research by Witlox and Tindemens. Their study used a two day travel diary undertaken with 6,600 residents of the Belgian city of Ghent. They found that cycling and walking both represented around 13% of all trips, so a combined total of just over a quarter

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of all trips (Witlox and Tindemans, 2004). In what they describe as the population of active age (20 - 65 years), women cycle slightly more, whereas in the younger population (below 20) females bicycled slightly less. Some of the overall gendered patterns of transport that have already been mentioned were again alluded to; men make more trips by car and they usually drive, whereas women are more often passengers. Women were more likely to use buses and trams, and men more likely to use the train (ibid.).

Similarly, in London, where levels of cycling have been increasing significantly over recent years, the gender gap is most evident in the youngest age group; 2% of females aged under 25 cycle, whilst 11% of males in the same age group do. In the 25 – 44 age group, 40% of males and 21% of females cycle, whilst in the 45 and above age group levels are similar at 12% for women and 14% for men (TfL, 2008). This shows that although women of all ages cycle less than men, there may be peaks of disparity in cycling levels at different stages of people's lives, and especially in the younger years.

In the US context, researchers have found that areas with higher levels of cycling tended to have a higher ratio of female to male cyclists (Emond, Tang and Handy, 2009). This echoes research in a European context by Smith (2005), who concludes: 'a more even balance of male-female cycling tends to be correlated with more cycling, reflecting a more mature, well-developed cycling market. As cycling retakes market share, it expands from early adopters (typically young males) to the wider

population'. The mechanics of how such a shift occurs is not currently well-known, however.

Recent research by Aldred *et al.* (2015) has looked at changes in the diversity levels of cycling within several UK cities where cycling levels have recently been increasing, such as London and Bristol. They found that whilst cycling modal share had increased in these selected UK cities, there had not been a corresponding increase of women cycling; rather it was more men who were taking up cycling in these areas (ibid.). In the US they state there has been what they describe as a worrying trend with gender inequality increasing as cycling modal share has increased.

There are places in the UK that have managed to increase cycling *and* have a more even gender balance, such as Cambridge where cycling modal share has increased from 28.3% in 2001 to 32.5% in 2011 and men and women cycle equally. There are also some signs that Bristol may have been able to achieve an increase in cycling, together with an increase in women cycling (Aldred, 2014, pers. comm.). Overall, according to the census data levels of cycling across the country as a whole are low and either stagnant or declining (Aldred, Woodcock and Goodman, 2015). As discussed in the previous chapter, however, there is some evidence that cycling and walking trips may be under-reported for various reasons.

Now that we have looked in depth at the numbers of women and men cycling across different countries and at different times, I will go on to examine some of the reasons people have proposed as to why such a gender divide exists with respect to cycling and what barriers may face prospective cyclists. Part of the reason why women in the UK cycle less than men may be due to patterns laid down in childhood. A 2009 evaluation of Merseyside Bikeability programme, which was aimed at encouraging more children to cycle by providing cycle training, found that 'males were reported as more likely to enjoy cycling, more likely to have improved confidence, more likely to be cycling, more likely to have increased their levels of cycling as a result of the training and more likely to have induced a positive response in their wider family towards cycling' (Moore, 2009, p.4). The study involved a telephone survey of 1,101 individuals who had taken part in the cycle training, conducted in March 2009. It is not known from this survey what the existing levels of cycling by the children involved or their wider families was, or what the confidence levels were for girls and boys before their cycle training took place, so it is hard to assess wider applicability.

These patterns may link to wider social norms about what is deemed 'good' and 'appropriate' activity for boys and girls. The differences become more marked at secondary school, where some girls were reported to have 'lost interest in cycling when boys came along' (ibid.). This echoes findings from Sustrans' Bike Belles initiative which found that teenage girls were most concerned that they 'didn't look good' when riding a bike (Henry pers. comm. 24/09/2009). Also, parents may be

much more likely to try and restrict the independent mobility of girls, more than boys, and may discourage them from walking and cycling (Brown *et al.*, 2008).

However, as Thorne notes, care is needed not to over-emphasise the 'different cultures' model of the socialising of boys and girls, and to recognise the whole spectrum of gender relations of children and young people (Thorne, 2002). Both boys and girls are subject to different parental expectations and family 'rules'; 'during childhood and adolescence, girls are more frequently warned about possible dangers and dangerous situations than boys are' (Hale, 1996, cited in De Groof, 2008, p.270). The subject of freedom of movement as a child/young person is discussed further in Section 6.8.4 Cycling with Children.

There are a number of reasons why cycling may offer a good transport and leisure solution for women and also why women may be more persuaded by the benefits of using a bike. As mentioned earlier, women often have more complicated patterns of travel behaviour, which may be managed more easily by bike, if other barriers have been overcome (Lehner-Lierz, 1997). If facilities are present, a trip chain which involves dropping a child off at school, picking up a few items from the shop, visiting the post office and then going to work yourself, may even be accomplished more quickly and easily by bike than by any other mode and does not involve looking up lots of complicated timetables, or searching for car parking spaces.

If some of the key barriers to women's participation in cycling can be overcome, using a bike may provide women with a flexible, quick and cheap transport option, especially in large urban centres. Some research has found that women can sometimes feel safer on a bike, as compared to walking, as Aldred (2008) found with one of her interviewees: "As a woman… I kind of think I'm less vulnerable on a bicycle so I would cycle places where I wouldn't walk." Of course, whilst women may feel safer on a bike than as a pedestrian, they may still feel less safe as a cyclist than as a driver, depending on location and circumstance.

So, this raises a number of questions concerning women's participation in cycling compared with men in the UK. As previously discussed women on average are less active than men, with lower levels of interest in organised sports (however these are usually male dominated, with female sports having a much lower status and profile) and exercise generally and if they perceive cycling as a primarily sporting activity, may be less interested in taking part. Merom *et al.* (2003, p.240) have suggested, in their study of the awareness and impact of a new traffic-free cycling trail in Western Sydney, Australia, that women may have had a lower degree of awareness about the trail since they are simply 'less interested in cycling' as they participate in it less. Parkin has argued that factors such as 'self-image, perceived ability and social norms also play a part', though again, these have not been comprehensively examined with respect to gender (Parkin, Ryley and Jones, 2007).

In Germany, Holland and Denmark there has been a determined and highly
successful effort to reverse the declining share of bicycle usage which became
common to the majority of Western European countries with the increasing
affordability and popularity of the car. Policies to deliberately provide facilities for
cyclists and to 'tame' the dominance of motorists were implemented, which stands
in contrast to the 'predict and provide' attitude so often prevalent in UK transport
planning (Vigar, 2002). This way of thinking - highly dominant in the British (and
American) transport spheres - involves not only the perception that the car is the
'rightful' user of the road, but also that increasing amounts of new road
infrastructure need to be built to accommodate the rising number of motorists
(ibid.). Recent decisions by government to cut funding to the Cycling City
programme, whilst continuing with a £15 billion major road building programme
('Road Investment Strategy'), suggest that such an attitude may be in favour once
more with the present government (Clarke, 2015).

3.8 Gender and Barriers to Cycling

One of the crucial questions for those who wish to increase levels of cycling is to
consider obstacles or barriers that the potential cyclist might encounter. To
examine the ways gender impacts upon such barriers and the relative importance of
barriers for men and women is one of the aims of this research project, as the
research evidence demonstrates this is, as yet, unclear. There are many other
important social factors linked to barriers to cycling, such as age, ethnicity and

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social class, but these are not considered in depth in this review, since they are outside the scope of this study, which necessitates focussing on gender.

This study explores further the barriers to women cycling more, some of which are believed to be: personal safety concerns (Atkins, 1986; Davies *et al.*, 1997; Dickinson *et al.*, 2003), traffic safety concerns (lack of quality facilities such as off-road and segregated on-road routes) (Garrard, Rose and Lo Sing, 2008; Stredwick, 2004; Bell, Garrard and Swinburn, 2006), lack of cycle parking, showers and bike storage facilities (Stredwick, 2004), poor weather conditions and topography (Gatersleben and Appleton, 2007), concerns over personal appearance (Davies *et al.*, 1997), family commitments (Dickinson *et al.*, 2003) and psycho-social and cultural barriers (Gatersleben and Appleton, 2007), or simply a lack of interest in cycling (Merom *et al.*, 2003). Akar *et al.* (2013, p.363) argue in their study of bicycling in Ohio, that whilst the same barriers exist for women and men (commuting distances, carrying things, changing clothing and the availability of non-car options) women are more likely to perceive them as barriers, suggesting different thresholds.

Fear as a barrier can be broken down further into both actual fear of both volume and speed of traffic, perceptual fears of the same and also both real and perceptual personal safety concerns or fear of being attacked. Obviously these are complicated concerns and will be different for each individual, depending on personal factors such as emotional and psychological states, as well as deliberative rational efforts.

3.8.1 Traffic concerns/lack of infrastructure

Some studies have found that barriers to cycling are split along gender lines, with a few researchers concluding that women prefer separate cycling facilities, either partially or totally segregated from motor traffic (Ajzen, Brown and Carvajal, 2004; Garrard, Rose and Lo Sing, 2008; Parkin, Ryley and Jones, 2007; Stredwick, 2010). This evidence has been fairly consistent across a number of studies, and it is also often found that non-cyclists or infrequent cyclists request such facilities also (Melia, 2015), whilst experienced, confident, male cyclists may feel more comfortable not using them. A recent Transport for London report on cycle route choice also found that females were more inclined to use safer, segregated cycling facilities, even when it meant a longer journey, but that this option was popular with both men and women (Transport for London, 2012). Interestingly, the recent Bike Life (Bristol) study commissioned by Sustrans found overwhelming support for more traffic-free routes, regardless of level of cycling experience, although separate male and female views were not given.

Studies which have looked at people's cycle route choice can be separated into stated preference (where people are asked their hypothetical choice between different items), self-reported behaviour (participants stating which facilities they would/do use) and observed behaviour (which involves objective measurement of participants choices). A recent study involving objective measurement using data from the London cycle hire scheme showed distinct gendered patterns of travel, with women choosing: 'select areas of the city associated with slower traffic streets

and with cycle routes slightly offset from major roads', even when making utilitarian cycle trips (Beecham and Wood, 2013, p.83).

3.8.2 Personal safety concerns

Personal safety concerns are of particular importance to women who may both be more likely to report violent or harassment incidents, and also to fear them more (Atkins, 1986). Atkins also notes that the way in which such incidents are viewed is unhelpful: 'a lack of appreciation and understanding is common, together with a presumption that such incidents are an everyday, normal occurrence and should be accepted as part of urban living for females' (ibid. p.5). Such a threat and fear of violence, also needs to be seen in terms of women's unequal power status in a patriarchal society. As Spalek states 'violence and abuse are "normalised", ignored or under-played in patriarchal societies' (Spalek, 2007).

Men are substantially more likely to commit violent crime and also to be the victims of it, apart from domestic and sexual violence (Frost and McClean, 2014). Women do therefore encounter additional forms of violence, such as sexual harassment and rape, which they can fear, and which may alter their behaviour. They may also be concerned about their physical ability to be able to counter any threat or violence which they do experience. Recent social media and research projects such as Everyday Sexism and Everyday Victim Blaming have been documenting instances of

gender-based threats, intimidation and violence, and aim to help change societal norms around them (Bates, 2015; Everyday Victim Blaming, 2015).

Handy argues that: 'this difference between the genders in the level of personal safety concern is especially prevalent in public places, including the transportation system' (Handy *et al.*, 2002). This may impact directly on levels of cycling and walking, with those viewing their neighbourhoods as unsafe being less physically active (ibid.) (although as noted earlier, there may be differences between these modes in terms of perceived user safety). A study of how safe male and female students and staff felt at an American university campus found a more than three-fold difference in the numbers of females who were concerned about their personal safety on campus compared with males, and also found that women were more likely to restrict their movements because of this fear (Bianco and Lawson, 1996).

Another university study at Portland State University, Oregon found that women were more likely than men to express dissatisfaction with lighting on their way to and at car parking facilities on campus (Bianco and Lawson, 1996). This research was based on a travel survey sent to a randomly computer generated sample of 770 part-time and full-time students and staff at the university. The study did not ask whether the dissatisfaction resulted in any change of behaviour, and appeared to focus on students and staff driving to campus only, rather than on their experiences of other modes.

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3.8.3 Cycling confidence

Many women may also perceive their ability to ride a bike as low, making them less likely to want to cycle, especially on roads. Rider position may have some influence here also, with less experienced and less confident cyclists tending to ride on the edge of the road, near to the pavement, contrasting with vehicular cycling as discussed in Section 2.2. Walker, in his study of driver behaviour when overtaking cyclists, found that 'the further the rider was from the edge of the road, the closer vehicles passed', so there may be some justification for this hypothesis (2007, p.417). However, there was potentially some comfort for women (or perhaps just those women who have long hair) from another of his findings; 'when the (male) experimenter wore a long wig, so that he appeared female from behind, drivers left more space when passing' suggesting that this may provide a reduced degree of danger for women cyclists (ibid., p.417).

Counter to Walker's study, a recent examination into 'near-miss' (problematic or frightening experiences that did not result in injury) incidents amongst cyclists, found that women had a higher incident rate than men, and that this was related to their lower speed of cycling and shorter trip distance (Aldred and Crosweller, 2015). Discussing the differences in these findings to the previous study, the authors suggest that women may have a lower threshold for motor vehicle proximity incidents, or that Walker was not correct in his assumption that vehicles thought he was female (ibid.). Another possible reason may be that drivers/other transport do behave differently depending on the gender of the cyclist, but that it is in the

opposite way to that argued by Walker; that women experience more rather than less aggression. Aggression and hostility when cycling is discussed in Section 6.4.

3.8.4 Personal (dis)comfort

There is some evidence that women may be less willing to overcome issues of discomfort when cycling than men. Emond et al., in their study of cyclists in Davis, California, found that the most important determinant of cycling for women was their 'level of comfort bicycling' (Emond, Tang and Handy, 2009). Although men experienced the same (subjective) discomfort on average as women, they were more likely to state that they would ride anyway, whereas women said they would not. What exactly is meant by 'comfort' in this context is not clearly stated and it could be related to different aspect of physical and/or psychological comfort.

3.8.5 Environmental behaviours

Research has suggested that women may be more willing to adopt behaviours which they perceive as being good for the environment (Kollmuss and Agyeman, 2002; Hunter, Hatch and Johnson, 2004), of which cycling may be seen as one. Hunter *et al*. (2004) found that this was quite a nuanced picture, with women being less likely to take part in 'public' environmental behaviours, such as volunteering time and attending meetings, but were more likely to engage in 'private' environmental behaviours such as recycling, driving less and eating organic foods. The categorisation of cycling as a 'private' behaviour may be questioned, since

some would argue that it is a highly visual and so public behaviour. For the purposes of the study cited above, however, 'private' relates to those behaviours which relate to normal household functioning and routines, and so would include such things as shopping and walking and cycling in the course of such routines. This may bode well for encouraging greater numbers of women to cycle, by appealing to environmental concern.

Studies have also found that along with a greater environmental concern, women 'showed greater scepticism towards the role of technology in the search for solutions to environmental problems' (Wehrmeyer and McNeil, 2000, p.211). This may also suggest a greater interest in cycling by women as a sustainable transport solution, rather than a technological solution such as biofuels or electric cars, provided that the significant barriers mentioned earlier may be fully recognised and overcome.

3.8.6 Different reasons for and against cycling

Pooley et al. in their analysis of mobility patterns during the 20th Century, found that whilst the reasons men and women gave *for* cycling to work were similar, the reasons for *not* cycling were different. Men were most likely to cite a lack of safe bike storage, laziness, the need to look smart for work and the weather. Women, on the other hand, were more likely to give the following reasons: fear of cycling in urban traffic (or that other's fear prevented them), that they had never considered

cycling to work or that they could not afford to purchase a bike (Pooley, Turnball and Adams, 2005). This would seem to add further weight to fear being a significant factor as a barrier to women's participation in cycling.

3.8.7 Low status of cycling

Women may also fear that they will be socially marginalised if they cycle whilst others drive and so may view cyclists in a negative light. Some studies have found that the perceived low social status of cycling is a deterrent to many (Aldred and Jungnickel, 2012; Davies *et al.*, 2001). In reality the pattern is not clear cut, with the most bike trips being taken by people from the highest and lowest socio-economic groupings, and fewer trips being made by those in the middle income groups, according to the National Travel Survey (Department for Transport, 2014). Parkin found that 'wards with higher proportions of 'higher professionals' display higher levels of cycling to work' (Parkin, Ryley and Jones, 2007). Despite the figures, it does not appear to be correlated with high-status for many people, and an assumption may be made that those who are cycling cannot afford to drive.

However, these patterns may be more applicable to men, since they make up 70% of current cyclists and it is not clear how such status issues might impact on women. Prior marketing of both cars and bikes has largely been to men, rather than women, and it is believed that men may invest more of their status in cars or be more emotionally attached to them than women (Steg, 2005). Advertisements appeal to

peoples' emotional desires for 'power, control, self-esteem and social status' (Steg, Vlek and Slotegraaf, 2001). Some car advertisements seek to make a direct cognitive connection between an emotional state and the product, such as the 2010 'Story of Joy' advertising campaign for BMW, which used emotions to appeal especially to women and 'Generation Y' (J. D. Power and Associates, 2010).

3.8.8 Sports culture and cycling

Additional cultural barriers may include the perceptions of cycling as a 'sport' which is off-putting to some women and the general macho/technical image of current UK cycling, where women feel they may be made to look ignorant (Davies *et al.*, 1997). Some bike shops, cycling magazines which tend to show young 'sporty' men on mountain bikes and some cycling organisations may also exacerbate these perceptions (ibid). Showing female role models to whom non-cycling women can relate has been suggested to counteract this to some degree (Davies *et al.*, 2001). Having more female participants in cycling groups and campaigns and more women writing about their experiences of cycling may help to balance some of the male-dominated nature of much cycling culture.

3.8.9 Cycle chic and the 'girlyfication'/commodification of women on bikes

As discussed earlier in this chapter, most UK women may not see many or any other women cycling on a regular basis in the areas where they live. Also, much of the media representation of cycling has been dominated by images of men and/or of

sports cycling. There have been some examples of a counter movement to this within cycling culture, such as the 'Cycle Chic' movement. Launched in Copenhagen by Mikael Colville-Andersen, the stated aim of the organisation was to fuse urban style and cycling, and has since influenced many other similar blogs, websites and other forms of social media. The book which came out of this process, Cycle Chic (Colville-Andersen, 2012), is a collection of photographs of people cycling, together with commentary about them.

Cycle chic has had success and international acclaim amongst many in promoting a certain kind of cycling culture and indeed in encouraging uptake of cycling with a younger and more 'hip' generation. However it depicts, reflects and reinforces a certain view of cycling, particularly so for women. The women, and it is mostly women (80-90% of the images), who feature in the Cycle Chic book and blog, are young, slim, usually white and very attractive (i.e. Image 2). There is little place here for the less attractive, less stylish or anything less than model-slim female, which feeds into the current orthodoxy of women's primary value as decorative objects (Elly Blue Publishing, 2012; Mather Saul, 2003).

Image 2: A typical 'Cycle chic' cycling image

© Copenhagenize Design Company

In a similar vein, Sustrans' 'Bike Belles' (Sustrans, 2013) campaign (see Image 3 below) (see Section 6.8 for a mention of this by one of the research participants) was heavily influenced by the appearance concerns of women who may potentially ride bikes, with articles on how to cycle stylishly and without messing up your hair (ibid.).

Image 3: Sustrans Bike Belles information booklet front cover

The Bike Belles Guide
For women who want to cycle

sustrans
JOIN THE MOVEMENT

Image courtesy of Sustrans

So we can see that a majority of the images and portrayals of cycling involve men, often in a sporty, aggressive style. Whilst women are often absent from such imagery, when they do appear, it is often with an emphasis on their attractiveness. Ordinary women enjoying their cycling, women who are not always stylish, slim or conventionally beautiful are hard to find. Steinbach et al.'s (2011, p.1123) qualitative study of cycling in London argues that: 'while the identities of some professional (largely white) men and women could be bolstered by cycling, aesthetic and

symbolic goals of cycling were less appealing to those with other class, gendered and ethnic identities'. This makes the point that cycling culture needs to broaden if it is to appeal to a wider segment of women, as well as younger and older people and people from ethnic minorities.

3.9 Suppressed or latent demand for cycling

Several authors have made a case for there being a supressed demand for cycling, especially from women. Garrard argues that; 'among women, there may be an interest in and capacity to participate in cycling that is not being translated into practice' (Garrard, 2003). Stredwick, from the enthusiasm shown by her action research participants in the Cycling for Women project, believes there is; 'huge suppressed demand for cycling from women of all ages' (Stredwick, 2004, p.8). If we can better understand the ways in which barriers are currently stopping women from participating in cycling, this should lead to clearer calls for action in this area.

3.10   Chapter Summary

With this chapter I have provided an analysis and overview of gender relations within the sociological, transport and health fields and examined the ways in which men and women have been viewed within these fields. This literature review provides an assessment of academic, policy and popular viewpoints on cycling and gender and to highlight gaps within the literature. Firstly I gave a brief outline of

the 'gender order' or unequal relationships between women and men which feminists have identified and researched, and stated how feminist thinking has influenced my approach to this study. The key characteristics of men's and women's mobility and health patterns, the design of public space, and how these are linked to gender inequality are delineated. Different prescriptions which have been offered to alleviate the perceived transport disadvantage which women may have were discussed.

The key topic of cycling and gender was discussed; the different characteristics of men's and women's cycling were identified, both in a UK and an international (largely Western) context. Barriers to cycling for women were highlighted, including; traffic and personal safety, confidence, comfort, and different reasons for and requirements from cycling. Differing aspects of cycling culture were provided; sports and fitness, perceived low status, lack of inclusivity and the 'girlyfication' of cycling in some areas. Yet to be identified is a space for a gendered portrayal and practice of cycling which has a wider appeal to many different kinds of women, rather than the narrow segments who are currently 'visible'. In the next Chapter, Four, I will turn to another area of literature, social influence, and appraise the research in this sphere relevant to cycling.

Chapter 4:   Social Influence in the Transport and Health fields

In this chapter I turn my attention to the social influence aspects of this thesis; and review the literature which will help inform my questions which ask about the relationships between cycling and social influence. These questions ask both about the role which social influence plays in encouraging cycling and also about any apparent gender difference in this process. Therefore I need to examine the social influence literature with a gendered lens in order to take forward a theoretical stance which includes men's and women's perspectives.

Firstly I shall examine the trajectory of these theories, from being an area dominated by the 'rational choice model', to one in which a variety of aspects of behaviour change are emphasised and explained. This involves a critique of this model due to problems concerning affect, norms and habit, which it is believed render rational choice untenable. Feminist thinkers have also noted and challenged the implicit connections between the pursuit of 'rationality' and male dominated thinking; and the assumed inferiority of more feminine ways of thinking (Ramazanoglu and Holland, 2002).

The importance to humans of their social relationships is reviewed next and the effects of having insufficient social networks is discussed. Following this, I describe the variety of ways in which social connections and influence may operate, before focussing directly on the forms of social influence which I will examine in this research. A summary of the literature reviewed and how this was used to develop

the research questions relating to social influence, concludes this chapter. In the following chapter, Chapter Five, I describe and assess my methodology.

4.1 Introduction to rational choice and its underpinning beliefs

Over the last few decades a great deal of interest has been shown in a range of theories and methods which examine our social relations and in what ways people influence one another. Within this sphere, which includes input from the fields of economics, social psychology, behavioural economics, anthropology, sociology and social marketing, answers have been sought to help solve some of our more intractable social problems.

Rational choice, rooted in economics, presumes that individual self-interest is paramount in peoples' decision making, that choices are deliberated in a rational manner and consumer preferences are not greatly investigated. As Jackson (2005) argues, this approach is often so ubiquitous and deeply held, that it simply seems like common sense which needs no questioning. The roots of such thinking lie with Cartesian dualism, following on from Rene Descartes and the founding of philosophy which sought to distance modern civilised 'Man' from animal and natural aspects of his behaviour (Ramazanoglu and Holland, 2002). The Enlightenment thinking which separated mind from matter (or reason from passion), was also used to entrench the differences between humans and animals, men and women and civilised and uncivilised peoples. This line of thinking clearly establishes a hierarchy,

in which 'rationality' is superior and emotions come to be defined as illogical/inferior. The three key assumptions which lie behind rational choice theory are; a) choices are made in a rational manner, b) we should focus our attention on the choices made by individuals (rather than family or other groupings), and c) that individuals make choices with their own self-interest as their primary motivation (Jackson, 2005). Each of these has been comprehensively critiqued.

The rational choice model has now been criticised as being not only rigid and too limited in scope, but also that the above assumptions upon which it is based, are flawed (Jackson, 2005). Such criticisms have come from a number of fields, sociology, psychology, feminism and from within economics itself. Despite such sustained criticism, however, it is still holds a great deal of weight and is still much used in many fields, including transport and health research.

Many alternative theories instead have a premise that people usually do not necessarily behave in a rational, predictable, self-interested way, but instead are greatly influenced by both their own values, beliefs, norms and emotions and also by those of others. One previously held assumption is the idea that decisions are always carefully pondered, whereas other, newer research has found that people use 'mental short-cuts' – habits, routines, cues, heuristics – which reduce the amount of cognitive processing needed to act and often bypass cognitive deliberation entirely' (ibid., p.vii).

4.2 <u>Critiques of rational choice</u>

4.2.1 Affect

One of the chief criticisms which can be levelled at rational choice theory, is about rationality being the basis of decision making. Many academics, especially those from the social psychology field, believe that people are far more likely to base their purchasing decisions on emotional or affective concerns, rather than rational ones. There is considerable evidence that people's purchasing is as much to do with the symbolic meanings which they attach to the objects concerned (Mead, 1934), as to do with a lengthy weighing up of the pros and cons of the behaviour to the person concerned. For example, in the case of car purchasing and ownership, people may base their decisions as much on their feelings about the image of a car (i.e. as representing freedom or sexual attraction), as on rational, practical factors, such as fuel efficiency or price (Sheller, 2004).

The 'affective turn' is described as 'the turn or change from 'rationalist' scientific discourses to more holistic, psychoanalytically and psycho-socially influenced discourses in the social sciences. Exploring the emotions also allows us to move beyond conventional Cartesian (e.g. dichotomous) models of thinking that see mind and body, and individual and society as separate' (Frost and McClean, 2014). Hoggett and Thompson (2012) describe how this recent renewed interest in the embodied experience of affect and emotion in social life, has come from

many disciplines simultaneously; philosophy, psychoanalysis, psychology and neuroscience. As they also wryly note; 'it might be argued that by means of these theoretical developments the social sciences have done no more than begin the long process of catching up with the world that unfolds around them' (ibid., p.2).

Barbalet, who argues strongly for the recognition of the emotions in sociology and when studying social life, maintains that the insistence on rationality as the basis of decision-making, ironically has its own emotive content (Barbalet, 2001). As he contends "the conventional approach which holds that emotion is the opposite of reason is ultimately subverted by the fact that those who wish to suppress emotion in fully realizing reason are typically engaged by an emotional commitment to the project" (ibid., p.29).

He identifies three differing approaches which have been taken regarding the relationship between emotion and rationality; a) the conventional oppositional approach, typified by Max Weber (1864 – 1920), b) the critical approach in which emotion supports reason, supported by areas of psychology and neurology, and c) the radical approach which sees them as continuous or constantly at interplay, as proposed by William James (1842 – 1910). The first position, as already outlined, sees emotions as undermining of rational decision-making, believing that maturity requires repression of them. A typical expression of this position would be Rene Descartes belief that emotions, which were things done

to them by their bodies, subverted their rational thought processes and so

should be repressed (1931, cited in Barbalet, 2001). The critical approach,

outlined by Ronald de Sousa, argues that emotions are actually as essential as

rationality for decision-making; 'Despite a common prejudice, reason and

emotion are not natural antagonists... Emotions are among the mechanisms

that control the crucial factor of salience among what would otherwise be an

unmanageable plethora of objects of attention, interpretation, and strategies of

inference and conduct' (1990, cited in Barbalet, 2001). The third, radical

approach to the relationship between emotion and reason, articulated by

American philosopher William James, is that all aspects of the person work

together to form their attitudes and actions; their will, taste, passion and

intellect are inseparable (cited in Barbalet, 2001). To accept a role for emotions

within decision-making, and subsequent purposive action, is not to undermine

the role of the rational, rather it is to argue that emotions are a foundation for

reason and essential to its proper functioning.

Whilst I will not expand further upon these different approaches here, this brief

introduction identifies that there have been numerous ways of thinking about

the interplay between emotion and reason proposed, and that the separation-

based or oppositional underpinnings of rational choice theory are only one

potential way of viewing the two aspects.

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Barbalet also exposes the fallacy of the 'rational actor' model, by analysing how people project decision-making into the future; 'by definition, the future cannot be known and therefore actors cannot have available to them information which might form the basis of calculations for the orientation of action. Instead, action is necessarily based on the feeling of confidence actors have in their capacities for successfully engaging the future' (ibid., p.101). Here, where information is unavailable, people must proceed using the emotion of confidence to help them decide what may happen in temporality, the obverse of the oppositional stance of emotion and reason. In a transport context, this may mean needing to have the confidence to try cycling to work for the first time, or trying a new route. In this case a person may only have a partial sense of what the experience will be like, perhaps by talking to a colleague about it, or having looked at the route on the map. A belief in a successful outcome of arriving at work is necessary for this to be tried out at all.

4.2.2 *Norms*

Norms are social expectations of proper or acceptable behaviour in a certain social situation that often guide how people behave, and are therefore important in the discussion of social influence. Many different theories have been proposed as to how norms operate and how we can measure their influence in personal interactions. Some of the theories which have been influential in this area are; Ajzen's Theory of Planned Behaviour, Triandis's Theory of Interpersonal Behaviour, Schwartz's Norm-Activation Theory, Stern's

Value-Belief-Norm Theory and Cialdini's Focus Theory of Normative Behaviour (Jackson, 2005). Subjective norms are described within the Theory of Planned Behaviour as: 'the amount of pressure that people perceive they are under from significant others to perform or not perform a behaviour' (White *et al.*, 2009). Some examples of popular books in this area which synthesise different theories are Thaler and Sunstein's 'Nudge', which focuses on how small signals in policy can persuade people to adopt socially or environmentally desirable behaviours, and Gladwell's 'The Tipping Point', which explores how behaviours spread quickly in a viral way, and how such phenomenon may be countered and/or utilised (Thaler and Sunstein, 2008; Gladwell, 2002).

4.2.3 Habit

The main thrust of this critique of rational choice, stems from compelling evidence that contrary to the assumptions of rational choice theory, most decisions are not carefully and dispassionately weighed each time. Instead they may be made 'on the fly', without much weighing up at all, they may have a largely emotional or moral component or as discussed earlier, or indeed that no conscious decision-making is involved at all. For example, in transport research, many people may not weigh up each day their potential travel options for a journey to work, school or college (Avineri *et al.*, 2010). Largely, they may be accustomed to making their journey by a particular mode, for example, cycling from their home to work and back (ibid.). People will automatically get together the items they need for this journey without thinking about it, on

'auto-pilot', to use a common phrase. So if they have a pannier to carry items to work they will get this out and pack it as an automatic part of their morning routine.

There may be circumstances under which the decision to travel by this mode would warrant more conscious choice, maybe if it is raining or snowing heavily, or if the person feels unwell or there is a problem with the bike. But apart from these, for most people, unusual circumstances, the decision to commute by bicycle was made a long time ago, has been found satisfactory by the commuter in question (or at least more satisfactory than the other options available to them) and so they continue with the behaviour without necessarily questioning or weighing up other alternatives (Avineri *et al.*, 2010).

This habitual behaviour is thought to be quite strong in many aspects of our routine behaviour and purchasing decisions (Lally and Gardner, 2013), and so undermines one of the key assumptions of rational choice. When we receive new information which relates to our commute to work, we may even dismiss it, as we are so habituated to our commute and cycling is so ingrained that we do not particularly wish to expend the effort required to potentially change it. Due to the extent of this habitual, automatic behaviour in which we seem 'locked-in' to a particular way of doing things, there has been much interest within the transport field in attempting to change travel behaviour at transitions - a point in peoples' lives where there is already upheaval and so a chance to break these

habits; moving house, change in family size, or the transition from home to university for example (Clark, Chatterjee and Melia, 2015).

There has been some success reported from catching people at these key life stage events and attempting to provide them with new information or messages at a moment when they actually require new information and a strong habit has not already been formed (Goodwin, 2008). Clearly part of the picture of habit strength will lie with a person's particular schedule and lifestyle pattern, and also their psychological framework; some people are naturally drawn to predictable routine and forming strong habits in many areas of their lives, whilst others may be much looser and open to trying and experimenting with new ways of doing things. Of course there are also very real and tangible barriers for some to change behaviour, in terms of cost, health, and level of responsibilities for tasks and other people.

4.2.4 Feminist critique

As mentioned previously, much of the feminist thinking on rational choice, or the separation of emotion and reason, stems from the realisation that Cartesian dualism can be seen as essentially a way of rationalising and legitimising prejudice against women (hooks, 2000 p.105). Some feminists have also argued that this binary logic led to all forms of patriarchal domination over other groups in society; 'the ideological foundation of all forms of group oppression, sexism,

racism etc' (hooks, 2000, p.105). Therefore, for a particular group of feminists,

mapping out their own experiences and alternative understandings of key social

features (c.f. Standpoint feminism), in a way which recognises the emotional

and rational aspects of women's lives and their differing conceptions of social

phenomenon (Ramazanoglu and Holland, 2002), has been critical. These ideas

have informed my choice to pay equal attention to both women's and men's

experiences of cycling and also the affective and instrumental dimensions of

these experiences.

The affective turn has been described earlier in this section, and here I provide

further detail on how feminist thinking on affect has informed my work. Gorton

argues that feminist scholars have been centre stage in this turn towards the

emotions in research, partly since feminism is a 'politics suffused with feelings,

passions and emotions' (Gorton, 2007, p.333, cited in Pedwell and Whitehead,

2012). This reclaiming of affect has been key in many strands of feminist theory,

due to the denial, downplaying or marginalisation of emotional content in many

theoretical approaches, including positivism. Indeed Boler (1999, cited in

Pedwell and Whitehead, 2012) argues that feminist thought developed a 'politics

of emotion', notably through the slogan the 'personal is political'. However,

some feminists have expressed concern about the enthusiasm for the

possibilities of affect and that it must be 'tempered with acknowledgement of

the persistent difficulty of generating structural transformation through

projects of collective feeling' (Pedwell and Whitehead, 2012). This highlights the

necessity of paying attention to both peoples' inner emotional lives and the wider social structures which impact upon their lives.

When designing my research I wished to provide space for interviewees of both gender to express the emotional side of their cycling experiences, alongside the more practical side. Therefore, I kept questions open to invite a range of responses and also structured the analysis along affective and pragmatic lines (for more detail on this please see Chapter 5, Methodology). Whilst there are some challenges with defining the boundaries between these two groups, and issue may be taken with some of the categorisation, I felt this gave me a useful way into showing how peoples' emotions relating to their cycling were an important part of the study.

4.3 Structure and agency

Much of the analysis of where the problem lies with regard to encouraging greater levels of cycling generally, and for women in particular has focussed on individual choice as the level at which attention should be paid. Such a line of thinking attributes responsibility to the individual and leads to the extension that those who choose not to take up the healthy intervention (cycling) may be lacking in interest or motivation. To illustrate this viewpoint, let us take the case of the lack of women cycling. Because some (usually fitter older) men are cycling despite a hostile climate, when women do not choose to cycle, the reason is seen as lying in their range of control. So, women who do not cycle can be viewed as lacking in

competence, confidence, skills or knowledge, and the onus may be placed on them to remedy this. Otherwise, they would be choosing to avail themselves of the opportunity to cycle. From a critical realist perspective, which influences this study (Section 5.3), both structure and agency need to be viewed together to discover the roots of any problem, but also its solution. Therefore, whilst individual choice (agency) is part of the picture of whether or not a person cycles, so too is the social and political context (structure) in which their choice is made and which makes some choices more likely and tenable than others, and attention needs to be paid to both.

4.4 The importance of social networks to human functioning

People rely on other humans socially in a whole host of ways; sharing information, forming friendships and loving relationships, assisting each other economically and providing help in times of challenge or crisis. The friendship groups which individuals form, may last for a lifetime, and can assist people in weathering the emotional difficulties which we experience at times of stress or trauma. Frost and McClean (2014, p.60) argue that '...having friends and being part of a group (connected to a social network) are determining features in terms of mental well-being and resilience'. Social connections are one of a range of factors involved with 'well-being'; in which there has been much research interest in recent years. Frost and McClean describe well-being as; 'to do with human capacity (emotions and the affective qualities as well as

knowledge, health and the cognitive skills of an individual), culture and values (material) and social ecology (the community relationships)' (ibid., p.60).

4.5 Types of social influence

There are clearly many ways in which people may be influenced or persuaded by others, and these operate at many different levels of remove. Some of these channels of communication are; media (film, television, radio, newspapers, magazines), social media (twitter, blogging, facebook, youtube, Wikipedia, Linked-in), electronic distribution channels (websites, email, texting), paper based media (flyers, posters, billboards, business cards) and face to face social relations (Hill, O'Sullivan and O'Sullivan, 2003). Some of these channels are only used to communicate by individuals or organisations uni-directionally to us, whereas others are more interactive.

These lines are also increasingly blurred as many forms of former distributive channels now have an interactive component. For example newspaper articles are posted on the newspapers online sites before many people are able to obtain a paper copy. Also many stories have a comment section, which may (or may not) be read as thoroughly as the journalist's article itself by the reader, depending on their interest and reading purpose. Many commentators may continue to follow the thread of the comments section, and continue to reply in

order to reiterate their argument, debate points with others or add further items for discussion (ibid.).

For the purposes of this research I am primarily looking at person-to-person influence; although clearly participants will be exposed to many or even all of the mediums outlined above. Most of the person-to-person interactions which will be discussed with my interviewees are likely to be face-to-face, but they may also via email, social media, telephone, text or other method. I am mainly interested in people who have some connection to each other already (friends, family and colleagues), and how they may influence or fail to influence those around them. Obviously it will be difficult to separate out or disentangle such encounters clearly from other types of encounter and other information channels which people are exposed to on a daily basis. Much has been written about the high levels of information, especially computerised information, which people in modern, Western societies are exposed to, sometimes without specific interest or consent (Bauman, 2000). However, word-of-mouth recommendation is still considered the most effective form of marketing by many (Hill, O'Sullivan and O'Sullivan, 2003).

Research from a number of fields is useful to draw upon in consideration of the ways individuals respond to social influences in changing their behaviour. White *et al.* (2009), in their study of social influence in the area of household recycling claimed that 'future interventions should attempt to address perceptions about

the ease and self-efficacy of recycling'. This study found that the 'visibility' of

the behaviour which was being encouraged was important, so that people 'can

accurately perceive the number of people engaged in the target behaviour'.

This type of social norm may also be important in encouraging cycling amongst

women – if women do not see other women cycling they may not be able to

sufficiently 'identify' with it as something they can see themselves doing.

Within the health field many recent programmes have used either social

marketing techniques or social behaviour theories to try and achieve

behavioural change on issues such as smoking, drug and alcohol abuse, diet,

exercise and healthy lifestyle. Some of these programmes have explored how

social pressures via peer groups are particularly influential in encouraging or

discouraging certain behaviours, and this was an important aspect to probe

during my research. I wished to assess which particular groups seem most

influential (colleagues, friends/peers or family) and whether there are gender

differences in these patterns.

Gatersleben found that affective factors relating to car use were gender

differentiated, and the emotional components of cycle usage may well be

gender specific also (Gatersleben and Appleton, 2007). Of course there are

many other social actors who influence people's decision making such as media

personalities, religious leaders, community leaders and politicians and those

who are fellow member of social interest groups. These all have differing levels

of influence with individuals, but for this research I am primarily interested in friends, family and colleagues (see Section 1.4 for an explanation of the focus on this group). The degree of influence of other sources is outside the scope of this thesis.

I will detail in Chapter Seven, my social influence results chapter, the questions I used to ascertain people's perceptions of bi-directional social influence; both their own influence on others and how they themselves had been influenced by others. The research design, with its combination of semi-structured interviews and SRFGs, enables some degree of seeing all sides of the social influence picture for the participants involved. This is described in Chapter Five, my methodology chapter.

4.6 Chapter Summary

In this chapter I have reviewed a range of sources on the subject of social influence as they pertain to this thesis topic. The dominance of rational choice within many sectors of transport research, and the ontology behind such theory was reviewed. A critique of this approach included material from; the 'affective turn' advocating the recognition of the emotions in social life, the importance of external social pressure (norms) as well as internal decision-making, the impact of habits which may block behaviour change, and feminist viewpoints on rational choice. Social networks and their importance to human flourishing was

outlined, together with an overview of the types and mechanisms of social

influence. This material influenced the way in which I approached my

methodology, in particular the research design and the use of SRFG's to try and

capture some of the ways in which social influence operates.

Chapter 5: Methdology

5.1 Introduction to the methodology

In this chapter I will outline how the research was designed, and how and why I chose the particular methods which were employed. Firstly, the aims, objectives and research questions which underpin and drive the research are outlined as a reminder. A change in methods was made between the initial research outline and the later stages of planning the research and these changes will then be outlined and justified, as part of my methodological journey. My intention is to describe how the location for the initial research was selected, and describe the process of the Phase 1 Pilot Study, undertaken in Bristol between April and September 2010. The learning from this initial research, refinements to the methods, and how this relates to my data analysis will also be explained.

Figure 5: The data production phases and stages of the research.

Phase 1: Pilot Study	Phase 2: Main Data Production
Location: Bristol	Location: Cardiff / Penarth
April - Sept 2010	Oct 2010 - March 2011
Stage 1: 8 interviews	Stage 1: 34 interviews
Stage 2: 2 SRFGs	Stage 2: 5 SRFGs
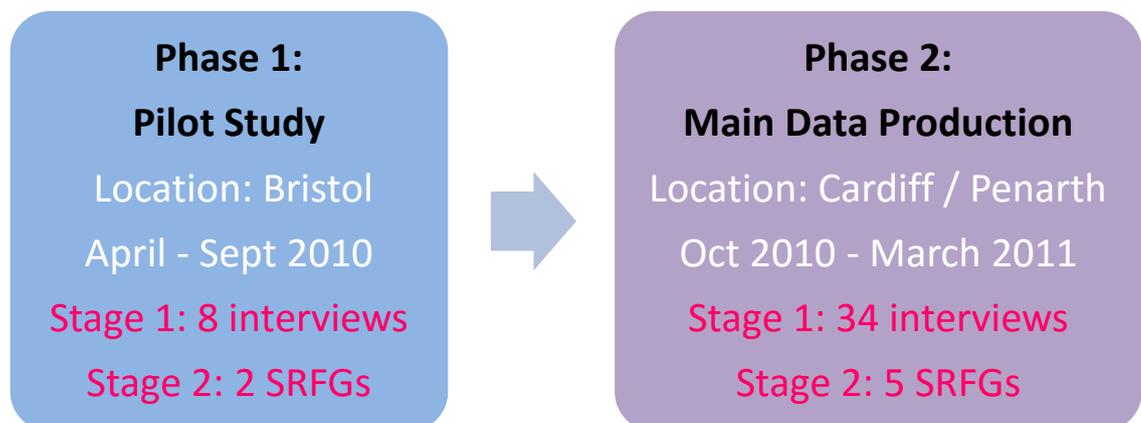
In Section 5.5 I will discuss the context of the Phase 2 Main Data Production in Cardiff and Penarth from October 2010 until March 2011. Ethical issues pertinent to the study will be described in Section 5.6, as well as the steps taken to lessen their impact. The ways in which the data were prepared for analysis are described in Section 5.7. Following this chapter, the analysis, results and discussion of the data production themes will be laid out in Chapters Six, Seven and Eight. In Chapter Eight, the issues which arose during the data production will be discussed, together with the strengths and weaknesses of the methodological approach and suggestions for its future use.

5.2 Research Aims, Objectives and Research Questions

As detailed in Section 1.4, the main focus and interest in this study is in the way in which gender impacts on people's willingness to cycle and whether (and how) those who do take up cycling may socially influence others. The aims, objectives and research questions are repeated here:

5.2.1 *Aims:*

1)   To examine the gender differences present in cycling in the UK and explore the most important reasons for the lack of participation in cycling by women.

2)   To understand the relationships between culture, environment, infrastructure and gender in cycling behaviour.

3)   To discover how social influence operates in persuading more people (and especially more women) to cycle.

I sought to address these issues through a combination of both literature review and primary fieldwork.

5.2.2 Research Objectives:

1)   **Understanding the study context**: to explore the existing evidence base relating to gender and cycling and determine the underlying structures which operate to influence the current disparity between the levels of cycling undertaken by men and women in the UK.

2)   **Exploring practical and cultural factors**: to better understand the ways in which those who cycle are influenced by instrumental and affective dimensions for both genders, but particularly women.

3)   **Assessing behavioural change**: to determine how cyclists may or may not socially influence their friends, family and colleagues and in turn be influenced by them.

4)   **Using the evidence**: to disseminate insights from the study in order to influence future cycling policy to better reflect the concerns of both women and men.

5.2.3 Research Questions:

The research was conducted in two phases, each consisting of two stages;

Phase 1: A pilot study based in Bristol which trialled the use of the in-depth interviews (Stage 1) and linked SRFGs (Stage 2).

Phase 2: The main data production phase, conducted in Cardiff which built upon the methods refined in the pilot study, and which also involved in-depth interviews (Stage 1) and SRFGs (Stage 2).

The research phases and stages are discussed in detail in Section 5.4, but I have also identified them briefly here to give context to the final research questions.

Research Questions

1. In what ways do men and women perceive barriers to and enablers for using cycling as a mode of transport for utilitarian, commuting and leisure needs?

2. What role does social influence play in encouraging people to cycle?

3. How is gender difference apparent in the ways in which social influence operates on peoples' participation in cycling?

4. Do SRFGs provide a consistent and dependable method of examining social influence in relation to men's and women's participation in cycling for transport and leisure purposes?

5. How can the enabling cultural and instrumental factors which encourage women's participation in cycling best be facilitated?

5.3 Research design and strategy

5.3.1 Evolution of research philosophy and design

The original intention with regard to researching this topic of gender and social influence in cycling was to proceed with a mixed methods design involving a quantitative survey followed by qualitative in-depth interviews to explore particular issues raised by the survey in more detail. However, as the research process progressed several factors led to a change in my research philosophy and design, which are detailed in Section 5.3.1. Much research on cycling, and into the reasons why people do and do not cycle, as recounted in Chapters Two – Four, has focussed on instrumental and monetary factors, such as the relative costs of different modes, weather, time and facilities. This in part is related to the quantitative approach and the inability to ask further/open questions easily or straightforwardly within a survey instrument, but is also related to wider ontologies and epistemologies lying behind research designs.

In transport research then, the affective, more complex and emotional components of people's travel choices have often been less studied than the more practical and economic aspects which are frequently assumed to dominate. Mimi Sheller, in her paper Automotive Emotions, suggests the 'need to move away from statistical quantification of individual preferences towards more qualitative research methodologies' (Sheller, 2004, p.222). As the key areas which are being investigated here are '*how and in what ways do gender and social influence impact*

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upon the practice of cycling' I believed a flexible research design and a qualitative approach were the most appropriate for eliciting rich and complex descriptions regarding these social factors. As described earlier I have a dual status within the research context as both an insider (a woman who cycles and who has experiences of both gender differences and social network influence) and an outsider (a researcher interested in eliciting people's view on cycling). Therefore, to borrow terms from the field of anthropology, it suited my purpose to adopt both an emic (insider) and etic (outsider) perspective (Hoare, Mills and Francis, 2012) on the culture under study; cycling culture. I am also approaching the research from an interdisciplinary perspective; with inputs from both health and transport research within a sociological framework.

Mason, whilst noting the different traditions and uses of qualitative research, argues that there are three common features of such research; they are grounded in a broadly interpretivist philosophical position, based on flexible (expanded upon in Section 5.3.3) data generation systems which are alert to contexts, and analysed in ways which 'involve understandings of complexity, detail and context' (Mason, 1996, p.4). I would argue that for an understanding of the topic as outlined, such an approach is not only desirable, but necessary in order to understand peoples' cycling experiences in the fullest way possible. My overall theoretical influence is from critical realism (see Section 5.3.3 for an explanation) which seeks to describe the socially constructed practices which are important to interpretivists, but to do so in a way which also recognises the wider societal frameworks and external reality

within which such practices are believed to occur (Snape and Spencer, 2003).
Therefore I endeavoured to understand and explore both agency (individual's choices) and structure (the social frameworks and context in which those choices are made) during the research. I will now detail how I utilised a flexible research design for this doctoral research and later in this chapter (Section 5.7) I will outline how the analysis was approached.

5.3.2 *The methodological background and journey*

My original ideas about how to proceed with the data production were outlined in the form of an initial research design. At this early stage I envisaged and presented a plan to complete a large-scale quantitative survey of cyclists to discover their attitudes regarding their cycling practice, gender aspects which may be related to cycling and to ascertain social influences. However, as the research progressed, I decided to make significant revisions to the research design and adopt a qualitative approach.

The reasons for these changes were related both to my personal interests and capabilities, my views about the research and also to significant developments in UK cycling research. My previous research experience has involved using largely qualitative research approaches and methods – chiefly interviews and focus groups. When starting this research project I was attracted by the idea of using a mixed methods strategy, enabling me to both build on my previous qualitative research and to improve my skills in using quantitative methods.

For this reason I initially proposed devising a survey and then using interviews to investigate issues which were not addressed in sufficient depth or explained by the primary quantitative method. I also participated, via teleconferences, in the group process which was working on devising the iConnect (an EPSRC funded walking and cycling evaluation research project, see glossary, p.XIV) survey instrument. This included assisting in piloting the survey instrument with family members and friends. Being involved in the design stage of the research was an extremely valuable process which taught me a lot about the complexities of designing such a survey instrument, and which helped clarify the need for my research to concentrate on other, complementary topic areas.

It transpired, however, that the geographical area in which I had chosen to undertake my field work was also chosen by the wider iConnect Consortium as one of its five case studies. I also found out that the Cycling Cities and Towns research was going to be using a large scale survey. Due to these factors, I considered that I was in danger of producing quantitative work which would be inferior to other more sophisticated and well-funded initiatives and which in this context was unlikely to be considered 'novel'.

In light of these concerns I decided to devise an inductive, qualitative research design, which would both enable the research questions to be answered, and reflect my personal strengths. This research design has a primary focus on qualitative methods, with a critical realist theoretical perspective. As already detailed, I believe these

methods are best suited to investigate the underlying reasons for gender differences in cycling, due to the focus on individuals' experiences of cycling, and the ability to be flexible with questioning. However, the contribution of quantitative research in this area should not be underestimated. Much of this research is discussed throughout this thesis, including the work of the iConnect consortium which has been previously mentioned. It was not possible to reinforce my qualitative work with the quantitative research previously mentioned, however, due to both the simultaneous timescales of the research, the different research questions which were being answered, and the differing approaches taken.

5.3.3 *Rationale for the use of a flexible research design*

The rationale and assumptions underpinning the adoption of a flexible design such as this are described below. These factors are derived from a critical realist perspective which rejects the extremes of both positivism (a scientific philosophy which primarily values information gained from direct sensory experience) and relativism (a philosophy stating that all judgement criteria are different, depending on the individual and their cultural context) and instead seeks to recognise that whilst there is an external reality which exists independent of our awareness of it, that reality is only knowable through socially-constructed meanings (Snape and Spencer, 2003). Throughout this study then, I sought to both explore and describe the social construction of cycling and the meanings which those involved ascribe to it. However, I am also concerned with highlighting the underlying mechanisms which make some of those social constructions more likely and tenable.

From a critical realist view 'all methods of study produce approximations of reality and incomplete understandings of phenomena of interest as they exist in the real world, the findings of flexible method research can be seen as no more or less legitimate than those of any other type of study' (Anastas and MacDonald, 1994, cited in Robson, 2002, p.167). Researchers within the critical realism tradition seek to not only collect observations of the social world but also to 'explain these within theoretical frameworks which examine the underlying mechanisms which inform people's actions and prevent their choices from reaching fruition' (May, 2001, p.12).

I would argue that a flexible design which is able to be revised throughout the research process and which seeks to continually improve upon the understanding gained about the topic of gender and cycling through the participant's perspectives is appropriate and suitable given the research aims, objectives and questions (Section 5.2). This approach also allowed me to acknowledge my own values and employ reflexivity, rather than seeking to adopt an objective and 'value-free' stance. In my case, my positions as both a regular cyclist and a woman will have an impact upon how I am viewing and conducting the research, and this is something which I have sought to acknowledge and describe throughout the research process. Such 'critical self-scrutiny' or reflexivity is aimed at arriving at as full a knowledge of my own research role as possible (Mason, 1996).

The research questions, as detailed earlier in Section 5.3.1, were approached and devised using a flexible research design which involved in-depth, semi-structured interviews with the initial research participants and SRFGs with members of their social network (friends, family and colleagues). Robson defines flexible designs as incorporating a number of key factors, such as: an evolving design, the presentation of multiple realities and a focus on participants' views (Robson, 2002). Lewis argues that 'design in qualitative research is not therefore a discrete stage which is concluded early in the life of the study: it is a continuing process which calls for constant review of decisions and approaches' (Lewis, 2003, p.47). The constant consideration of how the research is progressing and making amendments allows for the qualitative researcher to adapt the focus and process of the research. This enables the researcher to explore new lines of enquiry as they develop and potentially gain a fuller understanding of the research topic. A flexible research design, therefore, seemed to best suit the focus of this study and give the greatest chance of effectively answering my aims, objectives and research questions.

This research study is exploratory in nature due to the gaps in the research literature around cycling, gender and social influence which were identified and described in Chapters Two – Four. My research questions, aims and objectives were refined and improved during the Phase 1 Pilot Study in Spring/Summer 2010, as part of an on-going inductive approach to this research. Mason describes how a pilot study can be used to 'try out sampling strategies, data generation and analytical techniques and to firm up on your intellectual puzzle and your research questions' (Mason, 1996, p.98). My

initial study, which was an extensive and sophisticated version of piloting, has been an integral part of refining the focus of the research, as Kim also describes in her depiction of piloting within a specific cultural context (Kim, 2011).

5.3.4 Justification of data production methods

The type of data which this research required would have been difficult to collect via a quantitative approach, as much of it was exploratory in nature, and concerned with how participants perceive and define their own transport behaviours. Most of the research literature which was reviewed in the earlier chapters on gender and cycling is mainly based on quantitative analysis, rather than qualitative. Whilst there are some studies which have measured social influence (i.e. by quantifying the 'subjective norm' factor in the Theory of Planned Behaviour), they do not explain how those social norms influence behaviour, or how they operate in a gendered context. This qualitative study aims to go some way towards filling those knowledge gaps.

As Robson states; 'surveys are not well suited to carrying out exploratory work' (Robson, 2002, p.232), partly due to the difficulties of dealing with non-standardised questions, and also due to needing to know exactly what information you wish to collect at the outset. I therefore focussed my efforts on selecting the qualitative method which would be the most appropriate for collecting the type of data which would answer my research questions as fully as possible. The two stage research

methodology involved firstly individual interviews, followed by SRFGs with people

known to the original interviewee. I use the terminology data 'production' rather

than data collection throughout this thesis in recognition that rather than collecting

'facts': 'information gathered by the researcher is produced in a social process of

giving meaning to the social world' (Ramazanoglu and Holland, 2002, p.154).

Denzin states that; 'For a full century the interview has been the basic information

tool of the social sciences' (Denzin, 2001, p.23). He even states that due to the

ubiquity of the interview, we have become an 'interview society' (ibid., p.23). The

advantages of the interview are its flexibility, adaptiveness and 'potential of

providing rich and highly illuminating material' (Robson, 2002, p.273). After a

careful consideration of all possible qualitative (ethnography, textual data such as

diaries, tasks, qualitative surveys, visual or audio data) methods, in-depth interviews

were selected as the most suitable for gaining an understanding of participants'

complicated internal realities around a topic, alongside SRFGs.

Lewis states that interviews are the 'only way to collect data … where delicate or

complex issues need to be explored at a detailed level, or where it is important to

relate different issues to individual personal circumstances' (Lewis, 2003, p.58). For

these reasons I selected semi-structured, reflexive, in-depth interviews as the initial

method (Stage 1) used in both of the research phases. Following Denzin, I am

mindful that 'we write culture, and that writing is not an innocent practice' (Denzin,

2001, p.24). I strived throughout the data production, analysis and presentation to

be reflexive in my approach to how my participants are viewed and to remain aware that; 'doing interviews is a privilege granted to us, not a right that we have' (ibid., p.24).

For Stage 2 of data production in both locations, which was primarily concerned with the social networks of the initial interviewees, a different approach was called for. The most important advantage of focus groups is that they allow groups of people to dissect a product of culture and lifestyles which affects everyone. The forces for behaviour change often lie in group cultural shifts rather than individual processes, as Tonkiss argues. She states that focus groups; 'capture the inherently interactive and communicative nature of social action and social meanings, in ways that are inaccessible to research methods that take the individual as their basic unit of analysis' (Tonkiss, 2004, p.248).

5.3.5 Methodological skills

I have had some experience of conducting qualitative research (interviews and focus groups) from work completed for both my undergraduate degree and first Master's degree. I also believe I possess many of the qualities which are useful when choosing qualitative methods, namely; an enquiring mind, being adaptive and flexible, social awareness and the ability to listen actively and carefully to participants (Robson, 2002). To assist me in developing my skills further in this area I chose to study a number of relevant modules in research methods, as part of a Masters in Applied

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Social Research, which I studied for alongside my PhD. The skills and knowledge gained from these courses have certainly assisted me with this project by giving me a greater understanding of both the research processes involved, and also the wider philosophical underpinnings which affect my role as the researcher. The successful interviewer needs to embody a number of qualities; active listening, being logical, having a good memory, curiosity, ability to develop a good rapport with the interviewee, empathy, confidence in their role and a sense of 'tranquillity' (Legard, Keegan and Ward, 2003, p.143). Developing all of these skills requires practice and reflection and cannot be quickly acquired, so as part of the reflexive practice employed in this research, I have highlighted examples where I felt I could improve upon my interviewing techniques in future research work. (see Appendix 2 for an example entry from my reflexive field journal).

5.3.6 Novel nature of methodology

Following the cross-disciplinary literature review detailed in Chapters Two, Three and Four it was concluded that the methodology for this doctoral research has a number of novel aspects. For this reason, I shall be highlighting this aspect both within this section and within the analysis and discussion chapters. It is of key importance for this particular thesis how the process of developing the methodology was managed. Clearly there is nothing new about the use of interviews or focus groups within either a fixed or flexible research design; however, there is something new about their usage in both a *sequential* and *interconnected* way within the transport and health fields (to the best of my

knowledge). So, whilst the use of interviews and focus groups together in the same study is not uncommon, the fact that they are linked, with the SRFG participants being part of the social network of the original interviewee is, I believe, unique. Their use is primarily for the purpose of seeking to highlight and explain how social influence appears to be operating within the context of individual's cycling behaviour. This is an aspect of their day to day living and lifestyle choice in which participants may or may not influence others towards being more disposed to view cycling favourably and to cycle themselves.

A technique which has been frequently practiced within the social sciences is the use of snowballing in interviews (Ritchie, Lewis and Elam, 2003; Moule and Hek, 2011; Robson, 2002). Snowballing or chain sampling is a sampling strategy which involves asking a research participant who has already been interviewed to identify others who fit the sampling criteria (Ritchie, Lewis and Elam, 2003). The new participant is again in their turn asked to nominate a further contact. But in classic snowball sampling each participant is then interviewed or surveyed individually, not in a group.

Another related practice which is commonly used within Social Network Analysis (SNA) (the study of social relationships among a set of actors) is name generation, which involves asking participants for lists of their contacts together with other information such as the degree of physical or emotional closeness felt to each of the contacts (Ryan, Mulholland and Agoston, 2014). The list of names is then

usually used not for finding new participants to interview, but in order to 'map' the

social ties of the research participant and the social contacts they have named.

Both of these research practices have some similarities to the research design which

I have employed. However, using SRFGs, in which the participants are recruited by

the initial participants in Stage 1 of the research, involves rather different social

dynamics than either of the other two techniques. This is because it involves a

group rather than an individual interview. The research design chosen here, was

judged to be a more effective technique for answering my research questions in the

most comprehensive way possible than the aforementioned methodologies. This

particular design was focussed on capturing both inward (influence which a

participant described another person had had on them) and outward (influence

towards others which a participant felt they had had) social influence among both

initial interviewees and also among members of their social circle, which the other

methods mentioned above would not have been able to do as systematically.

5.3.7 *Reflexivity relating to methodology*

As previously mentioned, throughout the course of my research and during the data

production and analysis I have taken a reflexive approach, which involves examining

how I have undertaken the research and being aware of ways in which my thinking

has impacted on the research process. Finlay proposes five 'maps' to negotiate

differing types of reflexivity, involving different foci on the relationships between

the researcher and the researched (Finlay, 2002). Her second category;

characterisation of reflexivity as intersubjective reflection, focussing on 'the

situated and negotiated nature of the research encounter' is the closest description

to how I have approached reflexivity here (ibid., p.212). During the data production

phase I kept a reflexive diary which I used to note impressions about each interview

or SRFG, the participant(s), any issues which might need future actions and my

thoughts on new themes and ideas from the data. An example is shown in

Appendix 1. Legard *et al.* discuss the extent to which feminist research and

interviewing: 'attempts to be more reflexive and interactive, aiming to take a non-

hierarchical approach which avoids objectifying the participant. Reciprocity is

emphasised' (2003, p.140). I have endeavoured to be influenced by such an

approach within this research and to be aware of my practices, impressions and

ideas throughout the enquiry. This will be highlighted within the text whenever it is

particularly relevant. All references to participant's names throughout the thesis

are pseudonyms; more detail on this topic is provided in Section 5.6 about ethical

considerations.

5.4 Phase 1: Pilot study, Bristol – research process

In this section I will detail how the data production was planned and how the

different phases of the research relate to my research questions. Following this I

describe in Section 5.4.3. the context and background to Phase 1: the pilot study,

conducted in Bristol.

The pilot study phase of the research took place from April – September 2010 and had two stages; Stage 1 – initial interviewees and Stage 2 – SRFGs. Whilst I have described these as two distinct stages, in practice they were concurrent to a certain extent, since I would be arranging new initial interviews at the same time as organising a SRFG. The pilot study was planned to assess the feasibility of the innovative methodology which has been devised for this study, since there were a number of challenges anticipated to this method in practice. Kim (2011) also argues that conducting a pilot study with clear aims and objectives can add to the rigor and trustworthiness of qualitative research.

My first concern in Stage 1 of the process was in gaining access to a wide array of different cyclists to be initial interviewees, since regular cyclists are rare compared to users of other forms of transport and certain groups tend to be underrepresented. I was also keen to interview a range of participants in terms of their personal involvement in cycling culture; from those with no interest or emotional investment in cycling issues to those who might define themselves as cycling activists. I also had concerns as to whether people would be willing to be interviewed on a topic which was both everyday yet in some senses socially marginalised.

In Stage 2 different concerns came to the fore. The initial interviewees, whilst perfectly willing to be interviewed themselves, sometimes may have felt uncomfortable about giving me contact details about people they know. Also, since the participants in the SRFGs were discussing the cycling behaviour of the initial

interviewee, I think they may also have felt that they were going to be 'judged' by their peer or family group, again something which they might not be at ease with. This may have presented ethical challenges; for example the perspectives of the peer or family group of the initial interviewee may have been negative, or been made more so through the group process. Some ground rules for the discussions in the SRFGs were developed which involved emphasising the confidential nature of the group discussions, and being mindful as the convenor to intervene if the nature of the conversation seemed to warrant it (see Section 5.6.3 Participant Safety for more detail on my approach to this as part of my ethical framework).

Aside from these psycho-social difficulties, practical difficulties were also envisaged. Spatial patterns are considerably different in current society than they were a few decades ago when family and friend groups were more distinctly spatially located. Today, family members may live on opposite sides of the world and communications with friends and family may be via electronic communications rather than in face-to-face meetings. These trends have led some researchers to describe modern Western society as being hyper-mobile, or in a state of constant flux, movement and change (Damette, 1980, p.86). Geospatial differences such as these were thought to present some degree of challenge to the research as it was conceived. These issues related to whether it would be feasible to conduct SRFGs if peoples' social network was widely geographically dispersed; especially for groups composed of family members.

These are, however, general trends rather than absolutes. Within my study area I envisaged that there were still likely to be strong spatial communities, which also remain alongside the more mobile ones. The Phase 1 Pilot Study was designed to assess how feasible gaining access to participants for the SRFGs would be in practice. I chose Bristol as the location for the pilot study for reasons involving the target sample, practicality and convenience (described in more detail in Section 5.4.3). I also investigated the possibility of using visual and/or audio-visual materials within my interviews and SRFGs, both for the purpose of making the research potentially more engaging for participants, but also to generate a wider range of discussion points (for a more thorough explanation of the visual methods employed please see Section 7.4).

5.4.1 Phase 1, Stage 1: In-depth interviews

This stage of the pilot study involved conducting semi-structured interviews with participants using a topic guide. This method was chosen both for the ability to retain some comparability between interviews but also to give participants greater freedom to express themselves than is possible within the confines of a structured interview (May, 2001, p.123). The participants in this phase of the research were initial interviewees, comprising adult male and female members of the local Bristol community who participate in a form of regular cycling, usually though not exclusively, cycling for transport and/or leisure.

5.4.2 Phase 1, Stage 2: Social reference focus groups

The second part of the pilot study involved conducting SRFGs with the social networks of people involved in Stage 1, the initial interviewees. A selected number of initial interviewees who seemed particularly interested in the research project were invited to take part in Stage 2. Since this was a novel methodology, I did not have a precedent for numbers of initial participants who might have been willing to engage with this stage of the research, and I envisaged that this might be a key barrier in recruiting the people willing to provide contact details of their friends, family or work colleagues. Figure 6 below shows diagrammatically how this stage of the research operated.

Figure 6: A visual depiction of Stages 1 and 2 of the research process.
(with specific Phase 2 Cardiff participant examples)

Stage One: Individual Interviews   **Stage Two: SRFGs**

Participant 1: Adam Jessop

No Stage Two

Participant 2: Jenny Durrant

SRFG 1: Deana Gould

SRFG 1: Mary Foster

SRFG 1

SRFG 1: Carmel Dreyfus

SRFG 1: Joss Sully

SRFG 1: Megan Darnton
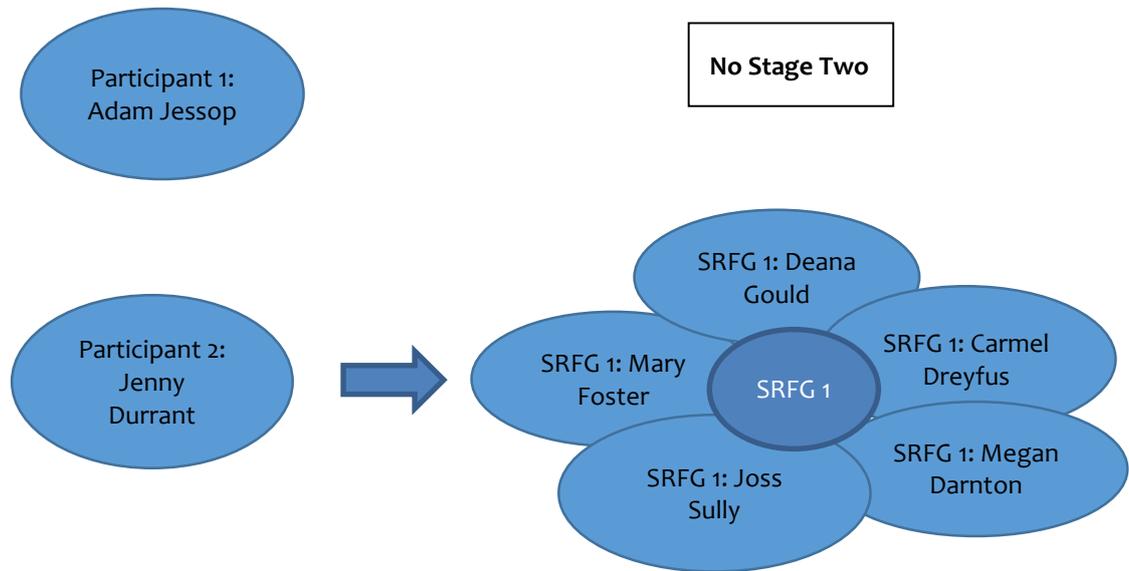
Resource constraints upon this research meant that only a modest amount of funding

was available to me via the iConnect Consortium. Therefore, participants were given

a voucher for a high street shop as a small amount of recompense for their time.

Originally I considered that participants would be asked if they were willing to provide

a list of contact details (email addresses and/or telephone numbers) of people they

know; either work colleagues, friends and peers, or family members, or potentially a

mixture of all three, but subsequently decided to encourage them to pass on

information to their contacts. Whilst all three groups may influence (or not) an

individual in different ways and at different times; the three groups were chosen to

give as wide as possible a pool of people for a participant to choose from.

I tested the feasibility of this in Bristol at the pilot study stage, since pragmatically I

may have needed to have groups which included all of these types of social contact.

The purpose of these SRFGs was to investigate participants' thoughts and feelings

about the person they know who is cycling (the initial interviewee) and to examine

inward and outward social influence. If gaining access to a number of the initial

interviewee's contacts at the same time proved too challenging, I had planned to

interview them individually. The initial interviewee would not be present at these

sessions, since they were being directly discussed at points during the SRFG.

Therefore, I felt that this could make both them and their contacts uncomfortable

and would be inappropriate.

This seemed a significant amount to expect of research participants, not only that

they were prepared to give up an hour or more of their own time to take part in the

study, but that they are were also prepared to give me contact details of a wide range

of people that they know. As Oakley (1981) notes, researchers need to be aware and

mindful of the demands they place upon research participants who may not gain any

benefit (apart from the small sum mentioned above) from the research process.

Therefore, it was anticipated that the people who would be approached to provide

contacts (on their own time-frame, so that gaining permission was possible) for Stage

2 of the research would be those who are most interested and engaged with the

project. The potential participants offered by the initial interviewees were then

contacted and invited to take part in a social reference focus group, to discuss the

initial interviewee's cycling behaviour in depth and establish whether this has had any

influence on their own travel behaviour patterns. Clearly since the SRFG participants were chosen by the initial interviewee, there is potential bias as people could be chosen to portray the initial interviewee in a favourable light. Also, the people chosen may perceive the social influence to be (or not be) significant, but this may not reflect the views of the initial interviewee's wider social network.

If I had been planning to undertake research based on focus groups alone, I would have anticipated selecting 6 - 8 participants for each group, since this number is usually considered optimal in focus group research (Krueger and Casey, 2000). However, as my participants would have comprised a social reference focus group who relate to the initial interviewee, rather than a true focus group, these conventions and parameters do not necessarily apply. A different number may be ideal in a differently composed group – a fact that would only become apparent whilst the data production process was underway.

Pragmatically I also predicted that I may have difficulties in gaining participants through this untried type of methodology; therefore I may have simply needed to accept the number of focus group participants who are offered to me by the original interviewee. So the ideal scenario may have needed to be tempered by real world constraints.

One key factor I wished to investigate at this point was the idea of a behaviour (in this case cycling) entering into a person's consciousness due to a friend/colleague/family member participating in it. The Women's Design Service, in their 'Cycling for Women' project with 10 London-based women, found that women involved in the project spontaneously mentioned how they felt they had impacted on other people they knew. One participant stated: 'All my friends have reacted to it and are now interested in cycling' (Stredwick, 2004, p.9). I was interested to see whether participants would have similar stories or whether they saw cycling as part of a more individual set of behaviours.

5.4.3 Justification of Bristol as a choice

The pilot study was designed with two main purposes in mind; 1) the collection of useful initial data which could be analysed as a 'blueprint' for the later data production phase, and 2) to refine and improve the ways in which such an unusual methodology may work. As mentioned in Section 1.5.2., the choice of where to situate the initial pilot fieldwork was based on reasons of both comparison, and of pragmatism, such as time and cost. Since I live in Bristol and am familiar with both the city and its cycling culture, it was useful to be able to undertake the initial pilot study in a known setting. This assisted me in terms of knowing where and how to recruit participants. It also meant that I was aware of the contextual background to cycling in the city and some of the likely organisations, places and people which participants would mention. I was also aware that the differences between the cycling experience in Cardiff and Bristol, although discernible in many ways which

are described in Sections 5.4.4 and 5.5.4, were not vast. The cities also have some

comparable geographic and demographic features, which are described in more

detail in the sections noted above. The decision was also a pragmatic one involving

consideration of researcher travelling time and expenses for interviews and focus

groups. The contextual characteristics of Bristol city and transportation and other

relevant factors are described below.

5.4.4 Bristol; the city and its cycling culture

In this section I give a brief introduction to the city, its location, demographics and

transport context. I then describe Bristol's cycling infrastructure and culture.

Map 2: Map of Bristol City Centre

© OpenStreetMap contributors CC-BY-SA 2.0

Image 4: Photograph of Bristol Harbourside

©Anja Dalton

The city has a relatively affluent population and has one of the highest levels of car ownership in the country (Bristol City Council, 2015b). It is also home to Sustrans, the charity set up in 1977 to promote sustainable transport, who encourage people to walk, cycle and use public transport. They constructed the National Cycle Network, a 14,000 mile long, UK-wide network of cycling and walking routes (Sustrans, 2014a). Their first flagship traffic-free route, built in 1979, was the Bristol and Bath Railway Path (B&BRP). This route is highly popular for both leisure (along its entire 16m length) and commuting (concentrated in the last few miles at either end, near to Bristol and Bath) and carries an estimated 2 million trips per year (Sustrans, 2014a). Cycling levels in Bristol are higher than the national average, at around 4% of all commuting trips in 2008 (7.5% in 2011) (Bristol City Council, 2014).

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Bristol is also in the top 20 of local authorities for people cycling 3 times a week for any purpose, with 9% of the population doing this (Department for Transport, 2014). However, cycling is much more well-established in Cambridge (33%), Oxford (22%), and York (16%) (ibid.). Comparisons are difficult and imprecise as there are no nationally recognised standard ways of capturing cycling levels and they are not routinely monitored on their own merit, but rather as part of motor vehicle traffic counts, as discussed in Section 2.5.

Due to Bristol's emergent cycling culture, and potential to increase cycling levels, the two local authorities of Bristol and South Gloucestershire were awarded the UK's first Cycling City status, as previously mentioned. This involved three years of funding totalling £11.4 million, an amount which was equalled by the local authority (match funded), giving a total of £22.8 million. Bristol Cycling City invested the funding on four areas which it termed 'engineering' (building new and improving existing cycling infrastructure), 'education' (working with schools, employers and communities to encourage new cyclists), 'encouragement' (supporting projects to keep people cycling) and 'enforcement' (tackling anti-social cycling) (Bristol City Council, 2011a). The Cycling City project finished at the end of March 2011, so the project was still in progress during my data production period. Whilst I did not select Bristol because of its Cycling City status, it was mentioned by several of my interviewees and had clearly impacted on the profile of cycling within the city, and may have had some effect on my data production, in terms of cycling being more prominent in the city at the time. It is possible that this made it easier and quicker

to recruit to the pilot study, although I was actually only seeking small numbers of participants for Phase 1 anyway.

As well as the Cycling City project and Sustrans, Bristol also hosts other cycling-related groups: Lifecycle UK, Bristol Cycling Campaign, Bristol Bike Forum, the Boneshaker magazine collective, and also many individuals, such as makers and users of unusual bikes, bike shop employees, circus and other creative performers, who were involved in Bristol's first Cycling Festival in 2010 (this has since continued annually every June/July). The culture of cycling in Bristol is also influenced by the high number of students (8.3% of the population) (Bristol City Council, 2011b) and the many younger people who are taking to cycling and other forms of sustainable travel (Bristol City Council, 2014). There is also a significant amount of interest in mountain biking in the area, with an active voluntary group (Bristol Trails http://bristoltrailsgroup.com/) and a major facility for mountain biking at Ashton Court, to the west of the city, which attracts people from considerable distances. Bristol has its own bike café, Roll for the Soul (http://www.rollforthesoul.org/), The Bike Project bike repair hub, (http://www.thebristolbikeproject.org/), and even the Two Wheeled Drive-In, an occasional outdoor cinema which you cycle to and from (http://twowheeleddrivein.blogspot.co.uk/).

In addition to the cycling-specific projects and organisations discussed above, a number of wider initiatives also had a bearing on how easy it was to walk and cycle in the city. Bristol had two pilot 20mph areas in Easton and Southville (from May

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2010) and has subsequently expanded this to cover the entire city centre area (with some roads being excepted) (Bristol City Council, 2015a). These 20mph limit areas are currently being promoted as a way to make cycling and walking an easier, more convenient and safer option within UK towns and cities, following in the footsteps of 30kph zones in a number of European towns and cities (20's plenty for us, 2015). Such slower speeds are thought to encourage greater levels of walking and cycling as there are likely to be fewer collisions, the impact of those collisions which do occur is lessened and also the perceptual danger from motor traffic can be reduced. Public health bodies are also involved in the sustainable transport agenda within the city and have supported the 20mph pilots, most recently through funding the promotional leaflets explaining the schemes to Bristol residents. Such linking between the transport and health fields is still rare in the UK, though there are initiatives which have tried to foster better linkages between planning (including transport planning) and health (Bird and Grant, 2011).

However, despite an undoubted wealth of organisations working towards making Bristol a more cycling-friendly area, overall levels of cycling are not high compared to other UK cycling hotspots, or indeed to other cities in other countries such as Germany, Holland or Denmark. There are also significant barriers to enabling greater levels of cycling in the city such as an adversarial driver-cyclist culture, local media which often espouses negative views of cycling and cyclists (Bristol Evening Post, 2014), and a lack of consistent and safe cycling infrastructure throughout the city (cycle routes tend to be patchy and inconsistent with good provision in some

areas ((Easton, Southville, Bishopston, Montpelier)) and poor or even non-existent in others (Clifton, Knowle, Southmead)) (Bristol Cycling Campaign, 2015).

Due to the high levels of car ownership in the city there are also consistent problems not only with high levels of congestion, but also with parking which can infringe on pedestrians, and people who have mobility problems. It also makes conditions more dangerous for cyclists as they are required to cycle further out into the road to avoid parked cars and their doors. For the majority of its inhabitants then, Bristol would seem to fall into the category of a 'city which is *becoming* (or has the potential to become) a safe and attractive place to cycle' in, rather than one which is already a good place to cycle in. Such a categorisation can also be applied to Cardiff, as described in Section 5.5.4, making them both useful places to study in terms of their relatively early stage of attempting to become cycling-friendly places. I was interested to see how cyclists in such areas would experience cycling on an everyday basis and to gain an insight into the differences which men and women experience when cycling, as related to my research questions.

5.4.5 Recruitment strategy and process

A variety of sampling strategies were considered and a purposive or criterion based sampling strategy was eventually decided upon. According to Ritchie et al.: 'The sample units are chosen because they have particular features or characteristics which will enable detailed exploration and understanding of the themes and

puzzles which the researcher wishes to study' (Ritchie, Lewis and Elam, 2003, p.78).

The group under investigation in this study, cyclists, are themselves 'rare' in the

overall transportation mix, with only 2% of UK trips being undertaken by bike and

nearly two-thirds of the UK population claiming that they very rarely or never cycle

(Department for Transport, 2014). As an added complication, women who regularly

use a bike, as was noted earlier, are available in even lower (and difficult to

ascertain) numbers.

Focussing on such a group means that they are by their very nature not

representative of the population at large and therefore wider statistical inferences

could not be drawn from this sample. Clearly then, other sampling strategies, such as

probability samples, for example random or cluster samples, with their focus on

generalisability (Robson, 2002) would have been neither achievable nor relevant to

this study design. Therefore, a variant of purposive sampling, homogeneous

sampling, was used to deliberately target regular male and female cyclists (Ritchie,

Lewis and Elam, 2003).

I studied recruitment options (see Table 2) and the best two avenues to explore

were felt to be the use of flyers in both bike shops and in the city centre. Several

criteria were considered in making this decision; time, cost, practicality, numbers

required, validity and replicability.

Table 3: Recruitment options considered for Bristol Phase 1, Stage 1

Recruitment via:	Positive factors	Negative factors
Bristol Cycling City – betterbybike website	Key resource, used by cyclists, get good numbers quickly	Bristol specific, though could have used Cardiff cycling org or similar. Too many 'keenies/activists'? Too many responses?
Bike shops	Used by wide variety of cyclists, may feel positive to research if like bike shop	May not pick up leaflets unless 'sold' by staff which they may be unwilling to do – need buy in/gatekeeper access.
Community Centres in high cycling areas – e.g. Easton	Different demographic from others, harder to reach groups? Already have venue to interview participants where they are likely to feel 'at home'	Same as above – buy in/gatekeeper access necessary? It may be hard to identify cyclists as available in low numbers.
Gender orientated groups e.g. baby and toddler stay and play sessions (often largely female)r	Access to hard to reach groups May be useful to get a range of responses from different women?	Men's and women's – time consuming to approach several groups (sports-orientated and so more likely male?) May not see relevance to them of the study/hard to get interest
Employers groups	May use similar strategy to that in Cardiff. If have employer buy-in/gatekeeper access then it will be easier to get participants.	Employees may tend to be a fairly homogenous group unless large employer. Gender mix? Will the employer require reciprocity?
Bike tagging at cycle parking (notices stapled to individual bikes)	Easy to target cyclists. Range of different cyclists if use parking across the city. May only need small numbers, use if other methods provide too few people.	Info may be not noticed, ignored, torn off etc. No guarantee of gender mix. Some people do not use public bike parking. Too many men?

Participants were recruited via bike shops and local employers, such as Bristol City

Council. An eye-catching leaflet with sparse text and a photo of both male and female

cyclists was designed to be as attractive as possible to potential participants

(Appendix 3). This was distributed to the outlets listed above. A wider range of

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recruitment avenues were explored as the study progressed to try and ensure as broad a sample as possible, and this will be covered in greater depth in the next section. The locations for interviews and SRFGs were designed around convenience and familiarity for the research participants and so were conducted wherever was most suitable for the interviewees concerned. Some interviews were conducted in people's homes, some in participants' workplaces and some in public locations such as cafes (please see Section 5.6.4 for a discussion of the ethical practices employed in this study related to interview and SRFG locations).

The range of locations used is likely to have caused some differences in the ways in which participants responded to, and interacted with me, and hence the type and quality of data collected. The majority of interviews were conducted either in the participant's home or in a quiet space at their workplace; both such locations were relatively private, though especially in the work setting it is possible that participants did not fully relax in the interview. Cafés, which were used in a small number of cases where participants were reluctant to be interviewed either at work or at home, proved more problematic due to both noise and privacy reasons. However, it is difficult to see how this situation could be improved upon, since the primary aim was to make a hard to reach group feel comfortable with being interviewed and for them to exercise a degree of control over the time and location of the meeting. Being willing to accept less than ideal conditions for interviewing would seem therefore to be part of an interviewee-focussed research project.

Bike shops were known to have a wide range of clients, (most of) whom by definition will be cyclists; many may be regular visitors who are getting their bikes serviced as well as those purchasing bikes. The particular type of cyclist who frequents each cycling outlet will be slightly different due to the various characteristics of each bike shop; such as whether they cater mainly for mountain bikes, racing bikes or hybrid and tourer bikes, which are usually more suitable for most commuting purposes. My initial discussions with bike shops suggested that leaflets were the best method of reaching their customers since they did not appear to maintain customer mailing lists or use their website to interact with customers regularly. I also used both emails and hard copies of the flyers to contact participants via several large employers which are situated in the relevant data production locations.

Two bike shops were chosen as recipients for the leaflets; Bike (Embassy House, Queens Avenue, Clifton, Bristol, BS8 1SB www.bike.co.uk) near the Clifton Triangle and Pembury Cycles (10-12 Gloucester Road, Bishopston, Bristol, BS7 8AE www.pemburycycles.co.uk) on Gloucester Road. These two bike shops are both in fairly central locations in busy cycling areas which were likely to receive a high degree of footfall. As previously mentioned (Section 5.3.4), it was particularly important for this research that I recruited both men and women.

As Sustrans found, with their 'Bike Belles' survey about bike shops, some women found them intimidating spaces where staff could be patronising or even rude

(Sustrans, 2013). For this reason I felt it was important to find places which would not automatically be off-putting to women. As a personal user I had also noticed that Bike has a reasonable number of female clients (and staff) as well as male, which I hoped would ensure a more even gender balance when recruiting (unlike some bike shops which are not viewed by women as attractive or friendly spaces). From my observations, the general attitude to male and female customers in the shop is friendly, helpful and not patronising which I would imagine helps with the gender balance, although in practice people may often either wish to or have to use their closest bike shop. Pemburys was also used in an attempt to gain a different range of clientele to Bike. This shop is based on the busy cycling commuter route of Gloucester Road, which is located in an area of the city which has higher than average cycling rates. For a discussion of how the data production method was refined and repeated in Cardiff and Penarth please see Section 5.5.

Whilst, in Bristol, the Cycling City project website (Better By Bike, 2015) was available as a potential recruitment tool, it was felt that this avenue was likely to have produced both too many participants and also more cycling 'activists', rather than newer or less experienced cyclists. In addition, given that this was a pilot study in which I aimed to interview a small number of people, it was envisaged that six initial interviews and three SRFGs would be sufficient. I was concerned that an announcement via the Better by Bike website might have produced a large number of responses which were then redundant, creating both more work for the researcher and also potentially disappointing many inappropriate participants.

The flyers advertising the study were left in two different bike shops, Bike and Pemburys, from April 2010 onwards and visits were made to check on and replenish stocks. I had also considered other Bristol bike shops (Bike Workshop Ltd, Blackboy Hill Cycles, Evans, Fred Baker, Mud Dock, ZeroG) in case recruitment was slow or difficult but due to the small numbers of participants needed for the pilot study this was not needed.

5.4.5.1 Sampling strategy

My sampling frame for the study was the population of Bristol for the Phase 1 Pilot Study. Within this sample I targeted only those who were existing cyclists for the initial interviews, and then members of the interviewees' social circle (both cyclists and non-cyclists) for the SRFGs. The sample was purposive and not intended to be representative of the populations of either the geographical areas studied or cyclists specifically.

I anticipated undertaking six in-depth, semi-structured interviews with adults (18 and over) who had self-identified themselves as regular cyclists and three SRFGs. The rationale for selecting regular cyclists was to investigate how they might influence other people whom they know well. For this to occur they will need to have a social status as a 'known cyclist'.

I also decided to restrict my participants to adults (18 years and above). Social relations between girls and boys are different than those between men and women

who are (largely) self-determining and who may be influenced by others from a position of relative power. There are further complications in researching social influence with those under 18, who may not be autonomous. For example, no matter how influenced a child is by the cycling of their peers, if their parents have restricted their movements due to perceived danger, they will not be able to ride a bike themselves. Therefore, I decided to focus my research on adults in this study.

I planned that approximately half of the interviews would be with males and half with females and I intended to achieve a fairly wide age spread within this. However, cyclists do tend to be clustered amongst certain age groups in the UK, so I anticipated that it may have been difficult to locate suitable older cyclists and older female participants in particular. The sample was not intended to be representative of the wider population. The numbers of interviews envisaged were a balance between gaining a range of perspectives on the topic under investigation and the pragmatic considerations of the researcher's resource constraints. As Mason states: 'qualitative samples are usually small for practical reasons to do with the costs, especially in terms of time and money, of generating and analysing qualitative data' (Mason, 1996, p.96).

Studying gender issues in cycling by focusing solely on women participants is perhaps to miss a key part of the story as Øyen states: 'no social phenomenon can be isolated and studied without comparing it to other social phenomenon… Understanding and explaining the nature of qualitative variation is a process which cannot be accomplished without previous reflections on similarities and dissimilarities

underlying the variation' (1990, p.291). Analysing the contrasting patterns in men's

and women's approaches to cycling, is therefore, of key importance in this study.

5.4.5.2   Incentives

Participants were given a small gift to thank them for their contribution to the

study. Using incentives can be controversial for several reasons (see Braun and

Clarke, 2013, p.60). Some researchers argue that paying participants is often simply

not an option, due to lack of funding, and that the more widespread the use of

incentives become, the more participants may be 'expecting' to be given them

(ibid.). Providing incentives may also raise questions over the intrinsic value that we

place on research. I decided to use incentives, since I felt that it was important to

recognise and value participants' time, and that given the low incidence of cyclists

in the general population, to maximise my chances of interviewing a sufficient

number of people. The incentive I used was either a £5 (SRFG member) or £10

(initial interviewee) shopping voucher for a local supermarket outlet. The higher

rate for initial interviewees was to reflect the fact that their interviews might take

longer, and also that they would then be asked to consider taking part in the second

stage of the research, which would involve passing details of their social contacts to

me; entailing further time and effort.

All participants were given a pack of cycling information at the start of the interview

or SRFG which included local maps, information leaflets from cycling organisations,

and information on reasons to cycle or how to cycle with children. The purpose of

this was for participants (and especially those who currently did not cycle) to have a

wide range of information which they might find useful, even if they were currently

cycling. Contents in Bristol were: Sustrans leaflet, CTC leaflet, Lifecycle leaflet,

Betterbybike postcard, and Bristol 2009 – a map for cyclists. In Cardiff the contents

were the same, minus the Bristol-specific Lifecycle leaflet, Bristol map and

Betterbybike postcard, and with the addition of a Cardiff Cycling map, a Cardiff Bay

Trail leaflet, and additional dual language English/Welsh Sustrans leaflets on; Cycling

with Children, Why Cycle?, and a Get Cycling guide. This, alongside the incentive

offered to participants, was considered in the nature of a 'gift'. Clearly, this may

have produced a certain picture of me in participants' minds and have created some

bias, since they saw me as encouraging/promoting cycling. This was part of a

conscious choice to adopt an emic/etic approach to the research topic (see Section

5.3.4).

Two other potential benefits were provided for interviewees. If I met participants

in a public place I also offered to buy them a drink, and I offered all participants the

chance to tick an optional box on the consent form to receive a summary report

about the research. Keeping the participants informed about the study is an

important part of the ethical framework (see Section 5.6) of this research for me.

I have detailed the exact sequence of actions which were followed when conducting

the data production in Appendix 10: Recruitment Process Stages, since I felt it was too

much detailed information to include in the main body of the thesis, but wished to

retain the information for anyone closely following the method. It covers the

recruitment process and the communications which I had with research participants

at Stages 1 and then progressing on to Stage 2 of the research, when applicable.

5.4.6 Data production record

In practice a total of eight interviews and two SRFGs were conducted for the pilot

study, in Bristol, between April and September 2010, as detailed in Table 3 below:

Table 4: Bristol Phase 1, Stage 1 data production record – Individual Interviews

No.	Date	Name (Pseudonym)	Age	Gender	Household Income (£)	Cycling Frequency
1	29/04/10	Tristan Evans	37	M	50,000+	Almost Daily
2	05/05/10	Kay Owens	51	F	15,000 – 29,999	Almost Daily
3	21/05/10	John Chancer	34	M	50,000+	Almost Daily
4	25/05/10	Toby Hislop	42	M	50,000+	Daily
5	23/06/10	Lucy Minty	26	F	30,000 – 49,999	Daily
6	30/06/10	Ellen Fowler	55	F	30,000 – 49,999	2-3 x a week
7	19/07/10	Molly Jenkins	61	F	30,000 – 49,999	Once a month
8	09/09/10	Catherine Church	49	F	30,000 – 49,999	Daily

A reasonable gender and age spread was achieved, especially considering that there

are fewer women and older people who cycle. Out of the eight interviews, three

were men and five were women, whilst in the SRFGs seven participants were female

and one male. Since the study has a particular focus on women's cycling, this over-

representation can be seen as less of a disadvantage, though in the main data

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production phase efforts were made to achieve a more even gender split. In terms of age, six out of all of the participants (Interview and SRFG) were in their 20's, two in their 30's, three in their 40's, four in their 50's and two in their 60's. Again, this ensured that the perspectives of a range of people of different ages were represented and a wide age-range was a goal for the Cardiff data production phase also.

Social class was not asked for as a specific category on the mini-questionnaire, since this was not a key focus of this research, and also because with a small, qualitative sample, I would be unlikely to say anything meaningful about the social class of my participants. However, many of the areas where participants lived, such as Clifton, Bishopston and Westbury-on-Trym, tended towards the more affluent areas of the city. Some measure of economic status may be gained from the household income category which was requested on the mini-questionnaire. This generated results in all of the categories used (Appendix 7) but the most frequently cited were the £30,000 - £49,999 and the £50,000+ categories. Also the use of two bike shops in more affluent areas of the city is likely to have resulted in relatively more wealthy people responding to the research call.

As the research progressed to the main data production phase in Cardiff, this level of affluence changed and broadened (see Section 5.5.2). The cycling frequency was intended to give some measure of participants' level of involvement with cycling. It is imprecise, since the categories might not fit people's patterns of cycling exactly, and

of course the amount of cycling they do may vary considerably weekly, monthly or seasonally. Some cyclists (in Phase 2) did state that they only cycled in the summer and this was added to the description of their cycling frequency.

Throughout the timeframe of the pilot study, I became more adept at managing the data production process, both in terms of interviewing skill and ease with the material, but also in terms of familiarity with the paperwork process. The actual steps which were involved in recruiting, interviewing and rounding off with participants are outlined below. This is the end process which was taken forward to use in Cardiff after researcher efficiency and capability was improved upon during the Bristol pilot study phase.

Table 5: Bristol Phase 1, Stage 2 data production record – SRFGs

No	Initial Interviewee	Date	Name	Age	Gender	Household Income	Cycling frequency
1	Lucy Minty	29th June 2010	Sarah Ubley	26	F	£15,000 – 29,999	Less than once per month/ never
1	Lucy Minty	29th June 2010	Hayley Carter	26	F	Up to £14,999	Less than once per month/ never
1	Lucy Minty	29th June 2010	Ellie Prescott	26	F	£30,000 – 49,000	Less than once per month/ never
1	Lucy Minty	29th June 2010	Amber Little	26	F	£15,000 – 29,999	Almost Daily
1	Lucy Minty	29th June 2010	Jane Potter	26	F	£15,000 – 29,999	Almost Daily
2	Molly Jenkins	3rd Sept 2010	Adam Garrett	54	M	£30,000 – 49,000	Daily
2	Molly Jenkins	3rd Sept 2010	Kirsten Holme	60	F	Declined to answer	Almost Daily
2	Molly Jenkins	3rd Sept 2010	Paula Krisp	62	F	Up to £14,999	Less than once per month/ never

Eight participants took part in the Phase 1, Stage 2 SRFGs; 5 female friends of Lucy Minty in the first SRFG, and 2 female friends and 1 male friend of Molly Jenkins in the second SRFG. Since all of the participants in these SRFGs were friends of the initial interviewee, and so there is no variety, I have not specified the relationship to the initial interviewee in Table 3. In the Phase 2 data production the relationships are more varied and so they are specified in the relevant data production table (Table 6).

5.4.6.1   SRFG conversion ratio

In the Bristol pilot study, two people agreed to proceed to the SRFG stage. Since there were eight initial interviews and two SRFGs, one out of every four initial interviewees decided to proceed to Stage 2. I have called this a 'conversion rate' of one in four. Given the practical, social and psychological difficulties which may have been present for participants, this is not unexpected. This confirmation that the methodology was possible, although challenging, encouraged me to continue with it for the Cardiff main data production phase. This conversion rate also gave me an indication of how many interviews at each stage I needed to plan for when moving on to Phase 2 of the research; other factors were data saturation and gaining a range of different participants in terms of gender, age, ethnicity and geographical location.

5.4.7 *Refinements to interview/SRFG questions.*

My research questions, as detailed in the moderator's guide (Appendix 5) were refined and improved upon during the pilot study phase of the research in 2010, as part of an inductive approach to this research. Again, the themes and questions were changed, refined and added to in an organic way throughout the pilot study process. No question themes were taken away, but two key additional themes were added:

Cycling Infrastructure: after a few interviews were conducted, a gap seemed to emerge around the specific types of cycling infrastructure which participants thought were helpful to them (or not), so this was added as a theme in the moderator's guide. This involved asking participants more specifically what they felt about measures such

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as segregated cycling infrastructure, shared walking and cycling routes, 20mph zones and on-road routes, delineated by painted lines.

Cycling with children: this also emerged as a topic which would be pertinent to cover as, when families grow, they encounter different barriers and enablers. Early interviewees in the pilot study talked about these difficulties and the process of managing them, and this is a factor which often has gendered impacts since women are still more likely to be responsible for escort journeys such as accompanying children to school. I asked participants about whether they had ever cycled with children, what enjoyments and challenges this had involved, and what could make cycling with/for children easier.

After this process of refinement, I eventually decided on eight themes (Appendix 5);

1. Early/childhood cycling

2. Current cycling and social network (inward social influence)

3. Multi-modality (usage of different types or modes of transport, including car ownership and usage)

4. Gender aspects of cycling

5. Cycling with children (at all stages from carrying them to independent cycling)

6. Barriers and enablers

7. Influence on others to cycle (outward social influence)

8. Preference of types of cycling facilities generally, and awareness and use of Pont y Werin

Another change which was made between the two phases, was that the income

categories were changed, to give a better indication of household income, as

those used in Bristol were, on reflection, decided to be very broad. The initial

categories used in Bristol were; up to £14,999, £15,000 - £29,999, £30,000 -

£49,999, £50,000+. In Cardiff these were changed to; up to £10,000, £10,001 -

£20,000, £20,001 - £30,000, £30,001 - £40,000, £40,001 - £50,000, £50,001+. I also

made it more explicit that I was asking for personal income in the case of a shared

household of unrelated members. Whilst this was not a quantitative study which

could assess peoples cycling levels by an income variable, this gave me a means to

ensure that my sample was not composed entirely from one income category.

The household income levels given by participants is provided in Appendix 11.

5.5 Phase 2: Main data production, Cardiff – research process

In this section I have included a discussion of the context of the main data

production phase in Cardiff and Penarth from October 2010 until March 2011, the

steps taken to encourage greater participation and the scope and range of material

gathered. The overall methodological approach and the degree of validity and

reliability will be evaluated, the issues which were encountered discussed, and

suggestions for future related research outlined. Following this chapter the results

from the data production phases and the analysis and discussion which follow from

them will be laid out in Chapters Six, Seven and Eight.

5.5.1 Phase 2, Stage 1: In-depth interviews

This stage of the main data production phase involved conducting semi-structured interviews. As with the Bristol Pilot Study (Phase 1, Stage 1), the participants in this, Cardiff based phase of the research were initial interviewees, comprising adult male and female members of the local community who participate in regular cycling. For this stage I intended to interview a minimum of 20 participants, to provide a range of different viewpoints on the topic. I intended to follow a saturation process in terms of determining numbers of people to interview, as often employed in grounded theory (Corbin and Strauss, 2015). This involves interviewing until it is found that nothing new is being added to the research themes. In the event I did not seem to hit a saturation point as I was finding new themes were emerging from the interviews; this may have been due to the broad and wide-ranging nature of the themes in the moderators guide. It can also be difficult to determine the particular saturation point as Robson notes (Robson, 2002).

Finding such a point is also complicated in this research design by the fact that the two-stage process involved trying to recruit as many participants to stage two as possible and that this involved continuing with initial interviewees (Stage One) as long as possible to increase this. I stopped recruiting once I had found additional participants to cover gaps present in the data production of younger and older participants, and so achieved the range of interviewees desired. At this point no further interviewees wished to proceed to Stage 2, so I decided to stop at five SRFGs,

rather than continuing to interview more people in Stage 1 in the hope of progressing to Stage 2.

5.5.2 *Phase 2, Stage 2: Social reference focus groups*

The second part of the pilot study involved conducting SRFGs with the social networks of people involved in Stage 1, the initial interviewees. I had refined how I approached the second stage with participants during the Bristol pilot study. Rather than asking a selected number of 'egos' who seemed particularly engaged with the research project to take part in Stage 2, I asked nearly all participants to give me the best chance of recruiting to Stage 2 (apart from any who seemed particularly unengaged). After the pilot study had provided a conversion rate of one in four, I had an idea of how many interviews I might need to do in order to conduct a certain amount of SRFGs.

As before, participants were given a voucher for a (different) high street shop as a small amount of recompense for their time. Initial interviewees (egos) were nearly all asked if they would be willing to take part in Stage 2, and the timed, staged process developed during the Phase 1 pilot was set up to remind participants about the second stage, to try and maximise the likelihood of recruitment (Appendix 9).

5.5.3 *Justification of Cardiff as a data production location*

The choice of where to situate the main data production phase was influenced by three main factors; the Cardiff Connect2 site and iConnect programme, it being a reasonable comparison to Bristol, and pragmatic considerations (as previously mentioned in Section 1.5.2). Cardiff was chosen as part of Sustrans Connect2 programme to have new facilities for walkers and cyclists – the Pont y Werin (The People's Bridge) and its surrounding linking routes. The bridge itself links Cardiff Bay on the eastern side with Penarth on the western side and was officially opened on 14th July 2010 (see Section 5.5.5 for a more detailed description of the bridge and some images of it in use). A six mile long, mainly traffic-free route has been developed around Cardiff Bay which utilises the Pont y Werin; the Cardiff Bay Trail. The bridge was a major undertaking for the area, costing £4.5m and providing the first walking and cycling route in this area for many years. The iConnect project also chose Cardiff as one of the sites for their pre and post intervention survey, which was carried out in 2010 and 2011 (see Section 8.7 for the results from this research project).

Whilst my research was focussing mainly on the social aspects of cycling, I also felt it was important to situate my data production in this area where such a significant walking and cycling bridge was located, to see if participants had heard of it and if so, how they were using it. I also thought it would enable me to add a different, but linked contribution to the iConnect research project. I included a question about whether participants were aware of and had used the new infrastructure, Pont y

Werin. This prompted a range of interesting responses; both supportive and less so, for the project.

5.5.4 Cardiff/Penarth; the city/town and cycling culture

Cardiff is a unitary authority and the capital city of Wales with a population of 336,200. Located in the South East of Wales, it is host to many cultural, businesses and service industries, as well as the Welsh Government (WG). Penarth is a seaside town located 5 miles to the Southwest of Cardiff city centre which is administered by the Vale of Glamorgan local authority. Many of its population of 23,245 commute into Cardiff and there are a high number of older, retired residents also, in common with many UK coastal towns, as described in Section 1.5.1.

Map 3: Map showing Cardiff City Centre and Penarth
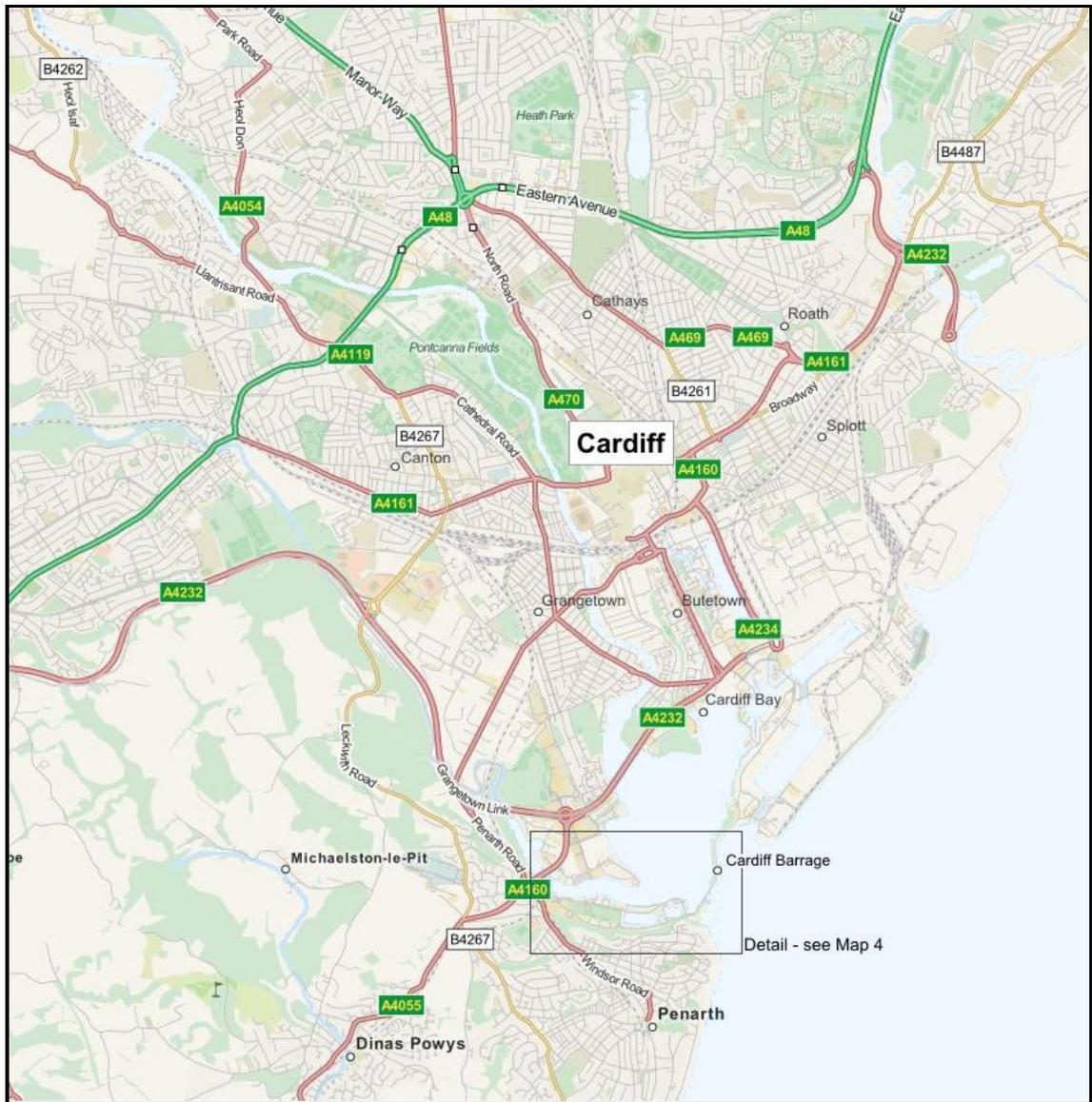
© OpenStreetMap contributors CC-BY-SA 2.0

Image 5: Photograph of Cardiff Bay area

©Stephen Dale

In terms of transport, the city has many local rail lines serving the many districts and towns surrounding Cardiff. There is also an integrated transport hub at Cardiff Central railway station, with the bus station being located directly in front of the train station. Several well-known traffic-free walking and cycling routes, such as the Taff, Ely and Rhymney Trails form part of an overall provision of cycle routes of 94km. However, recent research conducted into people's commuting behaviour found that: 'cyclists in Cardiff appear to be influenced to a greater extent by deterrents to cycling and as a result will need a greater level of improved facilities to increase cycling numbers' (Department for Transport, 2004). Like Bristol, Cardiff would seem to have some way to go towards achieving a comprehensive and safe cycling infrastructure, and can therefore be considered to be a potentially emergent cycling location.

5.5.5 *Pont y Werin and Connect2*

The Pont y Werin or People's Bridge (opened in July 2010) connects the market and seaside town of Penarth in the Vale of Glamorgan with the offices, shops and facilities of the Cardiff Bay area, to the south of Cardiff City Centre. A series of routes linking with the bridge were either in place or planned at the time of the research, and it also linked in with the wider cycle network in the Cardiff area, including the popular Taff Trail (National Cycle Network route 4). There was some enthusiastic local support for the link, prior to its construction and its supporters believed it had the potential to encourage many more people to choose to cycle for commuting, shopping or leisure purposes (Sustrans, 2010). Cardiff Connect2 scheme was also chosen as a case study site for a longitudinal questionnaire in the wider iConnect study, aimed at detecting changes in travel behaviour patterns pre- and post-intervention (see Section 8.7 for a summary of results from this project). If this infrastructure was able to make these links easier, faster and more convenient for people who are walking or cycling, then it will also be in people's interest to use them, as Sustrans hoped.

Map 4: The location of Pont y Werin (The People's Bridge), Cardiff Bay
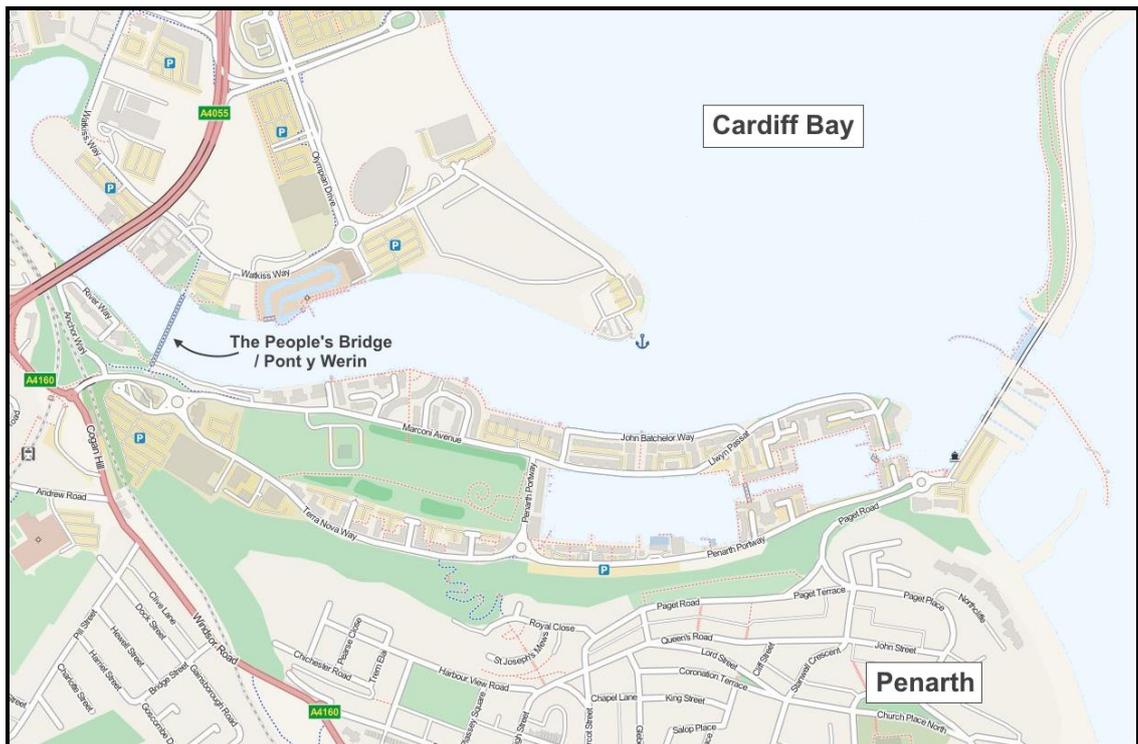
© OpenStreetMap contributors CC-BY-SA 2.0

Image 6: Artist's impression of Pont y Werin with inaccessible road bridge in the background

Image courtesy of Sustrans

Image 7: Walkers and cyclists using the Pont y Werin 1

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Image 8: Walkers and cyclists using the Pont y Werin 2

©Stephen Dale

5.5.6 Recruitment strategy and process

Data production took place in Cardiff and Penarth from October 2010 until March 2011. As previously mentioned in Section 5.4.5 the initial recruitment methods were via employers and flyers in bike shops. Contact was made with the travel planning team at Cardiff Council who were helpful and willing to distribute information to council employees. Due to their computer usage restrictions it was not possible to distribute information to all staff, so an invitation email with details of the research was sent to two groups of council employees; those who had previously responded to a travel planning survey and indicated that they were willing to participate in further research, and those who owned a workplace locker at any of the council office locations as these were mainly used by active travel commuters.

The other main initial method of recruitment was via flyers in bike shops City Cycles, Damian Harris, Reg Braddick and Pedal Power (bike rental service). The flyers used were similar to the ones used in Bristol (Appendix 7), but with two additions; the second stage of the research was mentioned upfront and the flyers were double-sided to accommodate both Welsh and English text (Appendix 12). The text was translated into Welsh free of charge by the Welsh Language Board. As part of the ethical approval for the project it was decided to offer an interview in Welsh, using a translator, if this was requested, but in the event nobody did ask for this option.

These two methods resulted in an enthusiastic response from cyclists in Cardiff and I interviewed people located in many different areas of the city. I interviewed an almost equal number of women (16) and men (18), and participants had widely varying amounts of cycling experience and participation (see Section 5.5.7 for a full demographic breakdown of participants). The responses which I received though were clustered mainly in the middle age ranges with fewer responses from those in the older or younger groups. This can partly be explained by the recruitment methods used – the emails sent to employees at Cardiff Council for example would not reach older retired cyclists, by definition. To attempt to rectify this I targeted older cyclists, by placing a letter in the local newspaper in Penarth – the Penarth Times. This generated a good response and also allowed me to hear from more cyclists who were based in Penarth and who may have had rather different views to those who were Cardiff based.

The recruitment method I used to try and recruit younger cyclists (18-25 years old) was to bike tag 40 bikes outside the humanities and social sciences library at Cardiff University. Small signs giving details of the study were placed around the frame of each bicycle and stapled together. The flyers were covered with clear plastic film (but not laminated) to give them a degree of protection from the weather. I also contacted University College, Wales (UWIC) who sent an email about their Bicycle User Group (BUG) giving details of the study. Unfortunately in the event, neither of these two methods were very successful in gaining me any new participants; there was one (indirect) response from the bike tagging and the email generated 3

potential participants, but they were all older than the specific group I was

targeting at the time and so I elected not to interview them. In general, I had

greater success at engaging with older cyclists than younger, as will be seen from

the Cardiff data production table below.

Another means of recruiting more participants for the study came about naturally

through snowballing from a few participants. Each of these new potential

participants seemed to offer a slightly differing perspective on cycling in the area,

due to their characteristics and so these were accepted. The primary aim with a

purposive sample such as this is to ensure as wide as possible a range of different

perspectives and opinions about what cycling was like in Cardiff and Penarth,

gender differences and the role of social influence in their own and others cycling.

The sample frame which was determined upon for the main data production phase

was concerned with achieving a balanced number of participants in three key

characteristics; gender, age and area of residence. The first was to ensure that the

viewpoints of both men and women were fairly represented in the study, especially

given the focus upon this area. The second was in response to the recognition that

older people, in common with women, are less likely to cycle in the UK, and that

those of different ages are likely to think and feel differently in terms of their cycling

experiences. Area of residence referred to the twin neighbouring locations of

Cardiff and Penarth and my wish to examine the similarities and differences in the

perspectives of cyclists who came from these two areas. These were obtained, so that I could analyse the roles of these characteristics in shaping attitudes.

5.5.6.1 Sampling strategy

My sampling frame for the study was the populations of Cardiff and Penarth for Phase 2. As before, I targeted only those who were existing cyclists for the initial interviews, and then members of the interviewees' social circle (both cyclists and non-cyclists) for the focus groups. The sample was purposive and not intended to be representative of the populations of either the geographical areas studied or cyclists specifically. In this location I anticipated undertaking 25 in-depth, semi-structured interviews with adults (18 and over) who had self-identified themselves as regular cyclists, together with 5 SRFGs.

5.5.6.2 Incentives

In Cardiff the incentive amount was changed slightly to being £5 for all participants for three reasons: the greater number of recipients needed for Phase 2, my experience of the Bristol pilot study suggesting that the smaller incentive was sufficient and also the resource constraints when interviewing significantly more participants in the main data production phase. I also changed the shopping voucher to a different supermarket since this would be easier to access for most of the Cardiff and Penarth based participants.

5.5.6.3 Research process stages

A very similar process was followed to that described for the Bristol pilot study in Appendix 10: Research Process Stages, please refer to this for an explanation. The paperwork was used in the same way, at the same stage in the recruitment process and the same interview location options were offered to participants. Recruitment was heavily focussed on Cardiff County Council employees, due to a contact with a gatekeeper there, and the intention to conduct many more interviews and SRFGs in Phase 2. However, bike shops were also used as recruitment locations, and some other methods were used to target younger and older participants once it became apparent that there were fewer of these in my sample. This process has been described in Section 5.5.1.

5.5.7 Data production record

In total in Cardiff and Penarth, I interviewed 34 individuals (egos) and 14 people (alters) as part of 5 SRFGs. The breakdown by gender and age is given below.

Table 6: Cardiff Phase 2, Stages 1 and 2 participants, by age and gender

Participant Age Range	Interviewee Men	Interviewee Women	SRFG Men	SRFG Women
18 - 29	1	1	2	1
30 - 39	6	4	0	2
40- 49	1	5	0	1
50 - 59	6	2	2	4
60 - 69	4	3	1	0
70+	0	1	0	1
Total	**18**	**16**	**5**	**9**

As is shown in Table 4, almost even numbers of men and women were interviewed, but there were a greater number of female participants in the SRFGs. For Stage 1 a good range of men and women was achieved in the majority of the age ranges. Fewer people were recruited to Stage 1 in the youngest (18 – 29) and oldest (70+) age brackets, and there was only one male interviewee in the 40 – 49 age band. Stage 2, where there are only 5 male and 9 female participants, has no particular pattern to the age spread as there are so few people involved.

Below is a description of the participants from Stage 1 who I interviewed in Cardiff and Penarth (Table 5), and then following that a summary of the Stage 2 SRFG participants (Table 6).

Table 7: Cardiff Phase 2, Stage 1 data production record – Individual interviews

No.	Date	Name (pseudonym)	Age	Gender	Household Income	Cycling Frequency
1	21st Oct 10	Adam Jessop	37	M	£10,001-£20,000	Almost Daily
2	21st Oct 10	Jenny Durrant	48	F	£20,001-£30,000	Daily
3	21st Oct 10	Matthew Ford	53	M	£30,001-£40,000	Almost Daily
4	21st Oct 10	Catherine Collins	39	F	£30,001-£40,000	2-3 Times per Week
5	26th Oct 10	Paul Baker	36	M	£40,001-£50,000	Daily
6	26th Oct 10	Derek Griffiths	59	M	£30,001-£40,000	2-3 Times per Week
7	26th Oct 10	Connor Mason	31	M	£20,001-£30,000	2-3 Times per Week
8	4th Nov 10	Nina Shaw	40	F	£30,001-£40,000	Almost Daily
9	4th Nov 10	Owen Church	43	M	£50,001+	Almost Daily
10	4th Nov 10	Thomas Winton	32	M	£30,001-£40,000	2-3 Times per Week
11	4th Nov 10	Gina Wilkinson	35	F	£10,001-£20,000	Almost Daily
12	6th Dec 10	Viv McKinnon	49	F	£30,001-£40,000	Almost Daily (Summer only)
13	6th Dec 10	John Francis	30	M	£20,001-£30,000	Daily
14	6th Dec 10	Kris Brampton	58	M	£20,001-£30,000	Daily
15	6th Dec 10	Nat Winter	56	M	£50,001+	Almost Daily
16	15th Dec 10	Linda Cutler	42	F	£40,001-£50,000	Almost Daily
17	15th Dec 10	Peter Stein	52	M	£10,001-£20,000	Daily
18	15th Dec 10	Anne Sully	41	F	£50,001+	Almost Daily
19	15th Dec 10	Ahmed Mahmood	32	M	£10,001-£20,000	Daily
20	17th Dec 10	Fritha Doherty	51	F	£10,001-£20,000	Once a week
21	17th Dec 10	Joan Christopher	27	F	£40,001-£50,000	Daily
22	17th Dec 10	Andrea Linton	36	F	£20,001-£30,000	Almost Daily
23	21st Jan 11	Greta Mayer	55	F	£10,001-£20,000	Almost Daily
24	21st Jan 11	Josie Ziller	34	F	£20,001-£30,000	Daily
25	21st Jan 11	Murray Barrell	52	M	£20,001-£30,000	Almost Daily
26	15th Feb 11	Carol Jessop	65	F	£20,001-£30,000	Daily
27	15th Feb 11	Mark Walker	22	M	£50,001+	2-3 Times per Week
28	21st Feb 11	Eva Grainger	61	F	Dec. to answer	Once a week
29	21st Feb	Chris Elton	62	M	Up to £10,000	Almost Daily
30	21st Feb 11	Jan Heller	82	F	£10,001-£20,000	Almost Daily
31	24th Feb 11	Sarah Saunders	61	F	£40,001-£50,000	2-3 Times per Week
32	24th Feb 11	John Dickens	68	M	£30,001-£40,000	2-3 Times per Week
33	28th Feb 11	Max Siston	64	M	£20,001-£30,000	Once a week
34	9th March 11	Finn Jennings	64	M	£50,001+	2-3 Times per Week

Table 8: Cardiff Phase 2, Stage 2 data production record – SRFGs

No	Original Interviewee	Date	Name and Relationship to Ego	Age	Gender	Household Income	Cycling Frequency
1	Jenny Durrant	10th Jan 2011	Mary Foster (Colleague)	23	F	£10,001-£20,000	2-3 X a week (Summer only)
1	Jenny Durrant	10th Jan 2011	Deana Gould (Colleague)	50	F	£40,001-£50,000	less/never
1	Jenny Durrant	10th Jan 2011	Carmel Dreyfus (Colleague)	41	F	£50,001+	less/never
1	Jenny Durrant	10th Jan 2011	Megan Darnton (Colleague)	37	F	£50,001+	less/never
1	Jenny Durrant	10th Jan 2011	Joss Sully (Colleague)	39	F	£30,001-£40,000	a few X a month
2	Murray Barrell	4th Feb 2011	Matt Vincent (Colleague)	29	M	£30,001-£40,000	almost daily
3	Jan Heller	6th Mar 2011	Cass Bryant (Friend)	54	F	£30,001-£40,000	less/never
3	Jan Heller	6th Mar 2011	Zoe Mayer (Friend)	72	F	Up to £10,000	less/never
3	Jan Heller	6th Mar 2011	Kathy Hawkins (Family)	51	F	Up to £10,000	less/never
4	Greta Mayer	9th Mar 2011	Gill Doynton (Friend)	55	F	£30,001-£40,000	less/never
4	Greta Mayer	9th Mar 2011	Ray Preston (Friend)	57	M	£30,001-£40,000	a few X a month
4	Greta Mayer	9th Mar 2011	Jay Preston (Friend - observer)	14	M	£30,001-£40,000	once a month
5	Peter Stein	16th Mar 2011	Harry Mears (Friend)	58	M	£50,000+	almost daily
5	Peter Stein	16th Mar 2011	Gary Green (Friend)	60	M	£20,001-£30,000	almost daily

The composition of the SRFG participants was as follows; six colleagues, four friends and one family member. Two groups were composed of colleagues only, two of friends only and there was one mixed group consisting of two friends and one family member. Please note that in SRFG 4, one member of the group, Jay Preston, was an 'observer' rather than a participant. This is due to his age (14-years-old), which is under the threshold I had decided upon for the research of 18. I was unaware of the observer's age until the SRFG took place, and since this was a family

group, interviewed in their home, I decided it would have been unethical and unreasonable to insist that he did not take part. For this reason I have included his details in the data production record, but did not present any material from him in the results chapters.

5.5.7.1   SRFG conversion ratio

In the Cardiff and Penarth main data production phase, five people decided to proceed to the SRFG stage. Since there were 34 initial interviews and five SRFGs, one out of every seven initial interviewees decided to proceed to Stage 2. I have called this a 'conversion rate' of one in seven. Given the practical, social and psychological difficulties which may have been present for participants, this is not unexpected. In this second data production phase there were also a number of initial interviewees who passed on details of the study to other individuals that they knew, so that I also interviewed a number of individuals. This is more akin to a snowballing strategy as referred to earlier. If this is taken into account then the conversion rate will increase, but since I was specifically looking for a second stage consisting of SRFGs, this is the figure I have used here. The five participants who did agree to take part in Stage 2 were all long-term committed cyclists (some of whom had overcome significant barriers in order to cycle), apart from one participant, who was a recent and enthusiastic convert to cycling. It is difficult to tell whether these participants have any commonalities from such a small number of people. A discussion of the successes and challenges of the methodology is provided in Section 8.4.

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5.6 Ethical framework and considerations

Ethical approval for the research was sought via the University of the West of England's Faculty Ethics Committee in August 2009 and this was granted on 29th September 2009 (Appendix 13). There were no extensive or distinctive ethical implications as no especially vulnerable groups were being studied and the subject matter was not thought to be particularly divisive or controversial. However, as in all research, care was taken to consider potential areas for concern and to ensure that any risks of harm to either the researcher or to participants were minimised.

Some researchers have suggested that a greater degree of concern for ethical implications is necessary for qualitative research (Lewis, 2003; Mason, 1996) due to the fact that qualitative methods tend to 'promote a high degree of trust amongst research subjects' (Mason, 1996, p.56). According to Lewis, qualitative work may also raise unanticipated issues and the in-depth and unstructured nature of much of the process may also lead to a greater degree of ethical concerns to deal with (Lewis, 2003). Being mindful of such situations, I identified four broad categories within this project which I considered required careful thought and anticipation; anonymity, informed choice, participant safety and researcher safety.

5.6.1 *Anonymity*

Participant confidentiality or anonymity was given a high priority and some of the measures put in place to do this have already been mentioned (Section 5.4.5.3 Phase 1

Research Process Stages). Anonymity processes were revealed to participants in the information sheet (Appendix 4), consent form (Appendix 6) and at the start of each interview and SRFG. Paperwork from the interviews was kept in a locked drawer which was only accessible to me, in a locked office which was shared only with fellow research staff. A data production record of the interviews and participants pseudonyms was kept separately, in a different locked drawer.

All transcripts and audio files were given a pseudonym when stored digitally and any dissemination materials such as reports, presentations and papers were likewise anonymised. Audio files were promptly deleted from digital recorders throughout the data production process, though the anonymised versions of these audio files will be retained until publication from the research ceases. Family members', friends' and colleagues' names were also changed to pseudonyms where it was thought appropriate, in case the name or circumstances described might reveal their identity. This process involved me reading through each transcript and simultaneously listening to the corresponding audio file. Distinctive names were changed to pseudonyms, especially in the case of close family members.

The social maps (for an example see Appendix 8) which participants produced as part of the interview process have been and will be used in the dissemination from the study, such as in this thesis and for papers and presentations. Participants' names are removed or changed to their pseudonyms (as described in the information sheets, Appendix 4), but I felt it unfeasible to try and change all of the names of any social contacts who they have written down, so for this particular example a small degree of

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disclosure may be involved. Since some people have written down numerous social contacts in their social maps, to ensure complete anonymity I would have needed to create a brand new map from scratch in my own hand-writing or typed text. Also, most people used first names only for their social contacts, which would make definite identification of the social map creator difficult. I judged that this was in most cases unnecessary and would detract from the character and purpose of the social maps, however when particularly distinctive names, names together with relationship to participant (i.e. Mike, Husband), or actual names of other research participants were used, I changed these.

Lewis makes a distinction between direct attribution (comments which are linked to a specific role or name) and indirect attribution (where an individual or small group might be identified by a collection of characteristics) (Lewis, 2003). It appears that a small amount of indirect attribution may therefore be involved in this study, but this has been consented to by the participants involved, and I have taken care to use examples which I feel are more likely to be anonymous for the participants, or anonymise the examples as described. The risks of any such disclosure also have to be borne in mind, and since the research topic is cycling, there are unlikely to be many negative consequences for any of the participants in revealing that they are a cyclist, compared to more sensitive research topics where disclosure may produce serious consequences for the person concerned.

5.6.2 *Informed consent*

I also took care to ensure that participants were given every opportunity to make an informed choice about the research at all stages, which has already been mentioned (see Section 5.4.5 Bristol Recruitment Strategy). This was perhaps more critical for this particular project since the research had two stages. All participants saw an initial recruitment poster (Appendix 12) or email (Appendix 14) which gave brief details about the study. When they contacted me I sent them a Participant Information Sheet (Appendix 4) which provided more detail about the research process. At the start of the interviews participants signed a consent form (Appendix 6) which explained to them that they were free to withdraw from the study at any point if they so wished, although no participants actually did choose to do this. The nature of the second stage of the research involving the SRFGs was mentioned to participants at the end of the interview and then followed up with an email containing more details. All of the social contacts (or alters) of the original participant were also given the same level of informed choice throughout the research process.

In doing this I recognise that 'It may be impossible to receive a consent which is fully informed, and the responsible researcher should be prepared to recognize this, and think through its implications, in their research practice' (Mason, 1996, p.58). Mason problematizes the notion of simple and straightforward informed consent due to factors such as researcher/researched power imbalances, and the limits of the participants' awareness of exactly how information may be used from an interview (ibid.). Here the task is to weigh up the balance between being careful to inform

research participants as fully as possible on the one hand and overwhelming them with what they may see as uninteresting and off-putting detail on the other.

5.6.3 Participant safety

Since the second stage of my data production process involved SRFGs; focus groups with people who knew the original interviewee, thought had to be given to possible unintended impacts upon the original participants. Using SRFGs deliberately created a situation in which the original interviewee was being directly discussed; this had the potential for several effects. The discussion of the original interviewees cycling may have involved unflattering, critical or even hostile comments. In discussing the person, some members of the SRFG may have learned new information about them, which they may then have shared with others. As the discussion unfolded of course other aspects of the original interviewees life may have been discussed or revealed to people who did not know it; not simply information about cycling, but other aspects of their work, personal or social life. This could have led to a range of consequences for the original interviewee from embarrassment at some aspect of disclosure to a relationship breakdown or curtailment. In the event, I was not aware of any of these effects happening in practice, and the discussions which were held about the original interviewee (ego) positive and light-hearted. I decided not to specifically inform participants of these possible risks, since I judged that these problems were unlikely to occur and it seemed likely to worry people unduly.

5.6.4 Researcher safety

Some of the data production took place in participants' homes and consequently there could have been risks for a researcher going alone (in Stage 1) into a stranger's house. Lewis argues that 'researchers who conduct fieldwork also place themselves at risk, and arrangements should be made at the beginning of the study to minimise this' (Lewis, 2003, p.70). Consequently, a phone-buddying system was devised as a safeguard to provide me with some protection in the case of any difficulties.

This involved me informing a buddy (a fellow PhD student or researcher from the office where I work) in advance of the time and date of the interview, telephoning just before going into the participant's home and then calling the buddy again after the interview had finished so that they knew that nothing out of the ordinary had occurred. If I did not ring at the allotted time, the buddy was instructed to try and ring me and if they could not get through, to telephone my partner who would then take any necessary action. This arrangement worked well in Bristol and so was continued for any such occasions during data production in Cardiff. When the interview or SRFG took place in a public building, such as a participant's workplace, a cafe or a hired meeting room, this arrangement was not used as it was not deemed necessary, due to the public nature of the location.

5.7 <u>Data preparation and analysis</u>

The taped interviews and SRFGs were transcribed in full either by myself (one-third of the data) or by a professional transcription service (two-thirds of the data). I used a combination of orthographic and phonetic approaches to the transcription, which included both the direct speech (what was said) but also particularly notable expressions, hesitations or changes of mood or tone from participants (how it was said) (Braun and Clarke, 2013). I included distinctive coughs, 'umms' and 'hmms', and also noted instances where the participant or researcher laughed. The sentences were not neatened or tidied, but left as spoken, which is often more incoherent than written speech. Although this makes for a longer transcript I thought that this level of detail was important for an exploratory study such as this with the focus on participants' experiences.

When I received the transcripts back from the transcription agency I rapidly discovered that professionally transcribed interview transcripts required a great deal of checking and amending, to a level I had been unprepared for at the start of the process. This related to several aspects of the data; not hearing or understanding particular local geographical terms or 'technical' language relating to cycling (i.e. words such as pannier or hi-vis), and many small sections of the interviewees speech which were indistinct were misheard or simply not transcribed at all.

Overall then, the level of detail and care taken over the professional transcripts was much less then I myself employed, therefore I spent considerable time checking and re-transcribing them. The time needed to re-format and 'correct' these transcripts was less than the time required to fully transcribe them myself however. It was a helpful way of assisting with the time pressures associated with the data production and analysis stages, but was not either quick or straightforward. Lapadat discusses how transcription conventions can be used to aid different researchers transcribing in a 'standardised' way, but this was not possible with the transcription agency (Lapadat, 2000, p.204). Related to the difficulties of using a professional service is the consideration that multiple editorial and theoretical choices are continually being made throughout transcription, which will have been done very differently by myself and paid transcribers, due to our different levels of knowledge of and immersion in the topic.

The transcripts were then entered into NVivo, a computer aided software (CAQDAS) (see Glossary on p.XIV) to help with the management and analysis of the data. I used an interpretive and flexible approach to the data analysis which uses some coding, but also relies on the researcher's interpretation of the texts and ascribing meanings to those texts (Robson, 2002). This fitted the overall flexible and inductive orientation to the research. The analysis was conducted in a thematic analysis format, following Braun and Clarke (2006). To improve my skills in using this form of qualitative analysis I attended a two-day Thematic Analysis Masterclass, organised by two experts in the field (Braun and Clarke, 2013). I also kept a reflexive

diary of the data production phase of my research which included both practical

details of all interviews and SRFGs, but also learning notes regarding the issues,

concerns and successes that arose during the data production.

Some further detail of the processes of data analysis will be given in the results

Chapters Six and Seven, since this aids clarity for the reader, but a brief outline is

given here. The following steps were taken for each data production item:

- Initial thoughts on the content (amongst other factors) of the interview or

  focus group were written down in a reflexive diary; these were then added

  into NVivo. An example is given in Appendix 1.

- All of the audio files were listened to initially to gain further impressions about

  the data.

- The interviews and focus groups were then transcribed in the manner

  described earlier in this section.

- All of the transcripts were then read through a second time, checked and

  amended as necessary and fully anonymised (making sure that any distinctive

  names of social contacts were also removed so that there was little chance of

  the participant being identified by proxy).

- Firstly, an inductive, open coding structure was developed for the gender

  analysis, along thematic analysis lines (Braun and Clarke, 2006). A total of 372

  open codes (nodes in NVivo) was initially made, encompassing such items as;

  the importance of good driver behaviour, enjoyment of cycling speed and

power, women cycle slower and dislike of others running red lights. This

encompassed just the main body of the Bristol interviews.

- The codes were next tidied up to remove duplicates, collapse similar codes

    into each other and develop broader overarching themes and sub-themes. As

    Braun and Clarke describe this process it 'involves the searching across a data

    set...to find repeated patterns of meaning' (Braun and Clarke, 2006, p.86).

    Luker describes it as 'pattern recognition', which gradually comes from the

    'noise and discomfort and disorder of our very first batch of data' (Luker,

    2008, p.201). The key gender-related coding themes were: Affective Barriers,

    Affective Enablers, Instrumental Barriers, Instrumental Enablers, and Gendered

    Aspects of the Cycling Experience. These themes and the sub-themes which

    come under each theme are described in Sections 6.4, 6.5, 6.6, 6.7 and 6.8.

As previously mentioned, some further details of the analysis processes are

separated out and given in the following results Chapters, Six (gender analysis) and

Seven (social influence analysis), to make the different areas of analysis more

understandable. However, here I will now provide a brief overview of the separate

analyses which were undertaken for the gender and social influence strands of the

research. The gender analysis, contained in Chapter 6 draws on material from

Cardiff, both interviews and SRFGs. The chapter opens with two cycling profiles,

which are intended to give an indication of the cycling life histories of participants,

and how cycling has been more or less prominent in their lives dependant on other

life events. Following this the gender analysis is split into five themed sections,

each with smaller sub-sections, which contains the most relevant and important factors relating to gender and cycling from the interviews and SRFGs. In Chapter Seven I present the findings relating to social influence, in several sections. The first part uses analysis from SRFGs from both the Bristol and Cardiff data production locations (for reasons explained in Section 7.1), to explore both inward and outward social influence. The second section explores the social maps which were drawn by interview participants only, in both Bristol and Cardiff, these explore how participants represent their social networks visually, and so provide a different and complementary way of thinking about social influence. In the interviews discussion about social influence and the drawing of the social maps interweaved together.

The last section in Chapter Seven discusses how the image prompts were used in the SRFGs, as a means of generating discussion about different types of cycling and cyclists. These different parts of the analysis intersect and overlap in various ways; for example discussions about social networks overlap with the drawing of and description by participants of their social maps. Whilst the coding themes are organised into affective and instrumental (and barrier and enabler) sections, for reasons describe in Chapter Six, I recognise that there will inevitably be some intersect with these categories also. Many aspects of cycling may involve a mixture of affective and instrumental components, for example it is difficult to separate the use of PPE into affective (feeling threatened by traffic/fitting in with the prevailing social norm of how a cyclist is attired) and instrumental (keeping warm and dry on

cycle rides/lighting which helps you to see whilst riding) factors. I have

endeavoured to highlight where there may be such intersections in the analysis.

5.8 <u>Chapter Summary</u>

In this chapter I have outlined my research position, design, strategy and processes

and given a full account of how and what data qualitative were collected. My two

data production locations, Bristol for the extensive pilot study, and Cardiff for the

main phase, are given some contextual background and their selection is justified.

The novel nature of the methodology comprising semi-structured individual

interviews and linked social reference focus groups (SRFGs) has also been

articulated. Issues and challenges inherent in such a strategy; participant

recruitment, reflexivity and ethical concerns, are described. Finally the steps taken

to prepare and begin the analysis process are summarised. Chapter Six, following,

contains the gender and cycling results and discussion.

Chapter 6:   Gender and Cycling Findings

6.1 Introduction to gender-related findings

In this chapter I will outline the results from this research which relate specifically to the gender-related aspects of cycling mentioned by my research participants. Firstly I describe how I conducted the gender-based analysis, using thematic analysis, a well-known and flexible technique for qualitative data analysis (Braun and Clarke, 2013). A brief restatement of my theoretical stance adopted in this thesis will also be provided. Two cycling profiles are then given as brief illustrations of the diverse range of people interviewed and the enjoyment and challenges they faced as part of their cycling trajectories. These are intended to provide a more immediate and human dimension to the cycling stories I have analysed in the following sections.

The presentation of the results is divided into five sections; Affective Barriers, Affective Enablers, Instrumental Barriers, Instrumental Enablers, and Gendered Aspects of the Cycling Experience. These sections form the themes of my analysis as they relate to gender; further themes are explored in the next Chapter, Seven, which provides the study results relating to social influence and cycling.

As described in Chapter One, my primary interest in this research is the way in which gender impacts on people's willingness to cycle and whether (and how) those that do take up cycling socially influence others through the social domain. Such behaviour may have the potential to create a 'virtuous circle' whereby those who

take up cycling encourage others to do so; over time creating a significant transport and cultural shift, which promotes greater levels of walking and cycling (Avineri *et al.*, 2010; Sherwin, Chatterjee and Jain, 2014). My research design, which was detailed in Chapter Five, involved an innovative qualitative methodology, and took place in Bristol and Cardiff from Sept 2010 until May 2011.

The next section contains a reiteration of my research questions and interview questions, as they relate to the gender related aspects of this project. See Section 1.4 for my aims and objectives, if required. The gender-focussed literature review in Chapter Three explored previous research from the transport and health fields, and more specifically, gender and cycling. With my research design I attempted to find the most appropriate way of answering the research questions below; in this case I decided that a qualitative approach using in-depth interviews, and social reference focus groups was the most fitting (see Section 5.3).

RQ1. In what ways do men and women perceive barriers to using cycling as a mode of transport for both commuting and leisure needs?

RQ2. To what extent are there gender differences in the ways in which social influence operates on participation in cycling?

The research questions were answered in two ways; firstly by asking two direct questions:

1) Were there both boys and girls cycling when you were growing up, did you notice?

2) And do you think there are differences in gender when it comes to cycling? I mean from when you've talked to men and women about cycling, or when you see people cycling do you notice differences?

These questions related to gender and cycling in the interviews and focus groups (deductive). Secondly, b) via inductive coding of all of the interview data. The questions were amended and refined during the process of the Bristol Pilot Study, my initial data gathering exercise. This chapter focusses on the results relating to RQ1, whilst the results applicable to RQ2 are given in Chapter Seven, the following chapter. For an explanation of my theoretical standpoint relating to the study, see Section 5.3.

6.2 Explanation of data analysis process

After reviewing the different types of qualitative data analysis available I concluded that thematic analysis (TA), due to its flexible approach would best suit my research design. Thematic Analysis is not wedded to a particular theoretical standpoint, and therefore it fitted well with the exploratory, emergent nature of this research study. The detail of narrative inquiry or analysis (NA) and discourse analysis (DA) with its sociolinguistic approach, was incongruent with the approach required for this research. Similarly, Grounded Theory, with its emphasis on generating new

theoretical insight from research findings, did not concur with the principal aims of this research. A detailed description of how the data were prepared for analysis is given in Section 5.7.

I elected to use solely the Cardiff Phase 1 data to answer the gender related questions, since I had developed and expanded my questioning between the two phases, meaning there were difference in the data batches. The SRFG data were used to answer my social influence questions, as detailed in Section 7.1. The initial coding list was expanded and refined as I progressed with the work of coding all of the Phase 2 interviews. All of the transcripts were separated by gender into two batches of coding, so that free nodes contained all of the coding from male participants and tree nodes contained all of the coding from female interviewees. A total of 172 codes were generated (see Appendix 16) after checking, refining and merging some. These were then amalgamated into five final themes for the gender analysis: Affective Barriers, Affective Enablers, Instrumental Barriers, Instrumental Enablers, and Gendered Aspects of the Cycling Experience. From these five themes I selected a number of sub-codes which illustrated some of the key issues contained within the theme; which forms the analysis review below.

6.3 Cycling Profiles

The following cycling profiles are here presented as an introduction to the data; they are snapshots of an interviewee's cycling history. Their purpose is to bring the

'human' perspective to life, as the voices of the participants may be diluted in the thematic analysis process.

6.3.1 Cycling Profile 1: Greta Mayer

Interviewee 23: Greta Mayer Female Age 55 Almost daily cyclist (currently)

Income: £10,001-£20,000, Former Teacher (now unable to work due to disability)

Greta, who is a lifelong cyclist, now in her 50s, perceives cycling as a way of re-claiming some freedom in a life which includes more constraints due to disability. Before becoming ill she used to cycle around 7,000 miles a year, and still cycles when she can, and occasionally goes on cycling holidays (accompanied by carers).

Greta first started to cycle when she was five, and was able to ride a bike fairly instantaneously. But she had to wait until passing the eleven plus exam, like many of her contemporaries, before she was bought a bike of her own as a reward. After this she used her bike to ride to school every day and for leisure rides in the country, often exploring by herself as many of her friends were not as adventurous. She has never driven and so when she cannot cycle will mostly use public transport, with the occasional lift in a car. Her enthusiasm about cycling and the benefits she feels it gives her has persuaded her carers to all take up cycling also.

As a person who has had a complicated and fluctuating disability (Rheumatoid Arthritis) for over 20 years, Greta has a unique insight into the difficulties of navigating cycling with a disability. She has experienced problems both with her cyclist and her disabled person identities in relation to one another. She has found that people often expect her to be unable to ride as she has a disability, and therefore see her as 'not really disabled' when she does. On the other hand, when going out on group rides with other cyclists, they also assume that she has no disability because she cycles, and even when specifically asked have

failed to provide assistance when it was required, such as help queuing for a drink at refreshment stops as this is difficult for her.

Greta has also needed to adapt her cycling behaviour in terms of equipment due to her disability; changing from an ordinary road bike to a petrol-motor-assisted bicycle (imported from Holland) and then more recently to an electric bike once they became available. At one point she even had to obtain special dispensation from the then Secretary of State for the Department of Transport, Sir George Young to be allowed to take the petrol-motor-assisted bicycle on the train, due to safety concerns over their use. Greta has found that cycling has enabled her to still feel as though she is a fit, able-bodied person and it has remained an important part of her identity throughout her life.

6.3.2 Cycling Profile 2: Jan Heller

Interviewee 30: Jan Heller Female Age 82 Almost daily cyclist Income: £10,001-£20,000 Retired home-maker

Cycling has been a key part of Jan's life, since she was a girl learning to ride a bike. When she joined the Land Army at the age of 19 she used her bike to get from farm to farm. She so enjoyed this experience that when she afterwards had an office-based job, she decided to join the CTC (the national cycling charity) to encourage further cycling, where she later met her husband. Jan went on to raise four children, all of whom cycle, so cycling has clearly been an important part of her life.

With the CTC Jan did many long-distance rides, including 8, 12 and 24 hour rides and a 240 mile ride, often she found she had stamina enough to keep up with or beat many of her

fellow male riders. Jan even used riding her bike to try and induce her labour – riding over potholes when due to give birth to her daughter.

After moving to Barry which was hilly and inhospitable for cycling, Jan did not ride regularly until moving to Dinas Powys in 1999. The flatter and easier conditions encouraged her to cycle again, and when someone wrote to her reminding her that it was 50 years since she had completed a road record from Cardiff to Aberdare she was happy to take on the challenge of repeating it, aged 72. As well as completing a number of other challenge rides during her 70's, including the London to Brighton ride, Jan has also ridden every day in the area around her home, for the last few years. Often she would ride late at night or early in the morning, when she was busy at other times of the day, to ensure that she could stick to having her daily ride (up to 12 miles).

At the age of 76 she was given a new bike by one of her sons with a few additions such as shock absorbers, to make it more comfortable for her to ride, and she is still riding this aged 82. Jan shops by bike and enjoys her regular rides for health and leisure around the area. She felt she would cycle even more if there were better facilities locally, as she often does not feel safe on nearby narrow and winding roads with the additional hazard of overhanging vegetation and drain covers.

The findings from the five themed gender sections are now presented, with quotations from the participants presented in text boxes and associated discussion and analysis before and after them.

6.4 Affective Barriers

Some of the key barriers mentioned by both genders are described below, these codes were grouped together under the theme Affective Barriers.

6.4.1 Aggression

Aggression was mentioned by several (8 male & 3 female) participants in a variety of different ways. Aggression might be between modes; such as conflict between walkers and cyclists sharing a path which is not wide enough or not clearly delineated. Or it might be within mode; whereby different cyclists who have adopted different cycling identities irritate each other. Specifically when mentioning it in response to my initial gender related question several responses related to a usual perceived/actual higher level of aggression on the part of male cyclists compared to females. The three responses below illustrate the sentiments which were expressed by some participants around cycling and aggression levels. As this was not a specific question topic, many participants did not mention it.

Interviewee 5: Paul Baker Male Age 36 Daily cyclist

"Yes. I think the... I think male cyclists tend to be a bit more aggressive in their cycling behaviour. They probably use a bike more like a car. Whereas I find with my wife, for example, she'll avoid certain situations and go on to a footpath instead of dealing with a situation and putting herself in the traffic. So I think that's the main issue."

Interviewee 17: Peter Stein Male Age 52 Daily cyclist

"And I've been to the cycling show this year again, and much to my surprise, I went two years ago and the thing I really came back with it was all about testosterone and speed and, and I thought maybe in two years' time it has changed, there will be a bit more of the contemporary bikes. But no, the only difference was there were electric bikes, mainly more electric bikes, but it was still the kind of testosterone stuff. Have you been to London recently? I went half a year ago and I just thought these people are crazy, the way that they cycle is as if they are all the time in race. If you go to any of the countries on the Continent that would not be the case - people do not cycle like that."

Interviewee 26: Carol Jessop Female Age 65 Daily cyclist

"Yes, well I think on the whole men are, there are more of them because they are more confident. I think some women are a bit diffident about it because I think it's not for the faint hearted and you've got be assertive and I am. So for somebody, I was cycling down Clare Road and I didn't realise that there was someone from the running club behind me and a week later he said, 'Do you own that street', he said 'because it seemed you were by the way you were cycling down it', because I will just put my arm out and just cross, I mean I'm careful, but I'm not afraid, so that makes it safer I think, if you are aggressive."

The quotes above describe the level of aggression which they perceive is present or indeed needed in the dominant mode of cycling. Paul states that his wife (and by extension other women) are more likely to remove themselves from perceived dangerous situations when cycling (usually fast and/or heavy car traffic on roads they are using), by using pavements or other routes away from traffic. Interestingly Carol describes how she behaves in a typical 'male' (or an 'atypical' female) aggressive fashion of cycling because she believes it to be safer. Here is a direct example of an adaptation to the existing dominant cycling culture. The inference here is that to survive in this hostile environment an aggressive/macho male stance is a prerequisite. Such perceptions also echo the discussions about styles of cycling, such as vehicular cycling, and what is a 'good' way to cycle in traffic, as discussed in Section 2.2. I also return to this topic in more detail in Section 6.8.2. Peter discusses his experiences of attending a cycle show and how orientated he felt it was to "testosterone and speed", as well as the dominant way of cycling in London, which he perceives is all about speed. Since Peter grew up in Belgium, he is familiar with cycling styles there and compares the easy pace of much cycling that he is accustomed to with that in London.

The 'gendering' of cycling style into male (confident/aggressive/assertive) and female (diffident/unconfident/unassertive) may reflect dominant sexist norms about how men and women are expected to behave in our culture. Such norms have been challenged by some researchers, who argue that such differences are not innate but a product of our socialisation and that there are no distinct innate gender differences in personality or traits (Fine, 2012).

6.4.2 Hostile environment

A related code which had quite a few responses (12 female and 7 male) was hostile environment, which encapsulated the general sense that cycling often involved entering harsh or unfriendly spaces and that cyclists needed to be prepared (mentally and physically) for this. The nature of the perceived hostility varied on a continuum from the need to be vigilant when cycling (Kris, Int. 14), through to the fear felt by both Nat (Int. 15) and Eva (Int. 28), to Anne's (Int. 18) sense of it being a conflict or battle.

Interviewee 14: Kris Brampton Male Age 58 Daily cyclist

"I found the motorcycle training quite useful actually in terms of cycling because apart from having the skills of you know positioning, observation, all of these things. You know you are a vulnerable road user, and you have to be in a, prepared to negotiate your space quite a lot. So many drivers I am afraid, especially in the city, they are just following the previous car and they are not even looking around them very much, and it's not enough for a cyclist to do that. You can't just put your head down and cycle."

Interviewee 15: Nat Winter Male Age 56 Almost daily cyclist

"That's not to say that I spend, I mean most journeys there will be at least, I mean I know it's probably a reflection of my nervous and unemphatic, non-assertive character, but I feel threatened a lot of the time. I live my cycling life in a lot of fear, but I think that may be not too bad a thing actually. I will get at least, I seem to get at least two or three you know scary experiences on each journey."

Interviewee 18: Anne Sully Female Age 41 Almost daily cyclist

"I think that even where there's provision on street the lanes don't link up and there's no, or there's very, seems to be little enforcement of any parking restrictions, which we know there are always parked cars which means that the lanes are more hazardous than they would be if even if they weren't there, so yes lots could be done, and I think lots being done. I know there's a parking, cycling strategy that's being developed and things, but we're not there yet. I wouldn't say it's a particularly safe city to cycle in, and I'm just happy to be I think one of the crazy few that's prepared to battle against the odds, so yes mmm."

Interviewee 28: Eva Grainger Female Age 61 Once a week cyclist

"…Yes, you do see people cycling around and I always fear for their safety, to be honest, and they probably fear for their safety as well. But there's just no cycle lanes. And our traffic is getting worse and worse. You know? You can hardly get out of the junction on Hinton Road. And now they haven't got any more traffic wardens in Penarth. People park everywhere. It's just crazy."

It is interesting to note that all of these participants were older, experienced cyclists who had cycled since childhood (though not necessarily continuously). The sense of alarm and worry which they feel cycling in more difficult areas of the city has not been alleviated by their years of experience. This would suggest, as discussed in Section 2.2, that feelings of competence and confidence, are not as some argue purely down to experience, but rather are things which may fluctuate for many cyclists, depending on the particular circumstances which they encounter at any one time. It is also possible that one may be experienced and yet still be continually worried about cycling in traffic, or even that this level of nervousness might increase (as a result of a difficult or frightening experience like a collision for example). Two participants mentioned the word crazy; Anne when describing herself as crazy for cycling in the current conditions, and Eva, who uses it to characterise the general environment for cycling in Penarth. 'Battling' against a

hostile environment was another evocative phrase which captured the feeling of a

'war' on the streets between the different users.

Nat, when describing the level of nervousness he often feels when cycling, feels as

though he must apologise for stating this, as though this is a 'non-masculine'

attitude.

6.4.3 Appearance, presentability and gender roles

This theme explores differences in perceived societal expectations about men's and

women's dress and appearance and how this can relate to their cycling behaviour.

The need to appear attractive and smart, particularly in a work context, clashed

with cycling; especially in certain weather conditions or if cycling fast. This pressure

appeared to be greater for women than for men, according to some of the study

participants.

Interviewee 4: Catherine Collins Female Age 39 Cycles 2-3 X a week

"But I just kind of thought that there is such huge pressure on women to conform and look a particular way and whatever and that's just... it's kind of, you know, repeated in cycling I think. You know? In terms of the kit that's available to you and the kind of type of information that websites make available to you and stuff. You know?"

Interviewee 7: Connor Mason Male Age 31 Cycles 2-3 X a week

"...I think there is a slight difference, again I picked up, perhaps from my girlfriend, for example an expectation perhaps that from society that, well not an expectation, almost it's like I can turn up to work with my hair in a mess and look in a right state and maybe, you know, a little bit hot and bothered and sweaty and somehow I think that I can get away with it more being a bloke, if that makes any sense. I know for a while I was like seeing my girlfriend, especially after she had a like near miss, please wear your helmet and one of the reasons she reluctantly admitted was oh but my hair, and it looks stupid type thing. So I think there is an element that a female maybe has to do a bit more with resisting social norms than a bloke does. Does that makes sense?"

> **Interviewee 24: Josie Ziller Female Age 34 Daily cyclist**
>
> "I personally think there shouldn't be any difference but, you know, what you're saying in a society, yes, you do see differences because it's still sort of stereotype women. But the weather, you know, people are put off by the weather quite a lot, maybe, especially women if they've got make up, things like that, you know, they dress up nicely in the morning going to the office and then if the weather's not very nice they have to get changed, things like that, but yes I think there are differences I think in this country. I'm not saying this country is still quite sexist but it's more sexist than where I come from (China) I think, the social roles are still quite, sort of clear boundaries."

The aspects highlighted in these three quotes describe how men and women feel they are supposed to look and the high expectations they perceive are placed especially on women to look 'attractive'. Therefore, the social norm surrounding this expectation may clash with cycling, which, depending on the weather, speed, and clothing options chosen could result in a less 'well-groomed' appearance. Dealing with this aspect of work life as a person cycling, was sometimes complicated and changed depending on the seasons, work responsibilities, and often peoples' personal thresholds of accepting less than ideal conditions.

Women and men in this study both described how women might feel the need to spend more time on personal grooming after their cycle commute, to feel prepared for work. Some women were aware of such conventions but stated that they themselves did not worry about them. Some male participants did not invest as much into this aspect, as Connor describes above, he felt he could 'afford' to spend less time on personal grooming without social censure. Men from the study noted that they would wear a cycling specific outfit and then just change into a shirt when they arrived at work. However, this aspect of grooming may also be tied into one of the dominant cycling culture norms in the UK, which depicts cycling in the

sport/exercise camp. The desire to cycle fast and competitively, and so be sweaty

afterwards, is not an innate characteristic of cycling, which can be practised at many

levels of intensity.

In countries with higher levels of cycling this aspect is less significant and both men

and women are much more likely to cycle in their regular attire at a fairly slow and

comfortable pace (Pucher and Buehler, 2008). In this model cycling is more attuned

to walking than running and the level of exertion lower, meaning people do not

have to shower, wash their hair, re-apply make-up or even get changed. Efforts to

achieve a cycling culture which is less attuned to sports and competitive cycling

could therefore help to alleviate some of the need to spend more time on

appearance and grooming related to cycling, which would especially help women to

navigate these two sometimes conflicting factors.

The desire to be feel presentable at work did not necessarily mean showering,

although this was important for some. Other participants described how they

would just change their clothes (with or without a wash), but may also need to

spend time on hair and make-up (using straighteners for example). Those who did

regularly shower (3 men and 2 women), and those who washed and changed (2

men) did say that having access to these facilities was important for their continued

cycling. Those who changed clothes (5 women and 6 men) sometimes wished to

shower but could not, or did not want to shower (cycle ride short so not needed, or

were uncomfortable with unisex shower facilities). Others wanted to be able to

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shower, or have better space for storage of clothes/drying of waterproofs, but did not have any facilities. For some whilst the facilities were technically there, they were deemed inadequate and so not used. Overall these patterns were quite subtle and did not show a distinctive preference for a particular way of being clean/presentable or ensuring an 'attractive' appearance.

A greater emphasis was placed by both genders upon women needing to look 'good' or 'professional' in the work context, but no one particular way of doing this was identified. Rather different people, depending on their cycling style, length of route, season and weather wished for different levels of facility to enable their cycling. This might be showers/areas to wash and change, lockers or desk space to store clothes, toiletries, towels and make-up, and an area to dry wet clothes/waterproofs in case of bad weather. Some participants also described how they might not use a particular facility all the time, or even regularly, but would if the circumstances required it, or if they themselves liked to vary their patterns of changing and washing. The importance of having showers or other cycling-specific changing facilities in the workplace has been questioned, and it is argued that only current cyclists use them, rather than encouraging more new cyclists (Melia, 2015). However, whether or not this is definitively the case, from the evidence of this research it may still be of importance for those existing cyclists, in terms of them cycling at all, and in terms of extending their cycling range to different seasons.

6.4.4 Accidents, collisions, abuse and bad experiences

This theme describes the difficult experiences which men and women have encountered when cycling and their responses to it. The most striking impression of the statements in this theme is the regularity and often seriousness of the experiences and yet how resilient (able to bounce back from a negative experience) the participants have been after them. All of these people are still cycling, though in some cases they had altered the frequency or manner of their cycling due to their experiences, and of course such experiences may have affected them emotionally. Some researchers focussing on resilience have, however, emphasised how every day and unremarkable resilience is, and how many people have it. Masten (2001, p.227) claims that: 'the great surprise of resilience research is the ordinariness of the phenomena. Resilience appears to be a common phenomenon that results in most cases from the operation of basic human adaptational systems'. Whether indeed such traits are widespread and normal, the amount of incidents people experience is notable.

Interviewee 1: Adam Jessop Male Age 38 Almost daily cyclist

"AJ: Yes I got chased and attacked last year (by several men in a car).

AD: Really?

AJ: Punched, yes, chased from town, it was crazy and the police managed to arrest me afterwards… for touching their car …"

Interviewee 4: Catherine Collins Female Age 39 2-3 times a week cyclist

"I've only ever really had one unpleasant incident that I actually reported to the police and I don't know if anything ever happened to it but I thought it had overstepped the mark between something that is just a really poor sense of humour and something that's gone too far. And I came back from a training ride, came back into the town centre and I had a car that was really forcing me into the gutter. They were driving so close to me. And it was

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a group of boys and they had the windows down and the passenger was actually encouraging the driver to drive really close to me so that they could actually touch me. He was trying to grab my bum, basically. And I was clipped in (fixed into the cycle pedals)…and I was just thinking if my wheel clips either the wheel or the car, I'm going to fall into the car."

Interviewee 11: Viv McKinnon Female Age 49 Almost daily cyclist (summer only)

"So yes I was trying to go straight on and I could feel this guy tailgating me, I thought he's going to turn left I know he is and so I caught his eye and said I was going straight on, he just sort of came and went round me like that and I nearly went into the side of him, I just thought oh. He stopped the car and went you idiot, I said hang on a minute, you've got to give way and then he called out and he followed me, I thought oh god he's going to run me over, he didn't, I sort of sped off and managed to cut through but yes."

Interviewee 21: Joan Christopher Female Age 27 Daily cyclist

"…Lots of the time motorists make it feel like you're in their way and it feels scary. So you know having cycle lanes and actually sort of giving a women some information about how they should cycle because they still, I think they get a bit scared. I mean I've had a guy like a few times scream out the window at me "stupid b***h" and things like that and like using the woman thing as a negative, a woman on a bike."

Interviewee 25: Murray Barrell Male Age 52 Almost daily cyclist

MB: I had a bad accident 3 years ago…I was knocked off the road by a car on my way to work.

AD: Right. And is that where you had the wrist injury?

MB: No that was a result of an accident many years ago…Fractured ribs, yes. It didn't put me off, I got back on the bike as soon as I was able to, but.

AD: And did that experience, was that a frightening experience or did you…

MB: Yes it was very frightening. Yes."

Interviewee 30: Jan Heller Female Age 82 Almost daily cyclist

"Well I thought they were picking on me but evidently it's not just me because other people have had the same thing. I can be riding along and it's really dangerous, you've got hardly any room and as a car passes you, somebody leans out so their practically touching you and they yell at you, they scream and yell obscenities at you and it's enough to make you go under the car. And I thought it's just me because I'm old, but no they do it to other people as well, youths, youths shouting."

The categories of issues or problems which participants faced are: accidents (falling

off their bike), collisions (impacting with another animal, person, cyclist or motor

vehicle), abuse (verbal or physical assault), and other difficult encounters. All of these could be experienced by men or women, but as discussed in Section 3.8.2, women may be subject to additional forms of abuse and/or sexual violence which men are not. Some of the incidents, particularly Catherine's (Int. 4) and Joan's (Int. 21) may be unlikely to be experienced by males in quite the same way.

There were also some counter-veiling voices, who either had not had any accidents, collisions, abuse or bad experiences, or believed that some instances were inevitable over time and so not anything too serious. Kris (Int. 14) takes the viewpoint that many cycling/motor vehicles collisions are avoidable, not by the motorist taking more care but by the cyclist taking more care. Peter (Int. 17) seconds this in his excerpt, when he describes less confident cyclists as "putting themselves in danger" with their lack of assertive/aggressive cycling. This is particularly interesting in Peter's case as he grew up in Belgium which has higher levels of cycling and better facilities, and yet still adopts a similar perspective. These comments have overtones of a 'victim blaming' (Durham, 2013) perspective, and can be seen within other sections of cycling culture, with the discussion around cycling and PPE (for example cyclists not wearing helmets or hi-vis). Nat (Int. 15), after 40 years of cycling, feels fortunate to have not had more incidents, and only one of these involved another vehicle, since the other two were falls from the bike in ice and snow.

Interviewee 14: Kris Brampton Male Age 58 Daily cyclist

"Yes. I find I don't, I haven't had many experiences of been knocked off my bicycle. I have had one or two but nothing serious. You hear people are saying you know, oh I collided with a car door when somebody threw it open. I don't want to be critical of them, but I would say don't get into that position of, if you can possibly help it of being caught having a door thrown open in front of you. Similarly you know a car turning left in front of you at junctions you know. If you go down the side of a large vehicle you know they are not necessarily going to see you, you have got to be you know, out in the middle of the carriageway."

Interviewee 15: Nat Winter Male Age 56 Almost daily cyclist

"Yes. Mercifully few and far between. I mentioned earlier actually that I actually came off on the ice yesterday. Which was, I came off remarkably lightly actually, considering that the bike actually disappeared from underneath me. Previous to that, I know how long ago it was, because it was just after my daughter was born, 24 years ago. Again, cycling in snow I managed to come off and broke my arm on that occasion. Apart from that, when I was in London cycling, well it was from Hampstead into the centre of the city, on one, again it was probably one of the reasons why I've never been very keen on cycling at night, I had a motorist come out from a side turning straight into the side of me and sent me flying. But considering the length of time that I've been cycling, I mean touch wood. So I think I've been fairly fortunate."

Interviewee 17: Peter Stein Male Age 52 Daily cyclist

"I don't think she will do that she's not that confident as I am. But my wife isn't either, a lot of people aren't. You know I am very confident in cycling, and I just take control of the roads, and anybody who's behind me has to wait, I don't care. But a lot of people, they are nervous and hug the edge of the road and get themselves in danger. When she goes to college she goes on the Taff Trail and then goes mostly off road so she's not a very confident cyclist."

6.4.5 Traffic and safety

Traffic and safety issues had the largest number of responses of any code in this theme, both from men (17) and women (15), although this related to all aspects of the topic, from feeling there were few issues in this area to having comprehensive problems. The difficulty which many people face when cycling was apparent, both

in terms of direct complaints about the lack of sufficient infrastructure and wider

conditions for safe cycling, but also in a more indirect way – in how people changed

their behaviour to try and mitigate for the lack of such facilities. The quotes below

illustrate this aspect very well. Many people, when asked about how they found

cycling in Cardiff in general would have an initial positive response, such as Joan's

(Int. 23) below. However, shortly afterwards they would mention the dangers they

felt were inherent in the cycling experience, such as "it's a little bit hairy for most

people". When discussing such feelings they may be projected onto others as a

distancing mechanism, rather than being owned as direct feelings or thoughts of

the interviewee, as in Joan's comments below about others getting 'freaked out'

(Fleiter, Lennon and Watson, 2010). Some people felt there were clear and

identifiable differences in provision for cycling in different areas, such as Sarah's

(Int. 31) comments about the differences between Cardiff and Penarth, which

although neighbouring have quite different demographics and characters.

Interviewee 20: Fritha Doherty Female Age 51 Once a week cyclist

"Well it's lovely because it's nice and flat, but in terms of safety on the road it's pretty poor I would say. There's not much in the way of cycle lanes, although I appreciate that with the road infrastructure already there's not much that can be done about that. But it can be annoying and you see those useless token 200 yards or metres of cycling lane that just stop."

Murray (Int. 25) describes a behavioural adaptation to facilitate feeling safer when cycling – making his morning commute time very early when the traffic is very light and therefore making the commute less hazardous. So part of some of the participants cycling experience is to pick particular routes which are of preference to them for reasons of: safety from traffic, speed, attractiveness, convenience or personal safety. Another adaptive behaviour is to choose to cycle at times of day when the traffic is least heavy to improve perceptual/actual safety. Clearly the use of various kinds of clothing/helmets/lights, all described as PPE (personal protective equipment) can also be seen as a form of adaptive behaviour to the cycling environment. Parkin et al.'s (2007) study using risk models to predict the acceptability of different types of cycling infrastructure found reduced perceived

risk in traffic-free conditions, but not from unsegregated bike lanes on the road. However, research assessing how individuals adapt to existing roads and cycling infrastructure is rare.

Having presented and discussed the findings under the Affective Barriers theme, I will now move on to talk about the more positive side of cycling for the participants; Affective Enablers.

6.5 Affective Enablers

This theme captured the emotive aspect of factors which encouraged and enabled people to take up or continue cycling.

6.5.1 'Outdoorsyness'

One of the codes which generated a large number of comments from both men and women regarding their cycling was 'outdoorsyness'. This code captured people's descriptions of their enjoyment of being outside whilst cycling, and their experiential sense of encountering the weather, scenery, the cityscape and interactions with others in the travelling landscape, whether that be other cyclists, pedestrians, drivers and others. The importance of being outside in a natural environment to mental and physical well-being is well documented (Ward Thompson and Aspinall, 2011) and cycling is one means for people to achieve this

connection regularly. There was no distinct gender difference in this area with both

male (12) and female (12) participants mentioning the importance of the natural

environment as an aspect of their cycling.

The sense of escape and freedom which cycling can afford, especially for those

living in an urban environment, is described by Nina (Int. 8), together with her wish

to provide this for her family. The combination of different pleasures associated

with cycling outdoors is depicted by Nat (Int. 15); the enjoyment of moving 'under

your own steam', the interaction with the environment and the pleasure of being

outside, particularly when the weather is warm and dry. For Greta (Int. 23) cycling

encapsulates a sense that she can still feel 'alive' and 'able-bodied', despite a

sometimes debilitating disability. So for many participants, the being outdoors, in

the fresh air, was an integral part of the cycling experience. Jan (Int. 30) was

offered an indoor exercise bike but she declined it on the grounds that she

preferred to get out and about in the fresh air.

Interviewee 8: Nina Shaw Female Age 40 Almost daily cyclist

"It's taking in the environment actually, I cycle in most mornings and there's fantastic sun rises, it's just really nice and you just see, because it's fairly early morning you see all the wildlife and it's just really quiet and peaceful once you get off the main roads obviously. It is really enjoyable just being out in nature and I think that's probably why I want to take my children and family out because it is, we're not completely mad about nature but it is nice to be out in it, you kind of live in a city, when we used to live in Suffolk it didn't take long to be in the countryside whereas in Cardiff it takes a little bit longer to get out and really find somewhere that you could class as countryside. You kind of get that when you're on the Taff Trail, bits of it so I just want the kids to experience some of that as well and not just the whole urbanised feeling all the time, because we do miss that from living in Suffolk to be honest."

Interviewee 15: Nat Winter Male Age 56 Almost daily cyclist

"There is certainly a sort of pleasure of the idea of moving from A to B more quickly than one could in other ways and there are... I mentioned about this piece of writing I mentioned earlier there is certainly something about the way one interacts with the city. If you're in a car you're insulated from it whereas if you're riding a bicycle you connect with the topography of the city in a far more interesting and complex way. And hmm it's something that of course one does as pedestrian as well but on a cycle there is more of it in that you encounter a wider variety of locations in a shorter period of time so I think that certainly has something to do with it. And there is a certain sensual pleasure on a fine bright day the cool breeze and that sort of thing which hmm I'm not besotted with the technology of bicycles and all the rest of it but I think there's a pleasure as well in just the sense of mechanical motion too. So I think all those things are positive things which I would say are part of the cycling experience."

Interviewee 23: Greta Mayer Female Age 55 Almost daily cyclist

"So, yes, I mean it's just being able to get somewhere by your own steam and feel, you know, that you're still a fit, able-bodied person, which the bike enables me to feel. So yes, moving, moving and breathing and everything, you know, it makes me feel fit and strong and alive. So, you know, that is the most important part of it, I suppose. And then the bonus of course is then if you can breathe fresh air and see lovely scenery, and also get the things done that you want to get done in that way. You know? It's all good. (laughs)"

Interviewee 30: Jan Heller Female Age 82 Almost daily cyclist

"Well I love the fresh air, because sometimes I'm trying to get out and I'm trying to get out and it's been a lovely day and in the end it's practically dark and I haven't been out and I think well it's so stupid of me, but it's the fresh air I love and one day an old chap called out and stopped me so I went back and he said, 'I've got one of these cycles to go in the house, I just haven't used it, and it's taking up room, I wondered if you'd like it, I see you cycling around every day'. I said, 'well to be honest I want to be out in the fresh air, I don't want to ride this thing in the house, I love being out in the fresh air."

6.5.2 Achievement

The theme 'achievement' captured the sense, expressed by some interviewees, that their cycling felt in and of itself an achievement. For some this related to a physical challenge, others it was more of an emotional or psychological challenge, but the end result was a feeling of achievement and an increased sense of self-worth. Fairly

equal numbers of men (5) and women (6) mentioned this sense of achievement as a

factor linked to their cycling. The quotes below epitomise this affective enabler.

Interviewee 3: Matthew Ford Male Age 53 Almost daily cyclist

"Err, well for work purposes I suppose it's, well it's actually the exercise and the fact that, erm, yeah, it's the feeling good from the exercise. Cos it's, you feel a greater degree of accomplishment cycling. I mean, if you're out for two hours on a bike, you've covered a far greater distance than if you're out walking for two hours. And you're probably doing far more exercise than walking I think."

Interviewee 14: Kris Brampton Male Age 58 Daily cyclist

"KB: Right, well it's very convenient. It provides good exercise. It's enjoyable on the whole and yes it gives, it makes you feel good."

AD: And what do you find most enjoyable about it?

"KB: Actually I find the exploring new places is especially good, going on challenges of cycling up and down places which you know can be quite challenging. I think I am known in the Cycle Cardiff Group as somebody who likes to climb hills and fly down hills."

Interviewee 26: Carol Jessop Female Age 65 Daily cyclist

"The freedom that it gives you and I like on the rides I do at weekends or the holidays, the challenge, the challenge of tough hills, because I've always been a tomboy so you know it's like that with running as well. So that's very much you know doing 85 miles of you know up the Beacons, it's the longest ride I've done in the Beacons but you know coming back completely exhausted and the reward of a beer."

Interviewee 31: Sarah Saunders Female Age 61 2-3 times a week cyclist

"Yes, no I think it's time and having the right kit and you know, being prepared to put yourself through it really because it can be, you know, it's challenging, it is challenging every day, you know, it's going up that hill at the end of the day is always a challenge but it's always worth it. I mean I think perhaps making more of how good you feel when you have cycled I think, you know all the people that I speak who are regular cyclists, that's why they do it you know, even the mad guy in the campaigns and so on you know, he does it because it makes him feel great. I think that's something that perhaps gets overlooked you know."

Matthew (Int. 3) describes his sense of accomplishment from feeling as though he is getting more exercise on a bike than he would from walking, over the same length of time. Kris (Int. 14) describes how his identity as a member of the local cycling group is bound up with being someone who enjoys the challenge and sense of achievement from 'conquering' hills. Similarly, Carol (Int. 26) relishes climbing hills and states how she rewards herself for the exertion of the ride with a beer. Sarah (Int. 31) suggests that this sense of challenge/exercise and then the feeling of accomplishment afterwards is the main reason why people cycle, and that this aspect goes unrecognised. The 'feel-good' factor of exercise, often attributed to the release by the body of endorphins which may then increase positive mood, could be being described here (Dishman and O'Connor, 2009). But for some, an additional status factor (Burke, 2008) seems to be involved, whereby having the identity as someone who is 'fit', 'tough' and can 'tackle' hills is significant for them. This links very closely to the next code, Health and fitness.

6.5.3 Health and fitness

Allied to the sense of achievement, was a sense for many of the participants that they were helping to keep themselves healthy and fit by cycling. This led to positive feelings about the activity and about themselves for partaking in it, therefore it was placed in the affective enabler theme.

Interviewee 16: Linda Cutler Female Age 42 Almost daily cyclist

"It's a way of getting exercise as well and it's a means of exercise five days a week, half an hour and an additional effort which means I can drink more wine and eat more food."

> **Interviewee 26: Carol Jessop Female Age 65 Daily cyclist**
>
> "It certainly wasn't for health reasons that I took up cycling, it was more for environmental reasons and lack of facilities. The health thing I didn't feel I needed that because I'm a running nut anyway so."
>
> **Interviewee 28: Eva Grainger Female Age 61 Once a week cyclist**
>
> "Well, it's just the pleasure of exercise. I mean the fact to do outdoor exercise is just so pleasurable I think I don't feel like going but I love it when I'm out in the fresh air. And yes, that's mainly it. I feel healthy and you feel good for it and you feel good after it."
>
> **Interviewee 34: Finn Jennings Male Age 64 Cycles 2-3 X a week**
>
> "At present for leisure. I don't know if you've gone along the coastline here, but it is absolutely stunning. I don't do any other exercise, so it suits me fine. As you can see I'm fairly well fleshed, so I need to do something."

There was a wide range of styles of thinking about the cycling exercise which people undertook; for some it was their only form of exercise, such as for Finn (Int. 34), who was retired and enjoyed regular leisure rides. For others, who were already very fit from taking part in other exercise, the health and fitness aspect of cycling was marginal. Carol (Int. 26), for instance, who was a regular runner, and had an extremely high level of fitness for her age, felt that cycling offered her little in the way of additional health benefits. For others, such as Linda (Int. 16), her cycling was perceived as a trade-off, enabling her to indulge in eating and drinking to a greater degree than she would have felt comfortable with without this regular exercise. Obviously how participants thought about their cycling as part of their own health and fitness regime, was largely related to the importance they personally placed on health, fitness and exercise. For Eva (Int. 28) her pleasure with the activity was a mixture of exercise and being outside (linked to code 6.5.1 'Outdoorsyness').

6.5.4 Enjoyment and fun

A large number of the participants mentioned the sense of enjoyment and fun they gained from cycling as an activity, which was not necessarily directly related to a sense of health and fitness, but more of a pure enjoyment factor. Partly this was related to more spontaneous cycles, often on attractive routes, such as through parks or out into the countryside. This code links to the other codes already discussed but seems to have more breadth, so being outdoors, achievement and exercise may perhaps be part of it, but do not capture the entirely of the sense of enjoyment which participants could feel when cycling.

Interviewee 2: Jenny Durrant Female Age 48 Daily cyclist

"Even today he said 'I'll take you tomorrow in the car' and I'm like 'I'd rather go on the bike' now because when you arrive at work you feel so energised and it's a satisfaction that you have come across there when normally you could be sat in traffic because at that busy time everybody is commuting, you feel more satisfied really, you think 'Yes I've done that' fresh air, and it's really lifted, you know, a few people have commented 'Oh you seem happy' and I say 'Well, I've just cycled to work'."

Interviewee 33: Max Siston Male Age 64 Once a week cyclist

"AD: So what would you say are the main reasons why you cycle?

MS: Oh. Sometimes just for enjoyment. If it's a fine day I thought I'll just go for a nice cycle ride. I might start off by just going round the park. If you go a bit further afield you have to plan it a bit. So partly for convenience. Ah. Partly for pleasure. Pleasure or convenience because the work thing has gone now. Pleasure or convenience."

6.5.5 Freedom

This code, which is related to the previous one about enjoyment and fun, sums up the sense of individual freedom which some interviewees expressed. The actual

definition of 'freedom' for participants was variable; time-out, psychological control or individual choice are linked but separate aspects of this code. For Connor (Int. 7) it provided him with a part of his day where he was free to just be by himself, but also paradoxically provided him with a greater sense of community by the closeness of the travelling experience through the city on his way to work. Spinney (2009, p.829) argues that this aspect of cycling as 'an embodied and sensory practice' is one which cycling researchers need to give greater importance to. On a bike and on foot, your travelling is often closer to and more interactive with your environment than it is if you are traveling in a car or on public transport.

Interviewee 4: Catherine Collins Female Age 39 2-3 times a week cyclist

"It's really nice being on the open road when there's not too much traffic and, you know, you're away from pollution and the city and, you know. Take some food with you. It's just kind of… it's the freedom and the lack of noise that I really like about it."

Interviewee 7: Connor Mason Male Age 31 Cycles 2-3 X a week

"Also in the morning to be honest, it's like, it creates a space for me to have time by myself and, a bit like the guy from Church said, you do have, somehow you feel a bit more part of everything instead of being, listening to the radio in a car in your little, there's something quite , not adrenaline but, yes there is that, an 'x factor' to cycling to work where it's like oh yes that sets me up for the day that does."

Interviewee 23: Greta Mayer Female Age 55 Almost daily cyclist

"I didn't have my own bike, unfortunately. I would have loved to have had a bike of my own. I had to wait 'til I was 11. But I had a little friend of a little friend who was the same sort of age as me had a two-wheel bike asked me if I'd like to have a go on it. And at that age, you know, you're very confident because you don't think of any dangers, really, and I was just able to get on it and ride it straightaway, you know, so it's almost I feel as if I was almost born on a bike. And that's really my medium. And my mother never had a car. My father died when I was a baby. My mother never learned to drive so, you know, for me, cycling really was freedom because that was the way I could get anywhere."

Interviewee 24: Josie Ziller Female Age 34 Daily cyclist

> "Most enjoyable about cycling it's still free and actually, mentally, psychologically, do you good if you go out on a bike you know. I'm not saying cycling in London is brilliant, I did cycle in London once but, again, I think it's a sense of freedom and you know, you plan your route yourself, you're not stopped by anything are you? You don't have any problem with parking or anything if you have car and as long as you have lights in the evening, have a bell and you know, police are not going to stop you are they? And so, that sense of freedom I think."

Interviewee 33: Max Siston Male Age 64 Once a week cyclist

> "But when I am out cycling, if I do go out to the city, then I enjoy it, and it's, you know, the old clichés about the air blowing through your hair and all that business and the freedom of the road and all that."

Women participants (9) mentioned freedom as an affective enabler to their cycling more often than male participants (3). The reasons why this is the case are not clear however. The sense of freedom related, for some, to the perceived complete control over travelling which was afforded by cycling; they could travel on any route and did not have to worry about having to park in a specific place, as Josie (Int. 24) and Catherine (Int. 4) describe. Each cycling journey is therefore determined by the cyclist and not by timetables or other constraints, meaning more variation can be introduced into journeys, if desired. This is an interesting code as a counterpoint to the Affective Barrier codes of 6.4.2. 'Hostile environment' and 6.4.5. 'Traffic and safety'. We have seen that participants cycling is in fact constrained in various ways by the presence and speed of motor traffic, lack of sufficient cycling infrastructure, and the closure of certain routes at particular times (Section 6.4.5). Some participants do adapt their cycling to ease this, either by selecting certain favoured routes which are traffic-free or quieter roads, or by avoiding travelling at peak traffic congestion time on busier roads. This may suggest differences in attitude on this issue between participants, or that they are thinking of different types of cycling (i.e. leisure rides instead of commuting), or simply that all participants

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experience is variable. At its best this feeling of enjoyment and freedom may be paramount, whilst at more difficult times the difficulties of navigating the city by bike could be uppermost.

6.6 Instrumental Barriers

This theme brings together the coding relating to my participants discussions around instrumental or practical barriers; everyday issues, inconveniences or sometimes even hazards which they had to negotiate in order to practice cycling. Some of the codes which generated the most substantial response were bike security, 'faff with kit', parked cars, pedestrians and facilities.

6.6.1 Bike security

A lot of concern over bike security was expressed by some participants, by both women (8) and men (6). This worked as a barrier to cycling in a number of ways. For some it meant that they would not do a certain type of cycling. Derek (Int. 6) didn't cycle to work as he felt his bike would not be secure there, whilst Jenny (Int. 2) didn't use her bike for shopping for fear that it would be stolen. As well as a direct and active barrier which actually stopped some participants cycling for certain journeys all together, the fear of their bike being stolen made some journeys more stressful, difficult or time consuming as people search around for suitable places to leave their bike. Whilst many bike locks are fixed to a bike with a bracket, it is not always practical, so locks may need to be carried separately, which can be

heavy and awkward. Adam (Int. 1) discusses the dilemma's he is experiencing with

whether to park his bike at certain locations, having recently bought a new bike

which he could not afford to replace easily. He is considering buying a second,

cheaper bike which he would then feel happier leaving in more 'vulnerable'

locations.

Interviewee 1: Adam Jessop Male Age 38 Almost daily cyclist

"I wouldn't take my current bike into town and lock it up for more than a few minutes where I couldn't see it because I know a couple of people who have had their bikes wrecked in town, even in the day, so more secure bike storage. I'm wanting to start going to a leisure centre, swimming but again there's a couple that are reachable by bike but I don't think the facilities are secure enough, there's a couple of places where they're enclosed and you can put your bike in, if they had that in more of the leisure centres or I'd even pay you know to have that piece of mind. My bike was three hundred and thirty quid, I mean I wouldn't be able to afford to replace that and I quite like it... But still I'm protective of my bike and I don't want it to be nicked, so I wouldn't lock it up in town but if they had those things where you could lock it up properly, in a box and not just chaining it to something then I might do or I'm thinking of getting another bike just for that purpose, for taking it to places where I wouldn't want to take my main bike, but I don't want you know to have bits and bobs everywhere kind of thing."

Interviewee 2: Jenny Durrant Female Age 48 Daily cyclist

"I would probably cycle up to the supermarket, but I am frightened of my bike being stolen. I've got a good lock on it, but I probably would do a lot more. But then I suppose on the weekend, if I go cycling for enjoyment I am always with the bike, even if I stop for a cup of tea it is always in sight, so it's just a fear of it being stolen really."

Interviewee 6: Derek Griffiths Male Age 59 Cycles 2-3 X a week

"The reason I don't cycle is because the facilities here are not that good.....Secondly I have got quite an expensive bike and I wouldn't want to leave it outside there, I think it is not that secure."

Interviewee 12: Viv McKinnon Female Age 49 Almost daily cyclist (summer only)

"Yes somewhere to put my bike, my clothes, probably that. I mean the difficulty is that as I said I have lots of meetings around town and I have hopped on my bike sometimes before but you never know kind of where you are and I've just paid six hundred odd quid for a new bike and the last thing I want to do is get it nicked somewhere, that's not safe so I'm a bit wary of that, leaving it somewhere that I don't feel it's safe."

There are a complex series of factors which impact on bike security, such as availability and cost of bike insurance, rates of bike crime and chances of recovery of stolen bikes, availability, situation and quality of bike stands.

6.6.2 *'Faff with kit'*

This code describes the difficulties and general hassle which interviewees sometimes experienced with the paraphernalia of accessories when cycling, which was mentioned by men (2) and women (6). Cycling may involve taking a variety of items of kit with you, especially in poor or changeable weather, or when having to cycle in the dark. Lights, waterproof clothing, locks, helmets, fluorescent/reflective clothing and potentially a change of clothes and/or shoes all need to be packed and unpacked, carried and possibly dried out a destination (and then possibly all done again on your return home). This can often seem and actually be a practical barrier to cycling, as Thomas (Int. 10) depicts, sometimes the necessity to take all of his cycling gear feels as though it is too much hassle which then leads to the decision to drive instead. Andrea (Int. 22) talks about the preparation involved, which might seem particularly difficult when people are new to cycling, returning to it, or simply if they do not cycle regularly and therefore are not in the regular routine of having all of that 'kit' handy and available.

The amount and type of 'kit' needed obviously also relates to an emotive aspect of cycling too which is people's perception of what is required for everyday participation in cycling. In the UK context, in which bicycle cultures are often heavily influenced by sport and fitness (Aldred and Jungnickel, 2012) the amount of 'kit' required to undertake a relatively short journey may be significantly greater that than perceived to be necessary by a cyclist in Germany or Holland. For most UK cyclists a helmet, waterproof clothing, reflective and or hi-visibility clothing and lights are considered necessary for urban cycling journeys, which is not the case in many other European countries (Pucher and Buehler, 2008).

Such factors relate to other earlier work on cycling stigma and stereotypes (Rissel *et al.*, 2010), particularly what it means to be a 'good cyclist' by having the 'right' kit (Aldred, 2013). These results would seem to confirm the challenges which cyclists experience both in managing to remember and carry all of the kit they need and then deal with it at their destination and often also feeling uncomfortable wearing such kit too, because of some of the associations with it. Andrea (Int. 22) summarises this; "You do carry, when I go I've got my helmet, I've got my rain gear, I've got practical shoes and you don't look great".

Interviewee 10: Thomas Winton Male Age 32 Cycles 2-3 X a week

"Having to you know carry my kit everywhere, take papers out, it's easier just to drive. So you know, but generally if I can cycle I will, so sometimes I will cycle in five days a week, but the average is probably two or three times a week I will cycle in."

Interviewee 22: Andrea Linton Female Age 36 Almost daily cyclist

"The gear, I have to say you have to be prepared. You do carry, when I go I've got my helmet, I've got my rain gear, I've got practical shoes and you don't look great. You always have to be thinking about is there somewhere to lock the bike up the other end, carrying the lock for the bike. Then when you get to the other end having somewhere to put all that, if your wet gears wet somewhere that it can dry out, it's you know, things like that. It's just practicalities and also probably getting hot and bothered if you go for a long time or wet if the wet gear isn't sufficient."

Interviewee 26: Carol Jessop Female Age 65 Daily cyclist

"I think getting their head around the kit and the hassle, you know, but once they have done it I think they realise they can, they need to be persuaded that it is actually you know not such a hassle."

6.6.3 Parked cars

Parked cars were an important instrumental barrier for many participants (4 men and 7 women); they were worried and anxious about two main factors related to this. The first was how to circumnavigate parked cars which caused direct obstruction so that they then had to move further out into the road with the inherent danger involved in this. The sheer volume of parked cars contributes towards this, but also there are a number of ways in which the cars may be parked, more or less on the pavement, especially in narrow streets, on double yellow lines and also on cycle routes – causing a particularly challenging obstacle for many cyclists. The second related to the danger of car drivers or passengers opening their doors to exit their vehicles without looking to check. This could cause an opened car door to suddenly appear directly in front of a cyclist, which depending on the speed they were travelling they may not be able to swerve to avoid, and so collide with it. Alternatively it could mean that they have to swerve to avoid a car door opening or they have to ride further into the middle of the road just in case a car door opens on them – putting them in potential danger from motor vehicles.

Interviewee 3: Matthew Ford Male Age 53 Almost daily cyclist

"But it's more the parking behaviour, rather than… Moving vehicles don't tend actually to be that much of a problem, because I take an assertive position. That leaves me a buffer to do something if things are close, erm. But it's more the static cars that are where no car should be."

Interviewee 4: Catherine Collins Female Age 39 Cycles 2-3 X a week

"And it would be really nice if somebody actually bothered to enforce parking on cycle lanes, because people do it all the time in Cardiff. Sometimes they're… oh, my mobile phone is ringing. I'll just pull over into the cycle lane. Never mind it's a cycle lane and they quite happily… I don't think they think about it, really. Quite happily endanger you having to pull around this car into main traffic because they're now sitting there making a phone call. And that's the kind of road rage moment where sometimes I just want to stop, unclip, put the bike down, knock on their door and sort of say, you're parked on the cycle path, but it's just not worth it. It's not worth having that conflict with some people because you know the kind of response you'll get and it won't be a sort of apologetic. Oh. I'm sorry. I didn't realise. You know?"

Interviewee 15: Nat Winter Male Age 56 Almost daily cyclist

"I mean my main bugbear is the fact that in Cardiff they designated a lot of on-road cycle tracks … basically adjacent to the gutter at the edge of the road some of which are incredibly narrow many of which are disconnected - lots of short lengths. But the main problem with them is that because cars are permitted to park in them they are actually probably counterproductive because every time you meet a car you have to pull out into the main carriageway which is obviously a safety hazard."

Interviewee 23: Greta Mayer Female Age 55 Almost daily cyclist

"You know, because it's very often the case that people open their car doors without looking. They pull out without looking, they overtake too close and they try to turn left in front of you without looking. You know? All those very common city cycling experiences."

6.6.4 Pedestrians

Female (11) and male (4) participants both described interactions with pedestrians.

Why this was more of a factor for women participants is not known. It may be

related to their choice of cycle routes, since it is argued that women are more likely

to choose traffic-free routes when these are available (Garrard, Rose and Lo Sing, 2008), which may mean a greater degree of interaction with, and also sometimes conflict with, pedestrians. The quote from Viv (Int. 12) neatly sums up the various dilemmas which cyclists face; since there is little in the way of dedicated safe cycling-only space, they must either opt to share the space directly with cars (quicker and more direct but potentially less safe) or share the space with pedestrians (lots of stop, start and potential conflict with pedestrians). Anne (Int. 18) talks about the sense of hostility which can sometimes pervade dealings between cyclists and pedestrians, and how ultimately there needs to be a 'live and let live' attitude. Thomas describes the difference in attention which occur with the two groups - pedestrians may spend time on phones and tablets and not be particularly conscious of where they are walking or who else is around them. This can make the sharing of the space more hazardous for people cycling, who need to then pay extra attention to ensure that there are no collisions.

Interviewee 10: Thomas Winton Male Age 32 Cycles 2-3 X a week

"So I would have thought, I wouldn't have thought, I mean there are parts where the trail which is shared with pedestrians to be honest that's a bit of a headache for people on their phones, or on their you know on their iPods or whatever, they do just wander, walking dogs, they do just wander across, they don't even think oh there's a cyclist coming so that can be a bit of an obstacle, so I would have thought it's better to try and segregate them if you can."

Interviewee 12: Viv McKinnon Female Age 49 Almost daily cyclist (summer only)

"I like to keep moving so if I think I've got to share it with pedestrians and it's stop, start I think I'd rather go on the road as long as the road was ok and safe and it wasn't chaotic. Some pedestrian paths, dogs are a nightmare, I've taken several dogs out (collided with several dogs whilst cycling) and I've actually fallen off my bike because of a dog runner, me and the dog tangled down the hill on a bike so if it's a case of sharing a narrowish path with a pedestrian and possibly dogs I'd rather go on the road.   And I don't want to piss

pedestrians off either and I never race, I try and come up behind people and just ring my bell well in advance so they know that I'm there. Again it depends if I'm in a hurry or if I'm on a leisure, I will pick paths, roads that's traffic-free, it will depend on the, but it's nice to have a range, it's nice to have a range of options. Most people want to be safe and I think this stop start thing is a real ah, a bit of a hassle sometimes yes."

Interview 18: Anne Sully Female Age 41 Almost daily cyclist

"Yes on the pavement, big wide pavements, it's quite clear, you've got the blue sign, and I think there just needs to be a bit more understanding between pedestrians and cyclists, I think there's a lot of hostility between both groups (laughs). I get really angry when up North Road there is an off road cycle track, which has a big long car park, and a cycle track and then you've got the pavement, and then you've got the road and you find all the pedestrians on the cycle track and it just drives me nuts. And I can understand why they're there because they're that little bit further removed from the road, and it's not a nice road, but you just think 'get off our track.' (both laugh) So it is frustrating, but it's a case of its just live and let live really. All try and get along."

6.6.5 Maintenance

Bike maintenance includes such aspects as repairing/replacing inner tubes when you have a puncture, pumping up tyres, checking and adjusting gear and brake cables or blocks, and oiling and cleaning the bike. At its most sophisticated some people may build a bike by buying the separate components and assembling them; this is popular particularly with fixed-gear bike riders (Kidder, 2005). Bike maintenance was mentioned by both women (9) and men (10), mainly as a 'hassle' factor; something which they didn't want to have to do, but sometimes for various reasons did do, and for some occasionally enjoyed.

Interviewee 10: Thomas Winton Male Age 32 2-3 times a week cyclist
"I dislike punctures (laughs)."

Interviewee 11: Gina Wilkinson Female Age 35 Almost daily cyclist

"So if something is technical then I hate to generalise but it just doesn't appeal to me and I don't think it would appeal to lots of women, I like the fact that with my bike as long as I've taken it to a bike shop and it's all sorted, then I can just hop on it and go, and when the gears change, well break or something snaps I just take it back to the bike shop, I don't want to be bothered with it."

Interviewee 17: Peter Stein Male Age 52 Daily cyclist

"What do I dislike about cycling? When I get mechanical failure. I'm not that bad at it but I don't like it. I can change a tyre and stuff myself but I can't do anything else much. So that's something."

Interviewee 22: Andrea Linton Female Age 36 Almost daily cyclist

"I fixed one puncture myself but I am not efficient, it is like I've got another puncture and Gina helped me that time and I was hoping I'd learn. But to be fair I've never had a puncture in pretty much seven years on a bike and I had one, well actually, I had my bike wheel stolen and I've had a puncture recently. So I am not exactly like if I had to do it every day I'd become quite handy but it's such a dirty job so that does discourage me. And like the bikes been out of commission for two weeks and I haven't got around to doing anything about it. You've got to get the right wheel, you've got to know a bit about it and it's quite a dirty job so I've been putting it off (laughs)."

Interviewee 34: Finn Jennings Male Age 64 2-3 times a week cyclist

"Punctures, yes punctures are a real pain, so I've bought some puncture-proof tyres which were quite expensive but…We had a classic situation we'd cycled half way between here and Barry, a place called Swanbridge and my wife had a puncture and we hadn't carried anything with us. So, fortunately we went into a cafe and some friends of ours were in there, so they said well we'll give you a lift back, so I locked up the bike, pick up the car and come back and get it. So that was slightly irritating."

Many of the comments by participants related to punctures, since this is probably the commonest bike maintenance experience when riding regularly (depending on tyres used, routes ridden and any anti-puncture measures used). There was a continuum of how people might feel about the repairs, with some (perhaps reluctantly) dealing with incidents then and there (Peter, Int. 17), taking bikes home to fix them (Finn, Int. 34) or being so discouraged by the thought of having to do the repair that they stopped riding their bike for a while (Andrea, Int. 22). Gina (Int. 11) suggests that there is a gender difference with respect to bike maintenance,

with "something technical" not appealing to women. Amongst my participants however this is not the case, with maintenance not being particularly popular with men or women.

Some participants, however, had tackled bike maintenance, and going beyond this, even built their own bike. Interestingly it was women who more often talked about being more comfortable with tackling bike maintenance. This may be due to the unrepresentative sample used in this study, or simply that many men are no keener on doing bike maintenance than women.

Interviewee 12: Viv McKinnon Female Age 49 Almost daily cyclist (summer only)

"But then when I started work I remember actually, yes because I did get myself a bike, in fact I bought an old bike that needed renovating and I went on a sort of a bike maintenance course when I was about twenty three, twenty four and I kind of put this bike together myself so I did get into cycling more when I was about twenty three, twenty four."

Interviewee 23: Greta Mayer Female Age 55 Almost daily cyclist

"Anyway, I think women tend to be more concerned about safety and I know some women are worried about repairs that they might need to do if they're going on long trips. But it's never bothered me because I suppose I was just… I just grew up thinking, you know, I can do anything anyone else can do, really. You know, it's just a case of learning how to do repairs and building up experience."

6.7 Instrumental Enablers

This theme outlines the key instrumental or practical factors which encourage and enable participants to cycle. These codes related to the everyday practical advantages which the bike had over other means of transport which helped

participants to start or continue cycling on a regular basis; cheapness, quickness, bike hire and cycling infrastructure.

6.7.1 Bike cheaper

More women than men mentioned this factor, but both mentioned it often. It could be that as in many households many men retain the primary access to a household car (if there is only one) (Hjorthol, 2008), women feel a greater need to find an economical method of making their regular journeys. Cheapness and quickness were often mentioned in conjunction as a dual winning combination associated with cycling, so this would appear to be a key enabler for many people.

Interviewee 15: Nat Winter Male Age 56 Almost daily cyclist

"I think just the sheer convenience of it. The fact that … the sort of journeys that I make are quicker than by any other means, cheaper than by any other means. And then on top of that I could sort of overlay various other ideas connected with various social issues and so on, but I mean on a pure selfish practical level it's the sheer convenience and efficiency of the thing."

Interviewee 21: Joan Christopher Female Age 27 Daily cyclist

AD: What would you say the main reasons why you cycle are?

"JC: To save loads of money, keep fit, I like it. (laughs)"

Interviewee 23: Greta Mayer Female Age 55 Almost daily cyclist

"But, you know, I was determined to continue because I knew it was beneficial for me and it was cheaper. It was a waste of money to pay for bus fares. And I could cycle and cycling got me there faster and I felt fit for it and that was the result."

Like Greta (Int. 23), several people compared cycling with public transport, particularly buses, and had decided that the twin benefit of being able to reach their destination more quickly and save money was a decisive factor. The costs of cycling are intermittent and dispersed and the bike is free at the point of use; so it may be that it seems cheaper than it is because of that lack of upfront outlay. Other factors were mentioned alongside the low cost of cycling as particular reasons why people enjoyed it; convenience and health/fitness.

6.7.2 *Bike quicker*

Both female (7) and male (12) participants mentioned the short time of cycling journeys, as compared with other modes of transport, as one of their key reasons for choosing it. Men mentioned this factor more often, however, so it may have been a more important characteristic for them. Obviously the comparison with other modes is a complicated one, depending on the distance of the journey, the speed at which people are cycling and the type of route. For many short urban journeys though, the bike will often be the quickest form of transport, as many commuting challenges show (University of the West of England, 2015). Cyclists can sometimes pick uncongested traffic-free or dedicated routes at peak times which makes them quicker and they can also often cycle past standing or slow-moving traffic if they are on busy roads, as Derek (Int. 6) describes. As well as being quick there is another more emotive side to a cycle commute, which is the lack of frustration of being stuck immobile or stop-start which you may get whilst travelling

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at busy times in a car or bus. There is a greater sense of being in control of your

journey or travelling 'under your own steam'. A recent Canadian study comparing

commuting satisfaction found that cyclists, walkers and train travellers enjoyed

their commuting journeys significantly more than those who were travelling by car

or bus (St-Louis *et al.*, 2014).

Interviewee 6: Derek Griffiths Male Age 59 2-3 times a week cyclist

"I use it as I say really socially just to go back and forth to the tennis club or just really to beat the traffic more than anything else because where I live and where the tennis club is I can get there quicker on the bike than I can in a car because of all the traffic, so I used to occasionally go out on the bike, but it wasn't, I didn't do an awful lot of mileage until about 18 months ago when I started taking cycling more seriously."

Interviewee 16: Linda Cutler Female Age 42 Almost daily cyclist

"…he (participant's husband) was commuting to work by bike and then I went back to commuting to work by bike because we found that in order for him to go to work in the evening at the right time, to get back by bus I couldn't actually manage to do it in the time allowed because I had to catch two buses. Whereas if I took my bike it was exactly twenty minutes door to door and I knew that it would be twenty minutes so I commuted, from that point I commuted every day, five days a week."

Interviewee 17: Peter Stein Male Age 52 Daily cyclist

"Again you have to make a distinction but the first one is obviously to have the health and fitness, the second one is around town it's the best way of getting about, the quickest way of getting from A to B; it's healthy, it's easy, it's quick and easy, and I get to most places much quicker than in the car, so that is the big advantage. And it's a different way, I like the way to enjoy the environment, which you don't have in a car, so."

Interviewee 21: Joan Christopher Female Age 27 Daily cyclist

"Yes I used to cycle every day to, yes especially because I made an agreement with my Mum that I wouldn't walk around in a big city because I'm from a small village, so I wouldn't walk around a big city on my own especially at night. So I took that that I was allowed to cycle so I just cycled instead [laughing]. So I used to work in bars down St. Mary's Street and they used to get you a taxi home but you'd have to find, but sometimes you had to wait for ages and it would make the working shift so long and getting to there as well you know on a bus it would take like forty minutes sometimes from where I lived and on a bike it took ten. So I was just like the efficiency of cycling just maxes out anything in the city, so yes then I'd sort of cycle backwards and forwards to my shifts at the Café Jazz which was about every three times a week, sometimes more, sometimes less I guess and then I'd cycle to Uni every day."

Interviewee 22: Andrea Linton Female Age 36 Almost daily
"It's cheap, it's exercise, and it cuts my journey time in half if not more."

6.7.3 Cycling infrastructure

The desire for better cycling infrastructure, usually segregated traffic-free infrastructure, was often mentioned amongst the participants in this study; 15 women and 17 men. The ways in which this directly enabled people's cycling was also expressed clearly.

Interviewee 10: Thomas Winton Male Age 32 Cycles 2-3 X a week

"Most of my cycling's off, is on the trail so it's not commuting on the roads. If my route to work was entirely road based I wouldn't do it as much if at all, you know just for the safety side of it. I am confident on the road but generally you know if you come across a bus or something it's you know, there's only going to be one winner, so I like my route to work because it's along the Taff Trail, it's about three and a half miles into work, so it's easy, its quicker than the car, it keeps me fit."

Interviewee 12: Viv McKinnon Female Age 49 Almost daily cyclist (Summer only)

"Just I think more designated cycle paths really if possible, maybe cyclists able to use, I'm never quite sure what the rules are using taxi and bus lanes, sometimes it's quite scary if you've got a big bus behind you, kind of coming up behind you but I think that, you know being more aware of the possibility of that as an option might help people feel a bit safer, if they think they've got designated, it's hard, the whole things indicative of the pressure that we live our lives isn't it and the speed. There's so much more traffic out there on the roads and the roads weren't' built to accommodate buses and cyclists, particularly in Cardiff it's just like, you know you can't widen some of the roads anymore, that's it, that's all there is so I don't know quite how that could be done but maybe use of bus lanes, maybe just more public awareness campaigns. If we're thinking that we don't want to use all our fossil fuels up, maybe we ought to cycle more as a nation, we've got to move to it more. And recognising that cyclists aren't a pain in the neck, they're actually contributing to the good of society perhaps, so going about it in that way maybe."

Interviewee 18: Anne Sully Female Age 41 Almost daily cyclist

"Just safer, safer cycling routes, maybe more family-friendly cycle routes, I think I mentioned to you frustration that going with tag-alongs and gator bars and you find that

There were two countervailing voices, who were more interested in seeing 20mph speed limits only or little or no direct cycle path provision (vehicular cycling, see Section 2.2). They favoured a city-wide 20mph limit, such as has been implemented in Portsmouth and has just been completed across central Bristol (Bristol City Council, 2015a). These opinions, such as those of Gina (Int. 11) and Kris (Int. 14) saw a need to 'civilise' the road space by having drivers and cyclists travelling together and behaving with mutual respect, in preference to segregated infrastructure.

> "There's a bit of a direct debate going on in the Cycle Campaigns about facilities, but I am not against developing off road routes and dedicated cycle paths on the main roads too, but I do feel a lot of the infrastructure that we have now just, it puts you in the wrong place away from the traffic, but when you go to certain places those things cease to be useful if you are in the wrong position. I think you do really need to, to create space within the highway for cyclists, more cyclists has more modification of motorists behaviour. Yes reduce speed on most roads would be effective like the twenty mile an hour limit. That would be fine, that would be great."

6.7.1 Bike hire

Bike hire, which is available in Cardiff, but in a somewhat limited form in terms of numbers of bikes and docking stations, was mentioned by a few participants, both male and female, but does not appear to be a large part of peoples cycling experience. As Adam describes, his partner, who doesn't own a bike and has nowhere to store one, has used Oybike, the Cardiff bike hire scheme a few times. But for Nina, the fact that there is only one standard size bike, precludes her from using it for family leisure cycling, which is the main purpose she would be interested in using the bikes for.

Interviewee 1: Adam Jessop Male Age 38 Almost daily cyclist

"I should say really my current partner, she hasn't got room for a bike but she's signed up to the OyBike and used it a few times and I've borrowed my mum's bike for her to use, you know I've started going out a bit more at the weekend now. She's quite timid and scared whereas I'm going for it so we've got to compromise there somewhere."

Interviewee 8: Nina Shaw Female Age 40 Almost daily cyclist

"NS: I mean they've introduced that scheme in Cardiff haven't they where you can borrow the bikes and take them out haven't they?

AD: Yeah, Oybikes.

NS: But it's just adult bikes, there's not kind of a variety that might encourage families if there was kind of a variety of bikes. Cos you think, yes, but it always just seems to be adult male sized bikes as the norm."

6.8 Gendered Aspects of the Cycling Experience

In this theme I brought together aspects of participants cycling experiences which displayed distinct gender difference. Whilst this difference was often marked between men and women, such as with cycling with children, there were also issues which elicited strong positive and negative opinions from women, such as cycle clothing. The responses to these sub-themes could help inform future promotional and marketing efforts, as it shows aspects which will appeal to some potential cyclists and put off or discourage some others; especially women. For example, building on responses to 6.8.1, a wider range of clothing options could be developed by manufacturers which would appeal both to those wishing to strongly assert their gender difference and those who prefer to wear less obviously 'gendered' clothing when cycling. To better inform such efforts further quantitative research would be useful to determine with more clarity the respective like or dislike of different aspects.

6.8.1 Cycle clothing and 'girlyfication'

This code referred to how participants felt about the clothing which they wore actually on their bikes, and relates to 6.4.3 Appearance, presentability and gender roles. The aspect discussed here is focussed more on the performativity of being on the bike as a visible cyclist; clothing and PPE and gendered aspects of these were considered. Participants in the Bristol Pilot Study talked about what they wore

whilst cycling, and so I decided to ask specifically about this aspect in the Cardiff interviews. I was interested to see if there were differences in the ways in which men and women approached dressing for cycling. As discussed in Section 3.8.3, some of the efforts which have been made to try and encourage more women to cycle have tended to emphasise women looking attractive whilst cycling.

For some, such as Peter (Int. 17), cycle specific clothing was a straightforward, practical choice which made cycling easier, whereas others, like Connor (Int. 7), struggled with the uncomfortable feeling of standing out as a cyclist in bright, awkward clothing. Different cycling attire can also carry status messages about being a certain kind of cyclist; for example the dominant majority cyclist who usually wears cyclist specific clothing and a helmet can be derogatory of those who do not have/choose similar equipment (see Section 7.4.1 for a discussion of this).

There were also some strong differences in feeling about the cycling-specific clothing available to women, as Anne (Int. 18) and Catherine (Int. 4) demonstrate. Whereas for Anne her pink cycling jacket allowed her to feel separate from the male commuters and to assert her femininity, for Catherine it represented a patronising and clumsy attempt by cycle clothing makers to market 'girly' clothing to women, which she was uninterested in.

Interviewee 4: Catherine Collins Female Age 39 Cycles 2-3 X a week

"The guys have nicer kit. They have a bigger choice of kit. If you're a woman who's trying to buy a bike kit it's inevitably in pink and it's got bloody butterflies on it. (both laugh) It has to involve flowers or butterflies, doesn't it? Somehow they just… you know. I remember looking at the, you know, oh what's that website called? Sustrans? The Sustrans

website? And they've got this whole thing about 'Bike Belles' going on and I'm thinking, why is there pressure on me as a female cyclist to be a belle while I'm cycling? Why is there a focus on looks from women trying to get from A to B on a bike? And the whole article was about how to not mess up your hair when you're wearing a helmet and stuff like that and it was… I just found it so patronising. I kind of thought who put this together?"

Interviewee 7: Connor Mason Male Age 31 Cycles 2-3 X a week

"I don't like getting wet, especially when you have got a day in work. I still do feel a bit of a pranny, a bit of a fool when I have got like, for instance my work clothes on and then got my socks tucked into my trousers and helmet on and a bright fluorescent jacket, I still I don't like feeling like that but I just think come on you are 31 now, don't give in to peer pressure which worst thing was in 6th form because helmets were hardly worn then and then I felt highly self conscious. In fact that was a good testing ground for me."

Interviewee 17: Peter Stein Male Age 52 Daily cyclist

"I'm not a person who gets taken aback because people think it's strange to walk around in Lycra or something like that, I wouldn't take any notice of that. That wouldn't bother me, but some other people in Cardiff it probably does."

Interviewee 18: Anne Sully Female Age 41 Almost daily cyclist

"I've got what I've got on today, and if it's, I've got waterproof trousers that I would wear if it's muddy or raining, just for protection from mud as much as anything else. Then I've got a high-vis, bright pink cycling jacket, Endura one, it's great, making the point that I'm a *girl* cycling, that's (laughs).great; I love the fact that it's pink, there's so much boring black with all the men, and there's me in my pink jacket (laughs) and I just stand out."

6.8.2 Independent women and 'tomboys'

Several of the female participants alluded to themselves as having strong

independent characters, or referred to themselves as being or having been

'tomboys'. Catherine (Int. 4) describes her lack of concern for constantly assessing

and worrying about her appearance and her thought that this makes her unusual.

Joan (Int. 21) and Carol (Int. 26) both self-identify as 'tomboys', whilst Greta (Int.

23), Josie (Int. 24) and Jan (Int. 30) discuss their sense of adventure and being the

kind of people to 'just get on and do things'. Since this sample is not representative

this finding is clearly not generalisable, but future work could explore further

whether there are character differences between women who do and do not cycle

in low-cycling countries, and whether this could inform better ways of promoting

cycling to more women.

Interviewee 4: Catherine Collins Female Age 39 2-3 times a week cyclist

"But obviously there must be that kind of female audience that really, really cares about, oh, what do I look like once I take my helmet off kind of things? And maybe I'm just odd that I don't feel that way kind of thing."

Interviewee 21: Joan Christopher Female Age 27 Daily cyclist

"I think it must have been like sort of two or three when I got my first bike because I remember having one that was my sister's with stabilisers on. I got my stabilisers taken off before she did and she's two and a half years older than me, because I was like, just you know like a tomboy sort of kid, so yes."

Interviewee 23: Greta Mayer Female Age 55 Almost daily cyclist

"Well, I was aware that a lot more boys cycled. You know, they had bikes and they were given more freedom and, you know, I was always a very adventurous child. You know? When I was 5 I really wanted to be an explorer. (laughs) In your first class at infant school and the teachers ask you what you want to do when you grow up, you know, I think the teacher was quite surprised when I said that."

Interviewee 24: Josie Ziller Female Age 34 Daily cyclist

"…so she said, 'why don't we get you a bike, you know, do you know how to cycle?' I said yes I – I did know, and you know, probably it's because of me, as a person, personality, things like that, I'm not really afraid of doing things so I said 'okay, let's get a bike', you know, I don't think too much… I don't think too much I just do it, so."

Interviewee 26: Carol Jessop Female Age 65 Daily cyclist

"The freedom that it gives you and I like on the rides I do at weekends or the holidays, the challenge, the challenge of tough hills, because I've always been a tomboy so you know it's like that with running as well."

Interviewee 30: Jan Heller Female Age 82 Almost daily cyclist

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> "I fall off (her bike), I've fallen off a lot but I still keep going, but her husband took the bike away from her, not mine (laughs). I think for my son to buy me a bike to go on riding is gratifying. No, I've always been one to do things."

6.8.3 Other transport usage

Participants had varied patterns with regard to their other transport usage, some cycled or drove mostly exclusively, whilst others used all types of transport, depending on circumstance. Walking was considered an attractive option, especially for short trips into and between different areas of town (13 men and 9 women), and running was mentioned by some (4). Buses seemed a less favoured option by many (9 women and 7 men did use them), with complaints about cost, lack of change given, slowness and having to change, though local and national train services were more popular (15 men and 10 women). Several older people (6) mentioned rail and bus passes as part of the reason why they used these services, though some had opted not to use them even though they were available. Some of the participants did not drive or own a car (7 men and 5 women), so using a range of transport options was useful to them. There were a variety of reasons given for not driving/owning a car; dislike of traffic, environmental reasons, cost or choosing to live centrally where a car would not be needed which several participants had made a deliberate choice to do. For some of those who drove but did not own a vehicle the occasional use of a hire car (2), borrowing a car (1) or getting a lift from a partner (1) was mentioned, but more people used other means of transport. There are more car-free participants in this sample than are present in the general

population, where 25% of households did not have access to a car (Department for

Transport, 2014)

Interviewee 15: Nat Winter Male Age 56 Almost daily cyclist

"Well I do quite a bit of walking. I use the bus very infrequently. You know, if I'm going out of town I'd probably choose the train as an option. But, perhaps I don't do a great deal of travelling outside the immediate vicinity so hmm I'm certainly not a, I know vaguely where which buses to catch to go, but for most journeys within Cardiff the bicycle is the sort of option of choice I would say."

Interviewee 11: Gina Wilkinson Female Age 35 Almost daily cyclist

"So I've got my three bikes, yes it's definitely my favourite way of getting around, I use the bus, I'm trying to get more into walking, I do own a car so I drive a couple of times a week, if not more, but no I love cycling. I've turned down a couple of jobs when I've been head hunted purely because I knew I couldn't cycle, so I could have worked in Llanishen which is further north of Cardiff, I could have worked in the Vale and I said thank you but I can't cycle there, it's too far, it's not practical. So for me where I live it's really important I can get to work within about fifteen minutes whether I'm driving or cycling."

6.8.4 Cycling with Children

This code discusses the subject of freedom of movement as a child/young person,

and the experience for parents or carers of cycling with children at different ages.

This is a very different experience at different ages; varying from a child/children

being in a bike seat or bike trailer when small, to independent (but assisted) cycling

either on a balance bike or a bicycle with stabilisers, to perhaps cycling on

pavements as a slightly older child, and then finally independent cycling in some or

all locations depending on child and parental confidence.

Interviewee 6: Derek Griffiths Male Age 59 2-3 times a week cyclist

"She (participants daughter) didn't do much cycling on roads, in fact I think it is fair to say that after a while she just gave it up, and I think she didn't cycle for more than a year, and I think if we dig down to the reason I would guess because her contemporaries weren't cycling either. The school was a ten minute walk away for her, and I think that's the reason really, all her contemporaries were using other means of travel and not cycling, I think the interest wasn't there for her. I don't think, I have never encouraged her to be quite honest, I never discouraged her but I never encouraged her, I think it is important to say that because I think for a young person it is very difficult on the roads…"

Interviewee 11: Gina Wilkinson Female Age 35 Almost daily cyclist

"I used to be a nanny in London so I'd go cycling with the children then and I do lots of cycle training (Gina is a Road Safety Training Officer) in Cardiff so I take out up to twelve children at a time, we'll go cycling along in a snake or I'll have them riding around as I did last week in half term on local roads. But no I'd like to have children in a couple of years myself and I definitely want to have a child on the back or on the front (of the bike), I can't wait."

Interviewee 17: Peter Stein Male Age 52 Daily cyclist

"People have to really understand this. So there are big areas in Cardiff…where there are just two busy main roads, there is no consideration for cyclists, so how can you then go around and tell people that their children should cycle to school when there is no provision. I believe very strongly that, especially main roads you have to separate the two. I didn't send my child to school with a bike when she was about 2-3 miles away because I knew there were certain areas which were really pretty tricky and you don't want to have a knock on the door do you. So there needs to be much more investment…Cyclists are still feeling, especially for children, it's still very dangerous."

Interviewee 18: Anne Sully Female Age 41 Almost daily cyclist

"But we've certainly reached the point now where they're keen to cycle independently, but not safe enough to go on the roads. My husband, we tend to differ on this actually, he's happy to let them go, cycle on the road…But I'm uneasy with that, particularly going home because at that point you're downhill and you can't keep up with them, and I would rather they went on the pavement, so we tend to fight about that (laughs). I think that they shouldn't be on the road until they're doing their cycling proficiency and they're completely in control, but I think that's the difference probably between our personalities, but also a male female thing as well, so he's willing to take that risk, and I'm absolutely not. I'm happy to take risks with myself but not with them."

Interviewee 16: Linda Cutler Female Age 42 Almost daily cyclist

AD: Do they all cycle on the road now independently?

"LC: They do on the smaller roads."

AD: Around here?

"LC: I wouldn't let them on the A470 or on the main road up through here for example, the older two yes, my older two have both taken bikes to school and that's on a main road although over Bridge Road to Llandaff they tend to stick to pavement there, there's a wide pavement which isn't ideal but sometimes it's better than them risk getting run over."

Whilst family cycling was an enjoyable activity for many or something they looked forward to in the future, it was also fraught with many anxieties, particularly at an interim stage. Gina (Int. 11) shows her enthusiasm for taking children out to train them and looks forward to being able to take her own children out in the future. For the other participants, who are all discussing children (at a variety of ages) who are in an interim stage where they can cycle independently but not necessarily safely or confidently, there are rules and boundaries about where they are and are not comfortable for their children to cycle. Linda (Int. 16) talks about how she feels ok with her children cycling on smaller roads, but certain bus roads are out of bounds and they cannot cycle on those, and need to use the pavements alongside.

A gender difference in this area is perceived by Anne (Int. 18); she feels that men (like her husband) may be more likely to take a bit more risk when teaching their children to ride, by letting them cycle on roads she would not be comfortable with. It appears as though there may actually be a more complicated pattern with regard to gender and children's cycling however. Both Derek (Int. 6) and Peter (Int. 17) describe how they were not comfortable with their daughter's cycling on the road; Derek says he did not encourage her cycling (and she also lost interest as none of her friend's cycled), whilst Peter says that he didn't want his daughter going to school by bike because he judged that the route was unsafe.

6.9 Chapter Summary

In this chapter I have presented the results from this study that relate specifically to people's everyday cycling experiences and whether there were gender-related differences mentioned by my research participants. Firstly I described the process which I adopted for the gender-based analysis. Two cycling profiles were given as brief illustrations of the experiences of people interviewed and the enjoyment and challenges they faced as part of their everyday cycling. The results were divided into five sections; Affective Barriers, Affective Enablers, Instrumental Barriers, Instrumental Enablers, and Gendered Aspects of the Cycling Experience. The themes were arranged in this way to provide opportunity to examine both affective and instrumental aspects of cycling; both of which it is argued are important to understand peoples cycling. The findings from these five themes will be discussed in Chapter Eight, my conclusions. Next, in Chapter Seven, I provides the study results relating to social influence and cycling.

Chapter 7: Social Influence and Network Results

In this chapter I will discuss the findings from my research relating to social influence and social networks. Two of my research questions relate directly to this area, and are re-stated below as a reminder.

Q2. What role does social influence play in encouraging people to cycle?

Q3. To what extent are there gender differences in the ways in which social influence operates on participation in cycling?

In order to answer these questions, I will be drawing on data collected in Bristol and Cardiff, and will also be using material collected from both the individual interviews and from the SRFGs. This chapter is organised into 3 sections; the first one covers the analysis from the SRFGs on social influence, the second one provides examples and analysis of the social mapping process used in the individual interviews, and the third one examines the image prompts used in the SRFGs. At the end of the chapter is a summary and discussion of the social influence findings from these three sections, and then the following Chapter Eight is my overall discussion and conclusion for the research.

7.1 Social influence analysis from the interviews and SRFGs.

I asked participants directly about social influence in the individual interviews at several stages (see moderator's guide for interviews, Appendix 5);

Childhood cycling; Can you remember what persuaded you to start cycling?

Current cycling patterns; Are there any people you know who helped or encouraged you to cycle? Could you tell me about them? Have any others discouraged you? Do you think there are gender differences between those who encourage or discourage you? Do many people you know cycle too? Are they family, friends or colleagues?

Social mapping exercise; as mentioned in Ch5 this exercise was designed to encourage participants to draw on a blank A4 sheet of paper a map showing people who had encouraged or discouraged them in their cycling behaviour, this will be elaborated on in Section 7.2.

Own influence on others; what do you think would encourage more people to cycle? Have you yourself encouraged others to cycle? How? Whom? Do you plan to do this in the future?

For the SRFGs the questions were similar, but with the following differences:

Discussion of the original interviewee; their cycling and the people in the groups' feelings about this and inward/outward social influence around this. So, we're going to talk about (the original interviewee) now. Can you remember when he/she first started cycling? What did you think about it? Did you think it was a good or bad thing? Do you think any of you (or others) helped persuade her/him to cycle? How? Why were you interested in doing this? Was it difficult? What do you think would encourage more people to cycle generally? Have you yourself encouraged others to

cycle? How? Whom? Do you plan to do this in the future? Do you think you yourself have been or could be persuaded by others to cycle? Why or why not do you think?

Participants were not asked to draw a social map

Image prompts; what do you think of these images? Are there some which are like you or not like you? What positive and negative perceptions are there about people who cycle?

The items were used as question prompts, as per a semi-structured interview, and so not all questions were asked to all participants, rather they were used as an aide memoir to cover the topic. In some interviews the topic had already been covered at an earlier stage in the conversation, for example, and so specific further questions were not required. The questions for both the individual interviews and the SRFGs were designed in such a way as to capture both inward (the participant being influenced by others) and outward (the participant influencing others) social influence. The questions were similar for the Bristol stage of research, but as this was a pilot study, the question schedule in the moderator's guide evolved over time as new topics and themes of interest came to light. For this reason they are not identical, and the answers in Cardiff are likely to be both broader and deeper, due to the evolving nature of the questioning. Despite slight differences in the nature of the questioning some authors argue that due to the flexible nature of qualitative research it is acceptable practice to use data from both a pilot study and a main data collection phase (Ritchie, Lewis and Elam, 2003, p.135).

The interviews and SRFGs were fully transcribed (for more information on this please refer back to Section 5.7) and the transcripts loaded into NVivo. After transcribing and reading through the transcripts a thematic analysis (see Section 6.2) process was followed, which involved coding the data and then refining and amalgamating these codes into themes and sub-themes. These themes are illustrated with quotations from the transcripts and their place in the analysis is described beneath each boxed set of quotations.

7.1.1 Inward Social Influence

There were a range of interesting discussions about people being influenced by others, which I have termed 'inward social influence'. This was mentioned by people as a factor in them taking up cycling again, for example, Matt Vincent (Cardiff SRFG2).

> **Cardiff SRFG2: Matt Vincent Male Age 29 Almost daily cyclist (Friend of Murray Barrell)**
>
> **Int: And were there any people that you knew who were cycling or who encouraged you to cycle at all?**
>
> Matt: "Yes. I mean, Murray. Murray Barrell who you've spoken to."
>
> **Int: Yes**
>
> Matt: "I was just speaking to him about it. He's always cycled."

For other people, such as Kirsten (Bristol SRFG2), their choice to return to cycle was seen in purely instrumental terms, of cost, time or other practical reasons. Kirsten works in the area of Transport Planning and has been involved with obtaining funding for cycling and finding ways of encouraging others to cycle, but did not

cycle herself until she retired from this role. Kirsten saw herself as providing

encouragement to others to cycle (outward social influence), but her own decision

to cycle was perceived as intrinsically and pragmatically motivated. Clearly such

perceptions might be questioned, and in Kirsten's case it could be suggested that

there may have been a time delay between a period of influence towards cycling

and actually starting to cycle some months/years later. I am here focussing on

participants own explanations and perceptions of their cycling experience, rather

than trying to determine whether such perceptions are 'true' or 'objective'.

Bristol SRFG2: Kirsten Holme Female Age 60 (Friends of Molly Jenkins)

Int: Mmm. And just thinking about cycling and people who may have encouraged you to cycle? I mean, particularly you mentioned recently you've got a bike again and started cycling a bit. Are there any particular things which prompted you?

Kirsten: "Only that it fits with the way I wanted to do things anyway. And I had the luxury of the time to be able to do it."

Int: So, it wasn't any particular people that had started cycling or anything like that prompted you? It's been something that you've been thinking about for a while, or…?

Kirsten: "Well I've spent quite a lot of time in recent years trying to persuade other people to get on their bikes. And to make provision for cycling. And to make the bid for the Cycling City funding."

As well as not having or perceiving social influence, continuing resistance to such

social pressure was also mentioned by some participants, such as Hayley and Sarah

(Bristol SRFG1). Despite being encouraged quite strongly by others and wishing

themselves that they would cycle, it was not strong enough to overcome their

habitual travel behaviour and their anxiety about cycling in traffic.

> **Bristol SRFG1: Hayley Carter Female Age 26 Less than once a month/Never cyclist**
> **& Sarah Ubley Female Age 26 Less than once a month/Never cyclist**
>
> **(Friends of Lucy Minty)**
>
> Hayley: "Yes, definitely, yep. I think it's something you know you probably should do. You know, it's healthier, it's cheaper, it's kind of more eco-friendly. So there's a like, I think personally I feel that I should be doing it and I feel a little bit of guilt that everyone else around me is doing it and I just don't. So yeah, you are influenced by what other people are doing."
>
> **Int: Hmm.**
>
> Sarah: "I don't know, I've had a lot of pressure on me from people at work because a lot of people at work cycle. So, probably for over a year now I've had a lot of pressure on me to cycle and I still haven't. (laughs) But, you know, like you I feel that I should but I still don't. But that's why I've got the bike – I want to go out and improve my confidence and just see. But right now I just feel like I would be really scared."

7.1.2 Outward Social Influence

Often people were more voluble about their own influence on others, which I termed 'outward social influence', than they were about inward social influence. This may reflect some of our popular current Western cultural ideology, which stresses individual achievement rather than collective importance (Brewer and Chen, 2007). What also emerged from this theme was that people who don't themselves cycle may sometimes encourage others to do so, if they have other social contacts who do cycle. This is described by Sarah, below. However caution needs to be exercised with regard to the attribution of influence; a person may perceive that they have influenced another to cycle, but their input may have only been one of several motivators, influences or drivers which helped that person to make their decision.

In the extract below, three participants describe how they feel they have used

outward social influence to encourage others to cycle.

Bristol SRFG1: Sarah Ubley Female, Age 26 Less than once a month/Never cyclist, Amber Little, Female Age 26 Almost daily cyclist & Jane Potter Female Age 26 Almost daily cyclist (Friends of Lucy Minty)

Sarah: "Yeah, I encouraged my friend at work actually. Cos, Amber, you started cycling and I was telling my friend. And she wanted to lose weight and I was like 'why don't you cycle to work, that's a good way to exercise every day?' So, yeah, she's really happy, she's done it now. She's lost loads of weight and like loves it and is always trying to convince me now to cycle! So I get it all the time in work 'oh you should cycle.' (everybody laughs) So, she's like really really for it, absolutely loves it now, so."

Amber: "I got my Dad cycling again after, he hadn't cycled for years, because I owed him money and he didn't want to take it back off me. Cos he doesn't like taking money off me, so I bought him a bike instead! And he loves it now, he's always pootling round on his bike."

Jane: "I can't remember exactly the influences, but I'd say now at work about 80% of us cycle and it didn't used to be like that. But I can't remember who was first or who influenced who, so difficult one. I've probably had some influence, but I can't remember who started it. But it's quite good at my work now. The people that don't cycle are the people that live too far away. Everyone else pretty much cycles, so."

Sometimes people are conscious that although they have tried to influence those

around them to cycle it has not achieved any effect, as Ray describes below.

Cardiff SRFG4: Ray Preston Male Age 57 A few times per month cyclist

(Friends of Greta Mayer)

Ray: "What else have we done, I've tried to encourage my, one of my other brothers to cycle but with absolutely zero success (both laugh) as in giving him quite a nice bike and all the rest of it."

Although there was generally more ease and comfort in talking about outward

social influence, some people did describe their sense of discomfort and view that it

was imposing on others to encourage them to cycle. To illustrate this, Kirsten and

Adam discuss their approaches to outward social influence. Kirsten as mentioned

previously had recently retired, and had had a job which involved providing for

better facilities for cycling; in some senses encouraging others to cycle. Despite this

professional involvement with cycling she seems to feel uncomfortable about

encouraging others (outward social influence) on a personal level.

Bristol SRFG2: Kirsten Holme Female Age 60 Almost daily cyclist & Adam Garrett Male Age 54 Daily cyclist (Friends of Molly Jenkins)

Int: "Mmm. And obviously you've had a professional involvement as well. But since you've taken up cycling again is that something that you do as well personally, talk to people about it?"

Kirsten: "Well, people I know are aware that I'm doing it but I don't think that I've gone out of my way to suggest that those who are not already cycling should be. I think it's a bit of a cheek really."

Adam: "I tend to do it, when you get those comments from people saying 'oh I've had awful trouble parking', or 'I just sat in a traffic jam for hours.' Just with a throw away comment of you should just come round the side on a bike, you know. But I think you're right, if you're a cyclist people know you're a cyclist so you don't know whether that's working in their minds or not."

Kirsten: "I think quite a lot of people still think you're being a bit quirky."

7.2 Social mapping: examples, summation and refinement

As discussed in Section 5.4.5, as part of the interview process I asked the study participants to draw a social map. Here I explain in detail the purpose of these items, provide several examples together with analysis of them, and also discuss their strengths and limitations. I also suggest ways of making them a more effective research tool. The purpose of this research exercise was to encourage my interviewees to think about the factors which encouraged and discouraged their cycling; the map was a way of conceptualising the data in a different, more visual format and also a memory aide or way of focussing on the topic more closely. The social maps were instigated as a novel way of trying to capture some of the social influence and networks which were operating in relation to participants' cycling behaviour. Whilst these topics were discussed within the interview the social maps were a way of depicting a more visual sense of social influence.

As mentioned in Section 5.3.6 in SNA a 'name generator' tool is often used where participants are requested to give a set number of social contacts of a specific type or from a particular area of a person's life (Hawe and Ghali, 2008). For this study, however I wished to use a different and more visual research tool. The issues which were encountered with using the social maps and their limitations within the research process are documented further on in this chapter, in Section 7.3, but they did also provide some interesting and useful insights into cycling and social influence, which I will now detail further.

In total the research participants produced 38 social maps. In the Bristol Pilot Study four women and two men created them and in Cardiff 16 women and 16 men provided them. Therefore, 20 maps were drawn by women and 18 by men. The maps vary greatly in the amount of detail which they contain and in their manner of construction, which will be discussed later in this chapter.

When viewing all of the maps, a gender difference can be detected in their overall pattern; maps produced by women had a greater likelihood of looking more diagrammatical; more spider style diagrams were produced and sometimes little drawings of the participant were included. The maps produced by men were more likely to have a plainer, more list-like construction, although this style were also apparent in some of the social maps drawn by female interviewees. I did not provide any template or instructions for how to lay out the information, just that positive and negative sources of influence should be separated and written on the two halves of the paper and that the participant should write their name in the centre of the map. In the examples given below the interviewee names have been erased for confidentiality purposes, and their pseudonym has been written in at the bottom of the map, alongside the interview date and the location.

Interpretation of the map varied widely; some participants were more likely to cite a greater variety of influences which were more removed from their immediate social sphere. For example, some social maps consisted largely of names of people who were in their social circle, whilst others tended to also mention influence from wider

factors such as cycling groups, bike shops, and cycling culture generally in the area in which they lived. As has been mentioned in the discussion in Section 5.3.6, this is a much less familiar research tool for most participants and since the approach taken was fairly open and non-directive, this is likely to produce variation in interpretation.

Six examples of social maps have been presented, with a description of the map and analysis following each one. These examples were selected for a variety of reasons; to provide a range of interesting and heterogeneous maps, to provide a gender balance (3 women and 3 men) and to include some ethnic diversity and also responses from different age ranges. There is also an additional example in Appendix 8.

7.2.1 Social map one: Linda Cutler

Cardiff participant, Female, Age 42

positive

Speed of commute
compared to driving +
less stress.

Germaine –
especially advice
about kit etc.

People in the cycling
shop on Penarth Rd.

Reviews etc on websites
by other commuters when
looking at kit.

Cycling on the trail +
on holiday with my
family.

Having a husband who
used to commute to
work

negative

Sarcastic comments from
work colleagues (about
helmet/outfit etc) + my kids!

Not having facilities to
shower/change

Nowhere safe to keep
the bike

Poor gritting of roads
in winter

Having to spend ages
getting wet weather
kit on.

Linda's map is an example of the list type of map, and her positive and negative factors are a mixture of social, affective and practical factors. She has listed six positive and five negative factors, so these are fairly even; in quite a few people's social maps they could think of only one, or sometimes no negative factors. Linda mentions the speed of her cycle commute, assistance from a local bike shop and the usefulness of other people's reviews of cycling kit as wider encouraging factors.

The more personal factors which influence her include her husband having cycle commuted in the past so he is supportive of her cycling, and happy memories of cycling on cycle paths (probably the Taff or Ely trails, which are the main off-road routes following Cardiff's chief rivers) with her family. The only person she mentions directly by name, is a cycling instructor who she has had lessons with and who has been very positive and encouraging. This contact, has also been significant in helping other people in the area to cycle and is also a participant in the study.

In terms of her negative influences, these are mostly practical factors; poor road conditions in winter, the 'faff with kit', and the absence of any supporting conditions at work – no showers or facilities to store any cycling gear or clothing and also nowhere safe to store the bike. Linda is a teacher and in her interview transcript she talks consistently about the lack of any support from the school for her to cycle to work. She does mention one more affective factor, which is sarcastic comments from work colleagues about her cycle clothing, and it seems she also sometimes gets similar comments from her own children too.

Linda's snapshot of her current cycling from this diagram shows how she has an encouraging family climate for her cycling (apart from comments about her bike attire from her children), with additional helpful sources of support and advice on training and what bike and equipment to buy. She has to continually battle against the lack of provision and assistance at her workplace, where both the physical

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infrastructure makes it hard to cycle, and also the culture where she doesn't feel comfortable or 'normal' using her bike to get to work.

7.2.2 Social map two: Josie Ziller

Cardiff participant, Female, Age 35
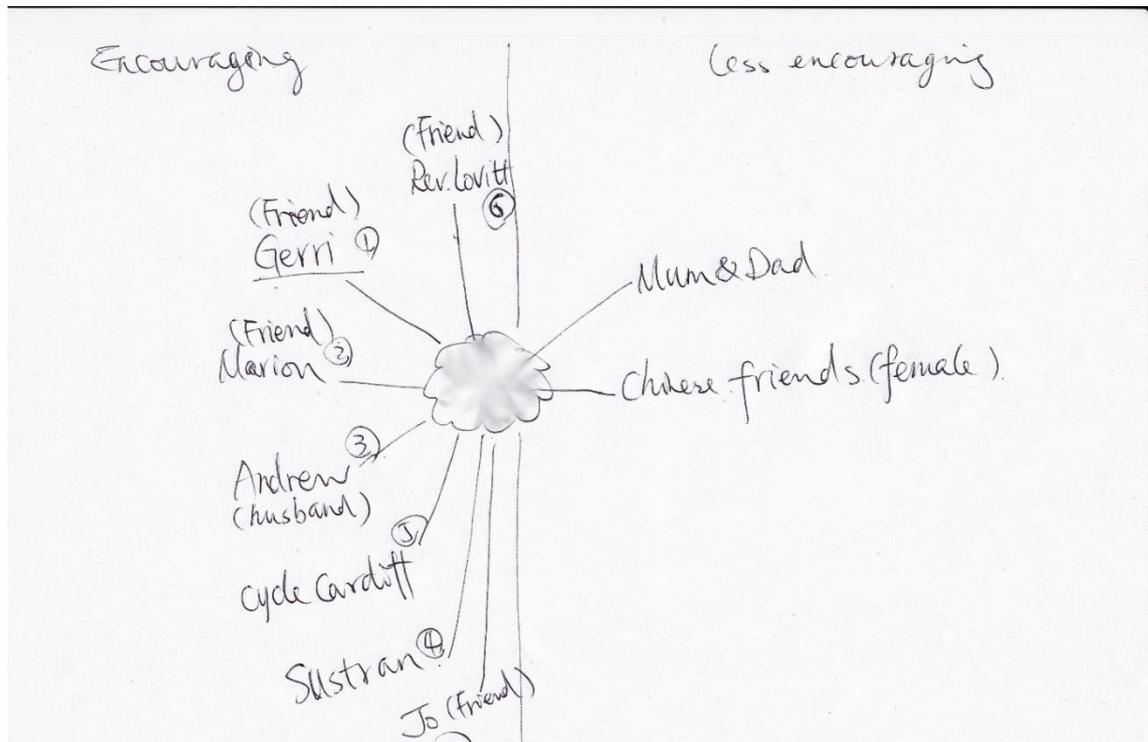
Josie, aged 34, is a personal care assistant who is a recent convert to cycling and enjoys using it to get to work, shops and generally around town. She was born and brought up in China, moving to England for her education. Her social map shows a more diagrammatic, spider-like style and nearly all of her influences are specific, named individuals. This was quite a common style among the female participants, less so with the male. Josie has also chosen to number her encouraging social

influences, to give some scale to the level of influence or encouragement which they have provided her with. This is an interesting aspect and one which could be utilised when using this method, if the desired aim is to provide a more numerical, tangible sense of the amount of influence given from each source.

Josie's circle of encouragement for cycling appears strong with her husband and four friends playing a supportive role (3 women and 1 man). This influence in her immediate social circle is backed up by what she feels is wider encouragement from two cycling groups; one national (Sustrans) and one local one (Cycle Cardiff). The largest source of encouragement, according to her numbering, is a friend who first supported her to cycle.

The discouraging side of the social map is not numbered, presumably as there are only two sources on it. This contains Josie's parents and also some of her Chinese friends, who are mentioned in her interview as being sources of discouragement due to her gender. Her parents and some friends believe it is "unladylike" (as described by Josie) for her to cycle and that she might injure herself due to the strenuous nature of riding. This belief is partly due to some people thinking that the typical Chinese physique of being slim and small, makes it hard for Chinese women to cycle. Given the high incidence of bicycle riding in China, this is perhaps a surprising viewpoint (Bell, Ge and Popkin, 2002). Josie has decided to ignore such viewpoints and enjoy her cycling. Her way of thinking about the social map can be contrasted with Linda's above, in that it is entirely cultural or social, rather than

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Linda's which focusses more on the practical aspects of cycling, and less on the

social side.

7.2.3 Social map three: Joan Christopher

Cardiff participant, Female, Age 27

Joan Christopher, 17/12/10, Cardiff
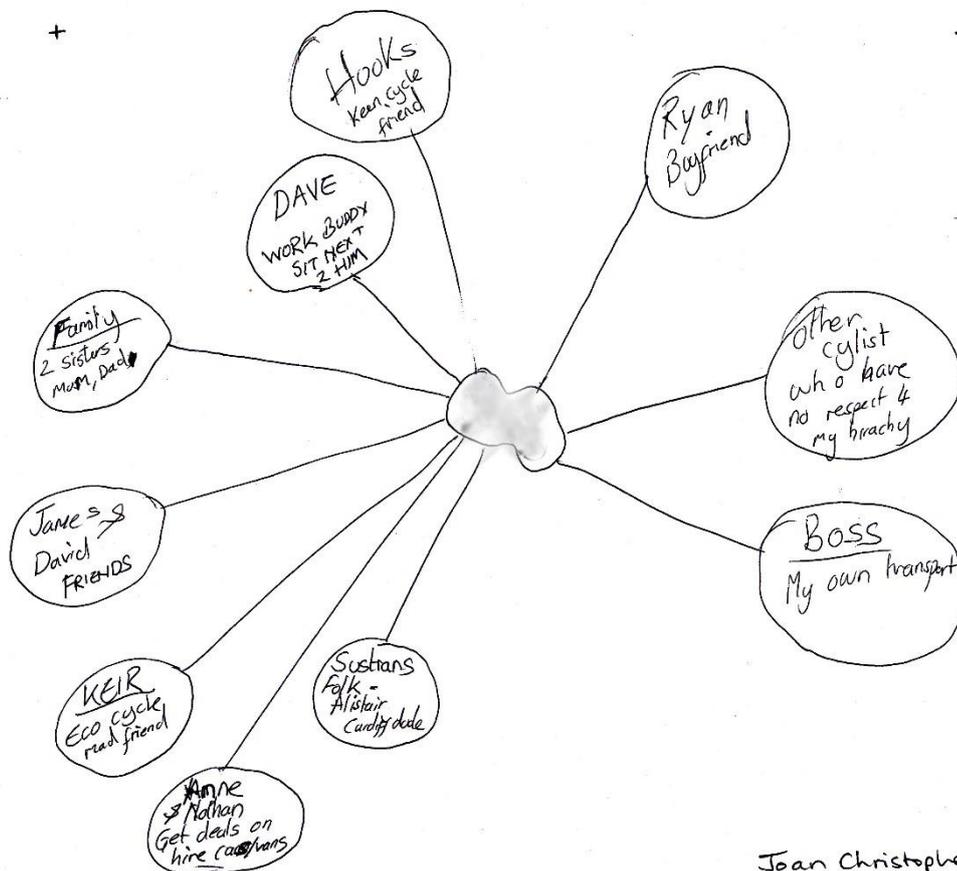
Joan, was one of the younger participants in my study, at 27, and used her bike to

commute to work and to get around town. She had biked since she came to Cardiff

as a student, and used it to get to and from a job in a nightclub with anti-social

hours, for which there was no public transport and taxis expensive and unreliable. She works as a Graphic Designer, and finds her workplace very conducive to cycling, but rather more by accident than design, in that it has plenty of space for storing her bike and wet kit and also a number of practical people who are happy to help with punctures and repairs.

Joan has written seven encouraging influences and three that are discouraging on her social map, which is in a spider-diagram style. Her influences are, like Josie, mainly named individuals who are close to her. Unlike Josie, some of the key figures in her life, such as her boyfriend and her boss, are on the discouraging side. In her interview she elaborates on why her boyfriend can be a discouraging influence; he is frightened of cycling himself in the current road conditions, and is also concerned for her safety when she cycles too. This is a more unusual dynamic than for several participants, where a key female figure in their life is worried about them cycling. The other discouraging influence she mentions is the poor behaviour of other cyclists, and she often feels that she has to compete with male cyclists who assume that she will be slow since she is a woman.

The encouraging side of her map contains several close friends and some work colleagues, her parents and two sisters, Sustrans, and also some friends from whom she can get deals on car and van hire which encourages her to remain car-free. Since Joan is willing to cycle despite some influential people close to her being discouraging about it, she appears to be strong willed and independent.

7.2.4 Social map four: Nat Winter

Cardiff participant, Male, Age 56

PROS

ECONOMY
HEALTH
ENVIRONMENT
CONVENIENCE
EFFICIENCY

CONS

DANGER FROM ROAD TRAFFIC
BAD WEATHER
POOR ROAD SURFACE
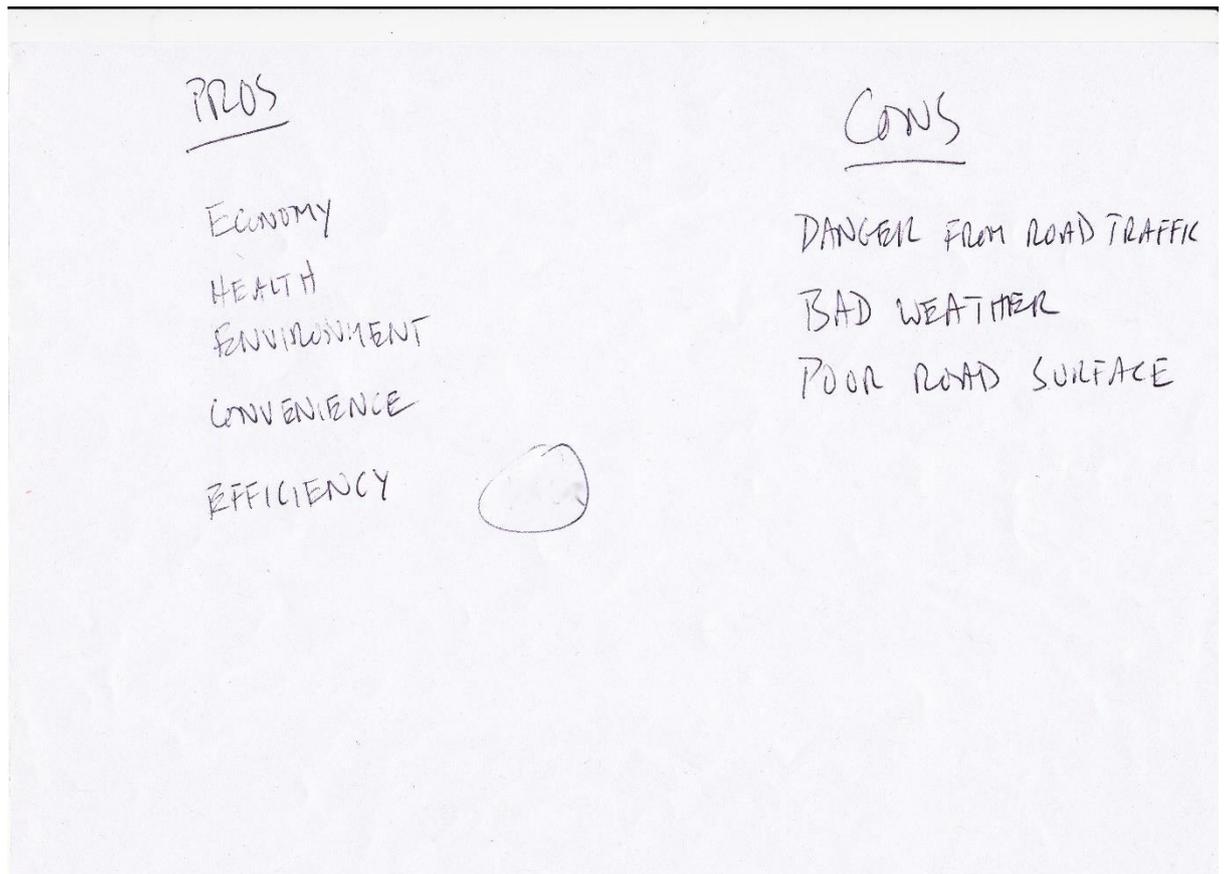
Nat Winter was a 56 year old Management Consultant who I interviewed in Cardiff in December 2010. His social map is very concise, is made in the form of a list, and is also rather imprecise in terms of the categories of things which he finds encouraging and discouraging; they are also mainly instrumental factors, rather than social ones. This is a snapshot of his encouraging and discouraging influences which focusses very much on the big picture or broad-brush approach.

Nat's encouraging influences are economic, health, environment, convenience and efficiency. In other words he cycles to save money, as exercise, for environmental reasons and also because it is quick and easy for him, often the quickest means of getting somewhere. He does not drive, although there is a car in the family. His discouraging influences are; danger from road traffic and poor road surfaces, which are often linked, and bad weather. Nat's way of interpreting the social map does not include any social or affective elements per se, and is exclusively concerned with instrumental factors and cycling conditions. Clearly, part of how you view encouraging or discouraging influences is in part dependent on how long established your identity as a cyclist or a person who cycles, is. Nat, who was in his fifties, had cycled for nearly all of his life and so had probably long since stopped feeling as though he was being actively influenced towards using a bike. Many of the other participants had a shorter, more recent or more intermittent identity as a person who cycles, and this will impact on how they perceive the task also. As mentioned earlier, some people also do not perceive that they are influenced by others in any way (as discussed previously in Chapter Four).

7.2.5 Social map five: Connor Mason

Cardiff participant, Male, Age 31

ENCOURAGING — DISCOURAGING

Hotmail & facebook "banter" for many & "competition" for weeks before & after event just — NOT forum — friends

Encouragement to do events but also to cycle to work

FRIENDS WHO I KNOW PRE-CYCLING DAYS – BUT WHO NOW SHARE MY CYCLING INTEREST 2-3 SPORTIVES PER YEAR

WORK COLLEAGUES WHO DONT CYCLE BUT EXPRESS POSITIVE INTEREST

4 WORK COLLEAGUES – WHO CYCLE & 'COMPARE NOTES'

PROFESSIONAL BUSINESSMEN SETTING EXAMPLE & OPENING MY EYES TO BENEFITS OF CYCLING TO WORK

FAMILY – STILL ENCOURAGING BUT PARENTS ABOUT CONCERNS ACCIDENT.

BROTHER – CYCLING WORK + CYCLING HOLIDAYS

ELEMENT OF PARENTAL & GIRLFRIENDS FEARS OF ACCIDENT.

WORK COLLEAGUES OCCASSIONALLY – RE: WET & DARK & COLD.

Connor, a 31 year old Social Worker, provides a very detailed and specific portrait of factors which encourage and discourage his cycling. He is involved in many types of cycling; commuting to work regularly (though not always due to the need to visit clients in many different areas), cycling races and events such as sportives, and also leisure cycling on holiday. Encouraging influence comes from all areas of his life. His family are supportive, although his parents, whilst generally encouraging, have expressed some concern (following a collision he recently experienced). His

brother also cycles and they have been on cycling holidays together, recently to Copenhagen to experience cycling conditions there. He is also encouraged by some older friends who have started cycling, work colleagues (even those who do not cycle sometimes take an interest), and also the wider social network around cycling in the area; as he describes it; 'Hotmail and Facebook banter'. A specific and important influence on him was a businessman he knew who first encouraged him to cycle to work and it seems dispelled some of his prejudices over what kinds of people would consider commuting by bike.

It is immediately apparent, in common with most participants', that he cannot think of many discouraging factors. Again, it must be remembered that the participants chosen for this study are all current cyclists, rather than being drawn from the ranks of those who have never cycled or have cycled and stopped cycling due to various circumstances. So, we can perhaps expect most people as a matter of course to feel fairly positive about their cycling; they are actively engaged in it, therefore they must be doing it for a reason. However, the amount of encouragement people perceive towards their cycling is more unexpected if we consider the general climate towards cycling as discussed in Chapter Two, and the status of people who cycle as 'other' or not participating in a 'normal' activity. Connor's two factors which he finds discouraging to his cycling are the concern from both his parents and his girlfriend about him having an accident on his bike, and the occasional commentary from colleagues over how could he cycle in the wet, dark and cold.

7.2.6 Social map six: Mark Walker

Cardiff participant, Male, Age 22

Encouraging.

→ Cost
→ Ease of parking.
→ Charity Rides with friends
→ weather (summer)
→ Environmental ?
→ Training for charity rides.
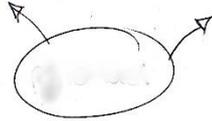
Discouraging.

→ weather (rain)
→ Lack of storage/changing facilities in uni
→ Parents reticence
→ Difficulties with ~~drivers~~ + pedestrians.

Mark Walker, a PhD student at Cardiff University, was my youngest interviewee, at 22 years old. He cycled to the University when conditions were good, but preferred to use other transport if it was raining, cold or icy. He lived some way out of the city centre and so would use his car for other types of journey. Mark's social map is simple, short, mainly instrumental in character, and is also in a list format. Encouraging factors for Mark are saving money by cycling, the ease of parking his bike compared with his car, riding in warm summer weather and feeling as though

he is helping the environment. He also enjoys training for and taking part in charity rides, which gives him some social time on the bike, as his commuting is by himself.

Discouraging factors for Mark are mostly pragmatic and include bad weather, difficulties with pedestrians when cycling and the lack of facilities at his work for both storage of bike clothing and kit and for showering. He has one social discouraging factor; his parents worry about his cycling.

These six examples have intended to show the various ways in which the participants in my study interpreted depicting their sources of encouragement and discouragement when cycling. As is apparent from these examples, different people conceptualised this task in various ways on a continuum from those who thought only in terms of their immediate named social circle as sources of influence, to those who approached it in a completely abstract and instrumental way, citing factors such as weather or environmental concern. Some participants struggled with the idea of specific people influencing their cycling behaviour and for those a more general picture of encouragement and discouragement emerged. I will now go on to detail some of the strengths and weaknesses encountered when using the social maps as a research tool, before discussing the image prompts used in the SRFGs, and then summarising the results of this chapter on social influence.

7.3 Social mapping: practical issues and taking them forward

The social mapping exercise, which was another novel aspect to the research methodology, proved to have a divisive quality. So whilst many people seemed to enjoy thinking about the map and about where different contacts or groups would be placed, others found it a challenging task. Whilst there were only four out of 42 participants who definitely did not want to proceed with it, the information provided in them was varied. The difficulties seemed to relate to a few different aspects of the social map process, which are discussed below.

7.3.1 Practical issues; what goes where?

Some participants, even after the mapping was explained, had difficulty in understanding, what they should put where and which side should be used for encouraging and which for discouraging. I amended the map, so that a plus and minus sign were included at the top on either side of the sheet of paper, to give a clearer signal as to what type of influence to put where. Participants also occasionally had difficulty in deciding on the exact distance to place the different sources of influence to show their degree of impact on the participant; this may of course not always be static, but the degree of influence from a particular source could vary depending on many other factors. It might be useful in future research work to mark concentric circles on the page, to make a more formal concept of distance, but on the downside this does limit people's freedom or force them to make particular choices about placement.

7.3.2 *Smaller/dispersed social network*

When I undertook the Bristol pilot study, one of the first things I noted in my research diary, after a couple of interviews, was that one of the potentially problematic aspects of the social mapping was the limit of people's social networks. Whilst some may have an extensive social network who they feel has some positive or negative influence on their propensity to cycle, this will certainly not be the case for all participants. There are two main aspects to this; a) that the participant simply does not have many social contacts or, b) that they do not have any/many contacts who they feel have any knowledge of or influence on their riding their bicycle. There are likely to be both temporal and geographic dimensions to this issue, since at various points in their lives even those with large social networks may find themselves socially isolated. Different personalities will also have varying needs for social contact. Some will prefer to be largely self-sufficient and/or favour a small group of closer contacts rather than a larger network of people who are only superficially known. The geographical aspect to this issue, as mentioned in Section 5.4, relates to the greater dispersal of many people's friend, family and even colleague social networks (Damette, 1980). All of these aspects might cause confusion or embarrassment for the participant when filling out the social map, due to the lack of people they might be able to name.

7.3.3 *Disclosure/psychological vulnerability*

Another aspect of this is how participants might feel about writing down their contacts on the social map, and how they may be portrayed. This obviously

involves some degree of disclosure, perhaps more so than a straightforward interview, where the interviewee decides what and when they tell you. There is perhaps something more concrete about writing your contact circle down. Also people may feel uncomfortable about naming people they know as less positive towards cycling and worry that these contacts may see themselves as less supportive; again the greater tangibility of the social map versus the spoken word could be a factor here.

7.3.4 Ways of future refinement and improvement of the tool

There are numerous ways in which the social mapping might be refined or used in different ways. For example, depending on the focus and rationale of a research study, it may be an appropriate strategy to use mapping prior to interviewing to find out about a social network at the outset. The maps could then be used as a focus for questioning in the interview. However, to use the mapping in this way is likely to require some 'ice-breaking' or warm-up period, given some of the discomfiture which some participants may feel in doing such an exercise at the start of an interview.

7.4 Image prompts

When I conducted the SRFGs I decided not to use the social mapping tool for several reasons. I thought it would take too long and be too confusing with several people involved. Also, not everyone in the SRFGs was a cyclist and so they could not all complete the social map which was precisely about how others had influence on their cycling. Additionally, I wanted to try a different technique which would open up group discussion, rather than one which would focus inwards on individual participants. I did want a way of opening up discussion generally about cyclists and cycling though, and so decided to use a collection of photographs of cycling.

The images used were of many different people cycling; some who looked as though they were commuting or travelling to the shops, some who looked as though they were leisure riding and others who were sports or performance orientated. Their clothing was varied, with some wearing lycra, some wearing 'protective' gear such as hi-vis vests or jackets, and some images contained cyclists wearing helmets and others not. I also selected images which depicted single people cycling, couples and family groups, as well as trying to show some diversity in terms of the gender, age and ethnic background of the people in the images.

The photographs were used as a discussion prompt, linked in with the question prompts from my moderator's guide (Appendix 5) which asked SRFG participants about their views on positive and negative portrayals of cyclists. I have provided a selection of material generated by the image question prompts below, as an illustration of the themes which were generated from this discussion. Since, as discussed in Section 5.5.2, there were fewer SRFGs than originally envisaged, and fewer participants in them, the image prompts did not provide as rich a source of data as anticipated. Nevertheless, the themes below do reinforce and highlight some of the attractive and less attractive assumptions about cycling, and play a small role in answering some of the original questions which I wished to answer in this research.

7.4.1 PPE; cycle clothing, helmet wearing and use of lights

In several of the SRFGs participants noticed that some of the people in the images were not wearing helmets and this usually started a discussion which was censorious of people who did not choose to wear one when cycling. In the UK, as discussed earlier in Chapter Two, helmet wearing is not mandatory, but is strongly condoned within much of the current dominant cycling culture (Mullan, 2003). Helmet use is part of what is sometimes termed PPE (personal protective equipment), which includes wearing bright, fluorescent and/or hi-vis clothing and different clothes for cycling than what you wear for the rest of the day, meaning that changing and/or showering may be necessary at your destination.

This UK cycling norm is different to many countries with high cycling levels such as Germany, Holland or Denmark, where the wearing of ordinary clothes is much more common, and the pace of cycling is slower. The activity level of cycling in such countries makes it much more analogous to walking, rather than a sporty activity pursued for fitness which is more apparent in the UK.

Cardiff SRFG1: Megan Darnton Female Age 37 Less than once a month/Never cyclist (Colleagues of Jenny Durrant)

Megan: "And flat and quite pleasant. It makes it look appealing. A couple of them haven't got helmets on which I don't think is a very good advert for cycling. They should all have helmets on, other than the ones that are standing having their photo taken of course."

Discussions often moved on to other aspect of PPE, such as not wearing hi-vis, fluorescent or bright clothing when cycling. In the following dialogue two participants who are reluctant to wear hi-vis conform to the group norm that such clothing should be worn.

Bristol SRFG1: Jane Potter Female Age 26 Almost daily cyclist & Amber Little Female Age 26 Almost daily cyclist (Friends of Lucy Minty)

Jane: "I wouldn't even have thought of buying one (hi-vis tabards/jackets) until the fact that you, you all wear them… And like you said, 'oh you must'. But it wouldn't have crossed my mind to buy one."

Amber: "When I first started wearing one as well I felt like a bit of a loser, but now everyone's got them, everyone's got the proper coats and stuff which cost about £40 whereas I've just got one that you just throw over the top that hardly cost anything. But I think a lot of people are a lot safer now than they were."

7.4.2 *Group cycling*

Images of a large group of people cycling together elicited a mixed response; for many it was intimidating, especially for those less used to cycling or who felt less confident. Typical of this kind of response was Paula.

<div style="border:1px solid black; background-color:#d9d9d9; padding:8px;">

Bristol SRFG2: Paula Krisp Female Age 62 Less than once a month/Never cyclist (Friends of Molly Jenkins)

Paula: "Probably this one; in a mass with no cars and a great group of people. Though, no, that wouldn't suit me terribly because I wouldn't want to be in a crowd. I'd probably feel really, um, wobbly. With all those people around I'd need to have a big space. I'd need to be at the back."

</div>

For others it felt restricting, rather than concerning, in that you needed to cycle with the group and were not free to stop when and where you wished, Gill describes this.

<div style="border:1px solid black; background-color:#d9d9d9; padding:8px;">

Cardiff SRFG4: Gill Doynton Female Age 55 Less than once a month/Never cyclist (Friends of Greta Mayer)

Gill: "I'm rather like you actually I wouldn't like to cycle in a large group of people, I think I find it too restricting in terms of you know sort of stop off and look at things and go to cafes and mess around and all the rest of it."

</div>

7.5 Summary and discussion

To summarise the findings of this chapter so far, there have been three main sources of data which I have drawn on in answering the research questions pertaining to social influence (Section 1.4.3). The most important source of data was the transcripts from both the individual interviews and SRFGs, from both Bristol

and Cardiff. The following key themes were identified with relation to social influence as it connects with people's cycling.

From the individual interviews the social maps drawn by participants helped to provide a picture of their 'social influence world' with regard to cycling. Some sample social maps were provided previously in Section 7.2, and the strengths and weaknesses of using them as a research tool, together with suggestions for future improvement were given.

From the SRFGs the photographs of different 'types' of cyclist helped to generate conversations about how people cycling are viewed by others and how this related to their own attitudes towards cycling. These image prompts and the conversations they generated were discussed in Section 7.4. This provided a means to explore perceptions of cycling as a practice, the cyclists themselves and cyclist behaviour.

Whilst the method used has enabled aspects of social influence to be foregrounded in the discussions with interviewee and focus group participants, there are clearly questions around how to conceptualise the social influence described. In common with much qualitative research, I view the data production process as only producing a version of 'reality'; my portrayal of how the participants viewed and recognised social influence relating to cycling. Since, as has been mentioned, social influence may be unrecognised or denied due to prevailing cultural norms of

independence, it may be that more social influence was present than participants described.

In acknowledging this I have taken a stance to the material which follows a largely experiential rather than critical qualitative approach (Braun and Clarke, 2013), in taking participants' views about influence at face value. However, I have also highlighted instances (in Sections 7.1 and 7.3 for example) where social influence seems more apparent or to be working in different ways than participants' may have articulated it. In this research study I have provided a window by which inward and outward social influence (as it pertains to cycling) can be viewed, but there are aspects of social influence which may be unrecognised, unacknowledged or too uncomfortable to express by participants. Other future research may be able to focus on any differences between levels of influence and how those levels of influence are portrayed by research participants.

Chapter 8:   Discussion and conclusion

In this, my final chapter, I provide a summary of the purpose, process and findings of this doctoral research into cycling experiences. I situate my findings related to gender and social influence, from Chapters Six and Seven respectively, in the context of the literature which was reviewed in Chapters Two (Policy and History), Three (Gender) and Four (Social Influence). Following this, I evaluate the effectiveness of the methodology and provide suggestions for future improvement and refinement. Consideration is then given to the policy implications of this research, and finally, I conclude with suggestions for future research which could build on these foundations.

8.1 Introduction and objectives of the research

With this research I intended to make an in-depth, qualitative, investigation into cycling, informed by both feminist and structure and agency theoretical perspectives. I wanted to find out about the everyday experiences of existing cyclists; the items which both encouraged them to cycle and discouraged them from cycling. With this study I also wished to identify and examine any differences between men's and women's experience and find out how gender impacted upon their cycling experience (if indeed it did at all). I also sought to examine how social influence operated amongst my participants and their individual networks of friends, family and colleagues, and to ascertain if there were any detectable gender differences within this social influence also.

8.2 Summary of the research findings

In this section I précis the gender related findings from Chapter Six and the social influence findings from Chapter Seven with reference to my research questions.

8.2.1 Gender findings

In Chapter Six I outlined my findings relating to gender, which answer my first research question; in what ways do men and women perceive barriers to and enablers for using cycling as a mode of transport for utilitarian, commuting and leisure needs? I generated five themes using the data, which presented the range of people's cycling experience; Affective Barriers, Affective Enablers, Instrumental Barriers, Instrumental Enablers and Gendered Aspects of the Cycling Experience. Each theme was sub-divided into key sub-themes. Two cycling profiles were also provided as a way of forming an individual and personal perspective on participants' cycling experiences; both accounts illustrate the plurality of cycling trajectories.

A range of affective or emotional barriers were identified, and the most salient of these can be described as the challenge of navigating what could at times be hostile, aggressive and often unsafe spaces on a bike. Accidents, abusive behaviour, collisions and other distressing experiences when cycling were mentioned by many participants; and for women these sometimes included an extra gendered component of a sexual nature, as Catherine and Joan illustrate (Section 6.4.4, p.201). Since by definition all of my participants (current cyclists)

were still riding such experiences had not deterred them. However, they employed

a number of adaptive strategies to assist them with continuing to cycle; denial,

using only selected traffic-free routes, cycling at quieter times of day, changing the

types of cycling journey they made or which areas they might cycle in. This study

did not set out to examine how such aspects deterred people who were not cycling

from doing so, or what the attrition rates from cycling were with people choosing

not to cycle any more – but this would be an interesting avenue to follow for future

research. To date cycling research has tended to focus on how more people can be

persuaded to cycle, rather than how existing cyclists could be supported to

continue to/extend their cycling.

Social role differences relating to appearance expectations between men and

women were described; women and men felt women were under greater pressure

to look attractive and presentable, although there were pressures on both sexes.

Such social norms or pressures could clash with cycling, especially with long

journeys, fast speeds, inclement weather, lack of changing, drying and storage

facilities at work or an individual's particular orientation to this aspect.

The obvious enjoyment which many participants gained from cycling was illustrated

by the comments in the Instrumental Enablers theme; Achievement, Enjoyment and

fun, Freedom, Health and fitness, and 'Outdoorsyness' codes. The joy of cycling,

especially on a sunny day, was composed of aspects of enjoying the exhilaration of

the embodied aspects of moving in the landscape, interacting with the environment but having some time and space for yourself away from the other pressures of life.

For some interviewees being outside, 'in the fresh air', and the physical challenge of cycling, and sense of personal achievement which accompanied it were particularly important. These aspects of cycling clearly countered some of the affective barriers mentioned previously.

The more classically studied instrumental barriers and enablers were also mentioned by participants as important aspects of their cycling experience. Ongoing struggles with the everyday pragmatic issues of less than ideal facilities for cycling and 'faff with kit' were often discussed. Bike security problems also caused concerns and affected the type of cycling which people would undertake and the locations they would visit. Maintaining bikes, especially the frequently encountered puncture, was not something which many wished to do, and sometimes meant that bikes would remain out of action before they had chance to repair them. A few participants in contrast, did like doing their own maintenance, and one had even assembled their own bike.

Difficulties sharing the existing road infrastructure with car drivers and on shared traffic-free routes with pedestrians were highlighted by many participants. Since in Bristol and Cardiff/Penarth (together with most areas of the UK) cycling on roads mainly involves sharing space with moving motor vehicles and parked cars, and

traffic-free routes are usually shared with pedestrians, such conflicts over the space are inevitable at least some of the time.

The more pragmatic or instrumental enablers which were important to participants in this study were the cheapness and quickness of the bike, especially in an urban context where the flexibility of the bike means being able to pass other traffic or use other short-cut routes. The existing infrastructure which was in place, was on the whole valued (apart from a few counter-veiling voices), and participants often talked about specific routes which they would use in preference to others, and had in some cases deliberately decided to live close to, to facilitate access to cycling.

Areas where there was particular gender difference as described in Section 6.8, were; greater pressure over appearance concerns for women, the 'tomboy' nature which some participants ascribed to themselves, other transport usage and cycling with children. Whilst gender differences were detected in a number of areas; some were subtle, nuanced or counter to what might have been expected. Overall, there seemed greater similarity for male and female participants than difference, in the affective and instrumental challenges which they faced and the pleasures which they enjoyed with their cycling. Some additional challenges seem present for many women in terms of the nature of what could be an aggressive and hostile environment, and the additional social pressure on women's appearance, especially in a work environment.

8.2.2 Social influence findings

In the next Chapter, Seven, I described and summarised the data relating to social influence, and what the key findings of my analysis of this material were. Both inward and outward social influence were described by participants and for some had had a distinct and discernible influence on their decision to start (or more often re-start) cycling. From the evidence produced from this study, person-to-person social influence from friends, family and colleagues is an important aspect in the picture of people being encouraged to cycle. However, inward social influence was sometimes disregarded, not recognised or simply not a factor for people, especially if they had been cycling for a long time and did not recognise that there was any longer any particular influence on their cycling. The small numbers of participants in this study, and in particular in the SRFGs mean that any conclusions in the area should be seen as tentative.

Many interviewees were comfortable with describing outward social influence, and some felt they had achieved success in encouraging others to cycle, especially when a group of new cyclists formed so that there were mutually reinforcing elements. However, other people felt uncomfortable with the idea of encouraging others to cycle; as one participant described it; 'a bit of a cheek'. No distinct or definite patterns of gendered social influence were found, other than friend or colleague groups are often composed of individuals of the same gender, and so these may be more likely to be influencers for many people.

The social maps which were used in Stage 1 of the data production process were used as a tool for participants to show their positive and negative social influences on their cycling behaviour. Most participants drew maps which emphasised more encouraging social influences rather than discouraging influences, although some maps were much more orientated to instrumental influences rather than socially orientated. One gendered pattern which was found, was that female social contacts were more often cited as discouraging, by virtue of their sometimes greater level of safety concerns about the person who was cycling.

8.3 Effectiveness of the research methodology, and thoughts on improvement

For this research I tried a novel research methodology (see Section 5.3.6), involving in-depth, semi-structured individual interviews and then SRFGs with members of their family, friends and colleagues. I will now review this method as it worked in practice and make suggestions for future improvements. In both Bristol and Cardiff I had an enthusiastic response from research participants. In Cardiff I interviewed a total of 34 people over the 6 month-long data production period. As well as engaging well with me and taking the time to be interviewed, some participants provided me with supplementary information which they thought I would be interested in; a Master's degree essay on cycling in the city, and in another case a story of cycling experiences over the life course. Such interest and engagement may be partly in response to cycling's marginal status (Fincham, 2007) in present

day UK society, and hence a desire to share experiences with someone who is interested in the topic.

Continuing to the second stage of SRFG interviews, in Cardiff however, proved to be even more challenging than had been expected from the Bristol pilot study. A total of five second stage 'focus group' interviews were conducted, making a conversion rate of 1 in 7, which was considerably lower than the 1 in 4 experienced in Bristol. The numbers of individuals in the secondary interviews was also small, so the range of views expressed would not be as wide as in a standard focus group. Such factors undoubtedly have impact upon the degree of validity and reliability of the data collected. The boundaries between the stages was to some extent blurred, since some Stage 1 participants told individual friends, family and colleagues, who I then went on to interview; similar to snowballing.

However, as the aims of this doctoral research were to both collect novel qualitative data on gender perspectives and cycling, and to trial a novel methodological approach, this innovative aspect must be borne in mind. The risk of data production being more challenging due to such aims is apparent, and despite the lower than anticipated number of SRFGs valuable data has been gathered and insights received into how such an approach might be tried again in future. I will now account for the difficulties involved in the process and provide some suggestions for future improvements.

A significant part of the difficulty of recruiting participants to the second stage of the research, the SRFGs, lay with a lack of time for people to organise them. Since participants had already taken part in the study, and may have been interviewed for an hour or more, they may well have felt that they had already invested enough in the study. After having difficulties with progressing to the SRFG stage I decided to send each participant a short email question with set responses to try and ascertain the key barriers to progression. Several of these were unsurprisingly not returned, however.

The question with five pre-set responses was as follows (numbers of responses are the bold numbers following each response):

I would prefer not to take part in the focus group stage of the Cycling Stories research project because (please tick one option):

1) It's too much hassle for me (**2**)

2) I don't want to bother people I know (**5**)

3) I'm worried others might find it boring (**1**)

4) I don't like the idea of others discussing me (**2**)

5) Other – please specify (**6**)

    i)   I can't think of a group to get together

    ii)   My contacts are too busy

    iii)   I have a limited circle of acquaintance

    iv)   Time pressures

v)   Contacts are currently going through difficult circumstances

vi)   Time

I had requested that each participant choose only one of the options from the list, but several people had selected more than one, so I decided to include all of these.

Time was mentioned by a few of those who did reply, and also the organisational complexity of arranging for several people, potentially from both different spatial and personal spheres to come to one location. When people live in different areas of the city it may be difficult to decide where is the best location for them to converge which will cause the least amount of disruption for them. Although I did offer to do this part of the organisation myself, people might have been reluctant to pass this on to me, as an unknown researcher. They may have been concerned that I would have organised things in a differently way to them, made arrangements that some of the participants were not happy with, or perhaps repeatedly contact people in an intrusive way.

Not wishing to bother people they knew was clearly a significant factor for several people. Whilst they may have been willing to be involved in the study due to their own interest in the subject matter, 'recommending' that friends or family participate was clearly a barrier. For a smaller number of people the largest issue was others discussing them or fear that their contacts might find it boring to participate. There was also the issue, mentioned by one participant of the particular life circumstances of their social network, or some members of it. If people you

know are having challenging circumstances, such as bereavement, economic problems or other difficult experiences, you may be very reluctant to ask them to participate in research, which could feel very peripheral to them. All of these factors may be barriers to people wanting to involve others in Stage 2 of the research.

8.3.1 Potential ways to improve on conversion rates in future research

One factor which is likely to impact on the instance of social contacts participating in the second stage of the research is to lower the suggested number of contacts required for the SRFGs. Whilst this 'lowering of the bar' on numbers is contrary to suggested best practice for focus groups (Krueger and Casey, 2000), for this particular type of research focus the primary importance is on the views of some social contacts of the initial participant, rather than necessarily the range of those views. Taking this perspective a stage further, another tactic which could be employed is interviewing a single contact of the original 'ego.'

Both of these changes would be likely to increase numbers of secondary participants by reducing the burden upon the initial participant; it is considerably easier to think of one, two or three contacts who might be interested rather than four to six. I considered these options for this study, but elected to trial the more challenging option of attempting recruiting for full focus groups.

In practice, I did in fact interview several people who were an individual contact (alter) of an initial interviewee (ego). This happened as people who had heard of or participated in the study were sometimes enthusiastic to pass details of the study onto other people they knew, who then wished to be interviewed. So the lines between these people and those who participated in the SRFGs were sometimes blurred. For example, on one occasion I had arranged a SRFG with two participants, but on the day only one person was able to be present. Some initial interviewees were particularly well connected with others who cycled, were involved with cycling professionally or were simply cycling enthusiasts. Some of these people provided me with both further individual interviewees, and participants for the SRFGs. If the two stage process had involved simply interviewing one individual from the social network of the original interviewee, then the success rate would have been higher. Since I was primarily focussed on how social influence was operating in a cycling context, I believed it was important for the second stage to involve groups, whereby members could discuss the cycling of the original interviewee.

It is also useful to reflect on how integrated the two stages of the research might be and how this may impact on successful conversion from Stage 1 to Stage 2. The recruitment strategy could have asked at the outset for only participants who were willing to progress to the second stage, resulting in a lower initial take up as only those who were willing to give a greater degree of time and effort to the study would have responded. However, it may have resulted in capturing those who were fully committed to both stages of the research process and so having a higher

degree of persistence in encouraging their social contacts to participate. I had

thought that a gradual and more 'softly softly' approach would yield better results,

since I would hopefully have developed a good rapport with some interviewees

during the course of our interactions, which might encourage their desire to

continue with the research. Further research might test whether in fact turning this

idea on its head and recruiting both to Stage 1 and 2 at the outset may yield more

beneficial results.

Of course another way of dealing with the progression to the different stages of the

research may have been to employ more flexibility, and to recognise that there

would in fact be three groups of people; original individual interviewees, individual

interviewees who were social contacts of the first group, and finally small focus

groups formed of the social contacts of the original interviewees. Whether this

more continuum approach (which more accurately reflects what happed in

practice) was adopted, would of course depend on precisely what a researcher was

seeking to answer and how they believed it could best be answered.

Finally it must be acknowledged that recruitment to all research can be difficult and

that a pragmatic and flexible approach to the recruitment strategy may often have

to be employed, regardless of researcher preference. This is even more the case

with a novel and more challenging methodology such as that employed in this

study. As Braun and Clarke state; 'recruiting for and organising focus groups can be

some of the most time-consuming aspects of focus group research. Recruitment is

a challenge because it involves getting numerous individuals together in one place' (Braun and Clarke, 2013). So, for anyone using the methodology which I have used in this research, they would need to be aware and mindful of the particular challenges which recruitment to a two stage process involving focus groups would involve. In answer to my fourth research question, the SRFGs would seem to have the potential to provide a consistent and dependable method of examining social influence in relation to men's and women's participation in cycling, but noting the caveats which were discussed above. The suggestions outlined for improving this method may help to improve the conversion rates which could be achieved and therefore the reliability of the technique.

8.4 Policy implications and recommendations

I next detail some possible ways for policymakers to use this research to encourage greater participation in cycling by women. As previously mentioned, according to Aldred *et al.*'s (2015) study of cycling levels from census data, in areas where cycling is increasing, there is currently little evidence that it is becoming a more equal activity. In areas where cycling is increasing, presumably due to better infrastructure, more cultural acceptance of cycling, or both, more men are starting to cycle, but not more women. The key considerations here then are; why is this the case, and also, what could be done to increase diversity in cycling? If this research does indeed paint an accurate picture of current cycling patterns then it is clear that

efforts to encourage specific groups to cycle must be made if we wish to achieve a more egalitarian cycling culture.

As shown in this study, cycling is often practised and depicted in gendered ways; most marketing and information related to cycling shows men rather than women, and sporty/PPE bikes and clothing, rather than everyday casual clothing and no helmets. On the other hand, as participants have discussed, an overtly 'feminine' stylising of women's cycling will similarly not appeal to all women. Rather, ways to attract more women to cycle could include more inclusive marketing which shows much greater diversity of women cycling (a range of cycling attire, women of different sizes, different clothing and levels of 'smartness' or presentability), for a variety of different purposes (sports/leisure/commuting/social and shopping trips). Women of different ages and showing greater ethnic diversity would enable a greater variety of female cyclists to be 'visible'.

Drawing on the responses from the participants in this research (Section 6.8.1) it will be important to represent a number of different ways of being a woman on a bike. For some women (Anne, Int. 18) the more 'feminine' or 'girly' cycle clothing is something they may wish to embrace, and mark themselves out as having a different look from men cycling by wearing pink for example. For others such as Catherine (Int. 4), this is something they react strongly against and would like to see a range of colours, styles and designs which are not specifically 'gendered.' Campaigns to encourage more female participation in cycling need to be mindful

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not to simply re-inforce gender stereotypes, but find ways to depict and provide for all types of women cycling. The 'everyday' nature of cycling and the depiction of 'ordinary' women seems to be being lost or marginalised.

8.5 Future research

This research, conducted on a minimal budget, with one researcher was small scale and exploratory in nature. There are a number of ways in which the research could be built upon by researchers interested to develop this field of work and some of these are briefly considered below. One of the ways of adding to our understanding of the material produced during this study would be to expand the research design to new locations to produce a comparator. Some of the high cycling locations in the UK, such as Cambridge, York or Oxford could be used as research locations, perhaps also utilising the other end of the spectrum; UK towns and cities where cycling is practically non-existent.

This idea could of course be expanded to look at different countries also. For example the experience of cycling for both men and women in low cycling and high cycling countries could be examined. How do women's and men's experiences of cycling differ between the capital cities in high cycling and low cycling countries. Such research could help us understand how some of the cultural practices involved with cycling are enacted in different cities and different countries, and provide a

fuller understanding of how barriers are operating in different ways to prevent a more egalitarian and equal cycling experience in some locations.

Action research could be used to trial ways of encouraging more women to participate in cycling; using buddies or groups to help overcome initial difficulties, which may be present when switching to a different mode of travel for some or all journeys. Quantitative survey work could build on some of the gender and social influence findings by assessing the relative importance of different aspects of the findings. Social network analysis using name generation could also map people's spheres of cycling influence and provide a measure for the degree of influence which different operators might exert, which were outside the scope of this study.

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Appendix 1: Example of reflexive diary data production entry

Cardiff interview 10: Thomas Winton, 4ᵗʰ November 2010

Summary: Cycling enthusiast in his early thirties. Interviewed at City Hall, certainly the grandest of all the council offices. Short answers, and occasionally a little guarded, but was enthusiastic about contributing to the research. Short interview, partly as he did not have much experience of some of the categories. Has an 'essential car user' paid car parking space at work and perceives that he needs the car for site visits, so is sometimes discouraged from cycling due to this. Very much committed to cycling on traffic-free routes, both himself and his partner. Both use the Taff Trail to commute and are now actively seeking a house near to it so they can continue to use it. Thomas feels he would not cycle nearly as much if the trail was not there, despite being a regular cyclist for around 20 years.

Learning point: Contrary to popular thinking on cycling development, it seems not everyone develops more road liking/tolerance or more confidence in riding in traffic over time. Cycling confidence is not necessarily a linear process; it may remain stable at the same level, as Thomas describes or even go down, perhaps after an incident or collision. Also, there are clearly multiple aspects to confidence; someone may be technically very proficient at riding the bicycle as a vehicle and have a lot of confidence about this aspect, but that does not necessarily conflate to having confidence at riding in busy and/or fast moving traffic. These aspects are usually combined into one stock 'confidence' level in research studies, can they be separated out in some manner?

Appendix 2: Reflexive diary entry on improving my interview practice

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Bristol interview 1: Tristan Evans, 29th April 2010

Summary: Impressions of participant; friendly and keen cyclist in the mold of 'CTC'. Cycled a lot as a child and then re-discovered it around age 30. Doesn't see the need for infrastructure, thinks more people cycling = more people cycling. Noticeable that other male figures on his social map are seen as positive influences/reinforcers of cycling, whilst female figures only on the negative side – mainly due to worry/concern about safety. Interesting also that mother thought of as a negative factor even though he grew up cycling and was often injured as a child – shift in mother's attitude?

Notes on conducting the interview: This was my first interview and I think I managed to do everything wrong. So, plenty of learning points for the future. I wasn't able to give all of the paperwork on the day, due to the timing of the interview before everything was completely finalised, so sent them retrospectively with an SAE. Generally the interview went well, he was a talkative and interesting interviewee. It lasted 50 minutes, so kept to time with a few minutes wrap-around time either side. I took two digital recorders, the official UWE one (Edirol) and my own small Olympus. Didn't feel that au-fait with them beforehand, though had tested them and checked the batteries. In the end the UWE did not record the interview, only 49minutes of silence, so I was extremely glad I had the back-up of the other one. I had thought taking two was somewhat unnecessary, but this proved not to be the case. The interviewee seemed slightly puzzled by the social mapping exercise and didn't give many individual names, often referring to groups and online communities. In general something which hadn't occurred to me is that people's everyday social networks may be quite small/limited, or that they may view their social network of only consisting of their immediate family, or only close friends. It will be interesting to see how this develops with successive interviews. Does the social mapping actually help to introduce and cement the idea of gathering social contacts for Stage 2, the SRFGs? This participant seemed willing to consider the second stage, again will have to see how this works as the research progresses.

Cycling stories: what are your Bristol cycling experiences?

Do you cycle in Bristol?

Would you be happy to be interviewed about your cycling experiences by a researcher from the University of the West of England?

It will take no more than an hour and you will be given a £10 voucher as a thank you for your contribution.

Interviews can take place at a time and place within Bristol to suit you.

If you are interested, simply get in touch with me, Anja Dalton:

Tel: 07963 831882   Email: anja2.dalton@uwe.ac.uk

Post: room 4Q53, university of the west of England, frenchay campus,

Appendix 4: Bristol participant information sheet

Faculty of Health and Life Sciences

School of Health and Social Care
Blue Lodge, Glenside Campusv
Blackberry Hill, Stapleton
Bristol, BS16 1DD
T: 07963 831882
E: anja2.dalton@uwe.ac.uk

Study title: Cycling experiences, Bristol

Invitation to take part:

This information sheet gives you more information so that you can decide whether or not you would like to take part in this research project, called 'Cycling experiences, Bristol'. This research will be undertaken as part of my doctoral research (PhD) in the Faculty of Health and Life Sciences at the University of the West of England in Bristol. For more information about the Faculty or the University please see: http://www.uwe.ac.uk/hsc/

What is the purpose of this study?

This research is interested in peoples cycling experiences and also whether there are differences between men and women in how much, where, and how they cycle and if so, why are there differences? I will be using interviews in my research, both individual interviews and group interviews, also known as focus groups. I hope that my research will help cycling groups and policy makers aware of how they can best encourage men and women to cycle more in the UK.

Why have I been chosen?

You may have contacted me after seeing a flyer either in a bike shop or in your place of work. Or your details may have been passed on to me by someone who already cycles who knows you. I am interested in talking to you about your experiences of cycling or about people you know who cycle.

Do I have to take part?

No, you are under no obligation to take part in the study if you do not wish to. If you do agree but then decide you don't want to take part after all, you can contact me and I will make sure that any information you have given is not included in any analysis or written work.

What will happen to me if I take part and what do I have to do?

I will invite you to take part in either an individual interview (at a mutually convenient location such as a coffee shop or your workplace or home) or in a focus group which will involve around 4-6 other people (at a local community centre/meeting room). Both the individual and the group interviews are likely to last no longer than an hour. In recognition

of the time you have given to the research, I would like to offer you a £5 or £10 voucher. As a thank you for taking part I will also provide cycle maps and route information for the Bristol area.

What are the possible disadvantages and risks of taking part?

I will keep any information you give me in the interviews confidential. In the group interviews, there will be other people present, and whilst they will be asked to keep all information confidential also, there is always the chance that they may not do so and I cannot prevent this. There is one instance in which I would potentially break your confidence: if you were to tell me about a serious criminal offence I may consider reporting it, but would tell you in advance and give my reasons for doing so. You may feel annoyed or upset by the views of others in the group interviews but as the subject matter will not in general be that personal in nature, hopefully the chances of this are small.

What are the possible benefits of taking part?

You may find the individual or group interview enjoyable and may enjoy discussing your cycling experiences or those of others. I hope this research will help to encourage more cycling generally, which could have many positive effects for people and society. There is a box on the consent form for you to tick if you would like to receive a summary of the research findings and I would also like to write some pieces for the local media which you may see in the press.

What if something goes wrong?

If you are concerned about any aspect of the research or would like to make a complaint, please contact my supervisor, Dr Jane Powell on jane.powell@uwe.ac.uk or 0117 328 8752 or write to her at: Faculty of Health and Life Sciences, University of the West of England, Glenside Campus, Blackberry Hill, Bristol, BS16 1DD

Will my taking part in this study be kept confidential?

Yes, any information gained during the interviews will be kept confidential. When analysing and writing up any information I will give all participants a pseudonym (different name) so that they cannot be identified. Contact details and the key to people's pseudonyms will be kept separately in a locked filing cabinet. The information collected from interviews will be kept in case it can be of use to future research, but this will be anonymised.

What will happen to the results of the research study?

At the end of my PhD I will write up the results of my research into a long document called a thesis, I then take an examination about the research, called a viva. The thesis will be available via the University library when I have finished. As mentioned above, if you would like to be sent a short summary of my research findings, please tick the box on the consent form and I will send this to you. I also hope to write journal articles, articles for the media and present my findings at conferences, which I hope will give as wide an audience as possible the chance to see the results of the study. Any reference in any of these formats to statements by participants will be anonymised.

If you have any further questions or at any point you decide to withdraw, please contact me via the contact details at the start of this letter.

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Thank you for taking part in this study. I hope you find it interesting and enjoyable. This information sheet is for you to keep. You will also receive a copy of a consent form, which you will sign, to keep.

Anja Dalton, 9th March 2010 (v2)

Appendix 5: Bristol Pilot Study moderator's guide for interviews

(Cardiff version was similar, with the addition of 'types of cycling facility' theme)

Checklist	**Watch out for:**
Information sheets (check they have had & happy)	Allow/encourage short silences
Mini questionnaires	Draw links/probe further
Consent forms (x 2, check, sign off voucher)	Steer back from tangents
£10 voucher (Waitrose) to participant	Watch out for contradictions/probe
Digi-recorders x 2 (+ spare batteries)	Devil's advocate
Venue checked as suitable (noise etc.)	Pens, Water
Pack of cycling leaflets	Tea & biscuits (pay for in cafes)
Materials: paper for social mapping exercise	

1) Introduction: Thank you for attending this interview

Who am I? Background? careful to influence as little as possible.

2) Paperwork: Information sheet – for p'pant to read, if not seen b4

Mini-Q' – for p'pant to fill out at start of session

Consent form –read and sign, copy for me & copy for them

Interview plan/timeline

Permission to audio tape the session

3) Rules of the session: No right answers, so say what you feel

4) Discussion: I will ask questions but will not be offering my opinion. Please ask if you don't understand a question or would like some background info. If you would like my opinion on a topic which comes up I will be happy to tell you at the end of the session.

5) Opener: What are your experiences of cycling in Bristol?

Questions (semi-structured, not all asked to every p'pant – explore particular interests with each p'pant)

a) Early/childhood cycling	Can you tell me when you first started cycling?
	Can you remember what persuaded you to start cycling?
	Did you cycle as a child?
	From what age?
	What are your memories of this?
	Did you have official cycle training, such as cycling proficiency?
	Can you remember different types of bike at different ages?
	Were there differences in the numbers of girls and boys you knew who cycled?
	Did you stop cycling when you became an adult? If so, when & why?
b) Current cycling patterns and social influence	When did you start cycling again (if you stopped)?
	Are there any people you know who helped or encouraged you to cycle?
	Could you tell me about them?
	Have any others discouraged you?
	Do you think there are gender differences between those who encourage or discourage you?
	Do many people you know cycle too?
	Are they family, friends or colleagues?
	SOCIAL MAPPING EXERCISE
c) Multi-modality	What other forms of transport do you use regularly, apart from your bike? How often?
	What do you prefer to use and why?
d) Gender	Do you think there are differences for women and men when it comes to cycling?
	Do you think they have different concerns?
	Do they cycle differently, for example, in different styles, different bikes, on different routes? Do you think they cycle for different purposes?
	What could make it easier for (wo)men to cycle?
e) Cycling with children	Do you have any experience of cycling with children? What has that been like?
	What are the enjoyments and difficulties of

	this? Which, if any, particular stages were difficult? What could make cycling with children easier for you or for other parents?
f) Barriers and enablers	Is there anything which would encourage you to cycle more than you do now? What would you say are the main reasons why you cycle? What do you find enjoyable about cycling? And what do you dislike?
g) Own influence on others	What do you think would encourage more people to cycle? Have you yourself encouraged others to cycle? How? Whom? Do you plan to do this in the future?

Thank you for your time – is there anything else you would like to add?

Appendix 6: Bristol Pilot Study interview consent form

(There were no significant changes made to the Cardiff version of this consent form.)

University of the
West of England
BRISTOL
UWE

<div align="right">

Faculty of Health and Life Sciences

School of Health and Social Care
Blue Lodge, Glenside Campus
Blackberry Hill, Stapleton
Bristol, BS16 1DD

T: 07963 831882
E: anja2.dalton@uwe.ac.uk

</div>

<u>CONSENT FORM</u>

Research Topic: Cycling stories: what are your Bristol cycling experiences?

Researcher: Anja Dalton

Please read the following and show your agreement by placing a tick in each box which you are happy to consent to:

1) I confirm that I have read and understood the information sheet (dated 9th March 2010) version 2 for the above study and have had the opportunity to ask questions about the research. ☐

2) I understand that my participation is completely voluntary and that I am free to withdraw at any time, without giving a reason. ☐

3) I agree to take part in the above study and to the audio recording of any interview or focus group which I take part in. ☐

4) I have received a £5/£10 voucher as a thank you for taking part in the study ☐

5) I would like to be sent a brief summary of the research when it is finished ☐

Participant's name……………………………………………………………..

Signature……………………………………………………………………………….

Date…………………………………………

(One copy to be given/sent to participant, one copy to be kept by researcher)

Anja Dalton, 9th March 2010 (v2)

Appendix 7: Bristol Pilot Study mini-questionnaire

(There were no significant changes made to the Cardiff version of this document, apart from the income brackets, as mentioned in Section 5.4.7.)

<u>**Cycling Experiences Mini Questionnaire 1**</u>

Name:

Age:

Gender: Female   Male

Contact email:

Contact telephone number(s):

How many times per week do you cycle in an average week? (please circle):

Daily   **Almost**   **2-3 times a week**   **once a week**
                  Daily

a few times a month   **once a month**   **less/never**

Household income (please circle):

Up to £14,999   **£15 - £29,999**   **£30 – 49,999**   **£50,000+**

Where did you pick up the flyer for this research study?...

Appendix 8: Example social map

John Chancer social map, Bristol, May 2010, Male, 34 yr old
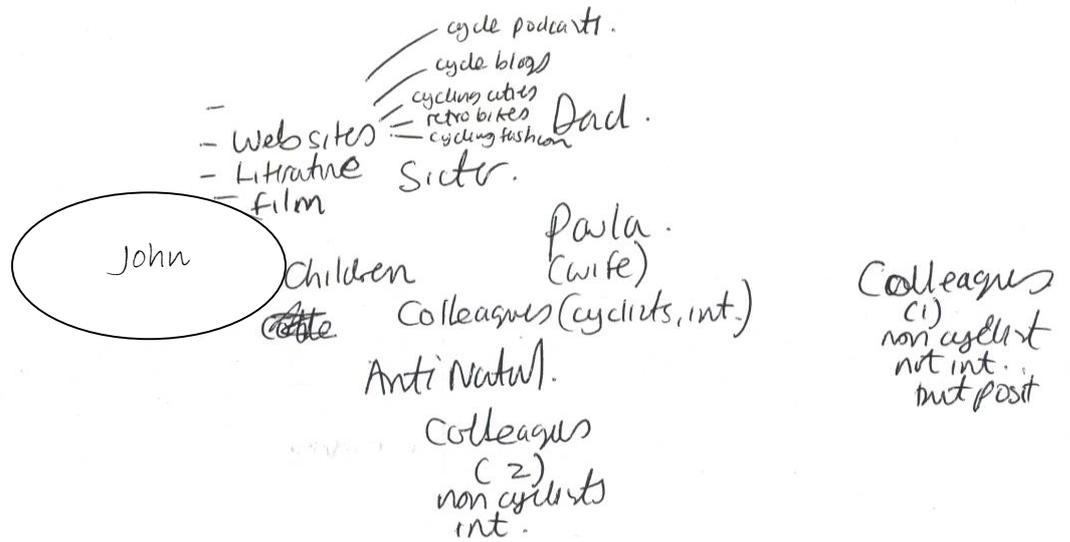
Appendix 9: SRFG recruitment process - initial email and follow-up

Initial email to participants regarding Stage 2, SRFGs

From: Anja Dalton

Sent: 24 February 2011 22:44

To: XXX

Subject: Cycling stories research - second stage

Dear

It was really nice to meet you today and thank you again for taking part in my research project, Cycling Stories. I hope you enjoyed the interview and that the cycling info pack and voucher come in handy. I will certainly keep you updated with progress with the research when I do a summary report.

As I mentioned to you briefly this morning there is an optional second stage of my research which involves a small group interview with people who know you. This could be a group (2 or more people) of friends, family, colleagues or a mixture of all of them. I would be asking them about their views on cycling, cyclists in general and also about your cycling. They would not need to be cyclists themselves, in fact it would be fine if they were a mixture of cyclists and non-cyclists. I would not be asking you to participate in the group yourself.

I am happy to arrange the interview to suit the people involved, so it could be held wherever and whenever is convenient to them. A group of between two to six people would be ideal, and each participant would receive both a cycling information pack, a £5 voucher and hopefully will have an interesting experience also.

I can contact people in whichever way you think is best. Either you could contact them directly and ask if they would like to be involved and then let me know, or you could send me their email addresses and I could email them directly to explain the study and ask if they would like to take part. The last person who took part forwarded a message to her contacts and copied me in, for me to then follow up. Below is a sample email message from me which you might like to send to see if some people would be interested. I have also attached the info sheet which you may also want to send to people.

Previous participants have enjoyed the interviews and found that it gives them an opportunity to talk about and think about an area which they don't normally get the chance for. There is no obligation and if they are not interested I will not be bothering them.

Do have a think and let me know what you decide.

Thanks again and happy cycling.

Anja

Anja Dalton
PhD Research Student (iConnect)
Faculty of Health and Life Sciences/Centre for Transport and Society

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University of the West of England
4Q53, Frenchay Campus
Coldharbour Lane, Frenchay
Bristol, BS16 1QY
T: 0117 328 3025
M: 07963 831882
E: anja2.dalton@uwe.ac.uk

Sample email

Dear friends, family and colleagues of xxxx

My name is Anja Dalton and I'm a PhD research student at the University of the West of England, in Bristol. I recently interviewed xxxx for my research, which is looking at cycling.

For the second stage of the research I would like to contact people she knows (friends, family or colleagues) to invite you all to take part in a small group (2+ people) interview to discuss cycling in Cardiff, your views about cycling generally, and also about xxxx's cycling. You do not need to cycle yourself, I am just interested in your views about cycling. The interview will last no longer than an hour, and can be held at a time and place which is convenient for you.

Each interviewee will receive a cycling information pack and a £5 voucher as a thank you for taking part. Other participants have enjoyed the interview and found that it gives them an opportunity to talk about and think about an area which they don't normally get the chance for. Attached is an information sheet which gives you a bit more background about the study.

Please contact me if you would like to be involved, my contact details are below.

Thank you and best wishes

Anja

Anja Dalton
PhD Research Student (iConnect)
Faculty of Health and Life Sciences/Centre for Transport and Society
University of the West of England
4Q53, Frenchay Campus
Coldharbour Lane, Frenchay
Bristol, BS16 1QY
T: 0117 328 3025
M: 07963 831882
E: anja2.dalton@uwe.ac.uk

Follow-up email if I had not heard back from participants. If still no response, no further contact was made.

From: Anja Dalton
Sent: 04 February 2011 13:21
To: xxxx
Subject: Cycling stories research - second stage

Dear xxxx

I hope you won't mind me asking whether you had had a chance to consider my request about asking some friends, family or colleagues if they would like to be interviewed for the cycling stories project? I appreciate that you are very busy and may not have had time. If there were just one or two people who you know who might like to participate in an interview this would be very valuable for my research. Each participant will receive a cycling information pack and a £5 voucher as a thank you for taking part. There is a sample email, below, which you might like to send on to people and an info sheet attached about the research.

If you would prefer not to take part in the next stage, I wonder if you would mind just answering the question below, so that your response can help me to improve my research recruitment process. As with all parts of this research, this information would remain anonymous.

I would prefer not to take part in the focus group stage of the Cycling Stories research project because (please check one option):
1) It's too much hassle for me…………………………………………….
2) I don't want to bother people I know……………………………………
3) I'm worried others might find it boring………………………………….
4) I don't like the idea of others discussing me…………………………..
5) Other – please specify…………………………………………………......

Thank you again for all of your time and input into the project and happy cycling!

With best wishes
Anja

Appendix 10: Recruitment process stages

In this section I detail the exact sequence of actions which were followed when conducting the data production. It covers the recruitment process and the communications which I had with research participants at Stages 1 and then progressing on to Stage 2 of the research, when applicable.

1)   Flyers were distributed in workplaces and bike shops.

2)   Participant picked up flyer and contacted the researcher to express interest (usually by email).

3)   First response – I sent a formatted email thanking the potential participant for their interest, attaching an information sheet which gave more detail about the research, including consent, anonymity, and the anticipated risks and benefits of taking part in the research (Appendix 4). The email asked for an indication of when and where an interview would be convenient if the participant is happy to proceed to this stage. After a response from the participant and usually a few subsequent email messages the exact date, time and place on which the interview took place was determined. The potential participant was offered the choice of an interview either at their home or place of work, or a public location such as a café.

4)   Interview: At the start of the interview I welcomed the interviewee, introduced myself and the research project briefly and then asked them to fill out some paperwork before proceeding with the interview. (For a record of the interview moderator's guide please see Appendix 5). Firstly I checked that the participant had both received and read the information sheet and, if not, another hard copy was given. Next I gave the participant their voucher (incentive) and the pack of cycling maps and information. I then asked the participant to sign the consent form (Appendix 6) which gave me the participants' permission to digitally record the interview and also included an optional tick box for those who wanted to receive a short summary of the research after it was finished. One copy of the signed consent form was given to the participant and I took one copy, so that we both had a record of the consent given (see Section 5.6.2 Informed Consent for further information).

Following this I asked the participant to fill in the mini-questionnaire (Appendix 7) consisting of eight items; contact details, age, gender, household income, how often they cycle and how the participant heard about the study. Once the paperwork was finalised I next switched on two digital recorders (one for additional back-up). This dual system worked well and ensured that no data was lost due to functioning difficulties with one of the recorders or by batteries running out part way through an interview. As mentioned earlier a moderator's guide was developed for the interviews (Appendix 5) which reminded me about necessary paperwork and to check key practical details, and most importantly, included a question schedule. The schedule was fairly loose, in accordance with a semi-structured interview of this nature; question themes written in the left-hand column and specific questions within each theme on the right-hand side. I used these questions as a guideline, so that not all questions were asked to each participant, and the questions were not necessarily in the same order.

This was to allow flexibility, since some participants were voluble and gave details pertaining to later questions when asked about an early one. Also, it gave me the freedom to follow up on an interesting or unusual thread which a participant mentioned.

During the interview, whilst the theme of current cycling patterns and social influence was being explored, the participant was invited to draw a 'social map' (Hawe and Ghali, 2008, p.63) visually depicting both the encouraging and discouraging social influences upon their cycling. The purpose of the social map was to illustrate the social backdrop to the participants cycling behaviour and to show the type and degree of encouraging and discouraging social influences which were present. It was also intended to draw out some of the key people who were influencers on the interviewees cycling ('name generation' in social network analysis). An example social map is shown in Appendix 8, and further examples, discussion and analysis of these are given in Chapter Seven.

At the end of the interview the participant was invited to ask any questions of me or to share any further experiences about their cycling which they did not feel had been fully covered in the course of the interview. After this the digital recorders were switched off and the interview brought to a close. The participant was then introduced (if they had not previously been) to the second stage of the research – the SRFG. They were invited to receive some more information by email about this stage so that they could decide if they wished to take part or not.

Soon after each interview I wrote brief notes about them in my reflexive diary. These notes were concise and covered factors such as practicalities and problems to do with the location of the interview, initial impressions about the participant and any key or novel things which struck me in the course of the interview (see Appendix 1 for an example diary entry). These notes assisted me in three main ways; to help to quickly distinguish participants from each other, to assist in identifying key areas of interest to be thought about ahead of or during analysis and to establish whether there were any problems with the interview format or conditions so that they could be improved upon or problems avoided in future sessions (see Section 8.4).

On the day of the interview or as soon as possible afterwards when I next returned to the office I carried out the following procedure: the reflexive diary was placed in a locked drawer to which I had the sole key (see Section 5.6.1 Anonymity for further detail). The paperwork from each participant was checked for any missing details or inconsistencies, then each was filed in a separate plastic wallet and again placed in a locked drawer. An interview schedule was added to after each interview which gave each participant a pseudonym and this was kept separately to the paperwork files. The digital recording of the interview was downloaded onto my laptop and backed-up at two other locations. Once these back-ups had taken place the interviews were erased from the digital recorders. The

recordings were later transcribed and both the audio file and the transcripts were uploaded into NVivo, ready for analysis.

On the day following the interview or as soon as possible afterwards, any participants who had expressed interest in taking part in the next stage of the research, the SRFGs, were emailed with some further information. This process was refined over the course of the pilot study and by the time data production commenced in Cardiff an initial email and a system of timed reminders had been devised (see Appendix 9). If the participant did decide to proceed to the SRFG stage then an email was sent to them to pass on to their contacts (in the case of Interviewee 7), or they sent an email to their contacts (cc'd to me) so that I then had their email addresses and could follow up with them directly (in the case of Interviewee 5). Once the SRFGs were arranged with the participants' social contacts ('alters', see Glossary on p.XIV) the process was similar; with information sheet, consent form, mini-questionnaire, reflexive diary and recording procedures. One key difference was that SRFG participants were not invited to draw a social map, but were instead asked to look at a series of images of cyclists and prompted to talk about what they thought about them and whether they identified or didn't identify with any of them. The SRFG participants were each given a cycling information pack and a shopping voucher incentive also, as detailed in Section 5.4.5.

From all of the initial interviewees ('egos', see Glossary, p.XV), I planned to conduct a total of two SRFGs, if possible, one with colleagues, and one with friends and family (alters). Since not all of the initial interviewees were likely to want to take part in the next stage, I recognised the potential need to interview more people than this in order to reach the numbers outlined above. The participants who were recruited via bike shops were not told about the subsequent SRFGs or the need to give contacts details of their alters in advance. Instead, I asked them during the interview itself. I planned to compare how this worked in practice with the plan for those who were recruited through their employers, where they knew upfront of the necessity of giving the researcher contact details of some people who they knew in order to take part in the study. This was further revised for Cardiff (see Section 5.4.7).

Appendix 11: Tables of participant household incomes

As noted in Section 5.4.7, I changed the income categories between Phases 1 and 2 of the data production, from an initial 4 categories to 6. The reason for this change was that I believed it would be of benefit to increase the number of categories, thereby creating slightly smaller income units, which gave more precise information.

Bristol household incomes

Income brackets (£)	Interview participants	SRFG participants
Up to 14,999	0	2
15,000 – 29,999	1	3
30,000 – 49,999	4	2
50,000+	3	0
Declined to answer	0	1

Cardiff household incomes

Income brackets (£)	Interview participants	SRFG participants
Up to 10,000	1	2
10,001 – 20,000	7	1
20,001 – 30,000	9	1
30,001 – 40,000	7	6
40,001 – 50,000	4	1
50,001	5	3
Declined to answer	1	0

Appendix 12: Cardiff recruitment leaflet (Welsh version)

connect   UWE BRISTOL University of the West of England

Beicio yng Nghaerdydd

A ydych yn beicio yng Nghaerdydd neu Benarth?

A fyddech yn fodlon cael cyfweliad am eich profiadau beicio gan ymchwilydd o Brifysgol Gorllewin Lloegr ym Mryste?

Ni fydd yn cymryd mwy nag awr, a byddwch yn derbyn taleb £5 a phecyn gwybodaeth beicio fel diolch am eich cyfraniad.

Ffon: 07963 831882   E-bost: ANIA2.DALTON@UWE.AC.UK

Post: Room 4Q53, University of the West of England, Frenchay Campus, Coldharbour Lane, Bristol, Bs16 1QY

Appendix 13: Ethics committee approval letter

Our ref: SE/lt
Anja Dalton
School of the Built and Natural Environment
4Q53
Frenchay Campus

Dear Anja

Application number: HSC/09/09/45

Application title: Women on the move: gender and cycling issues in the UK

Your ethics application was considered at the School Research Ethics Sub-Committee meeting of 29th September 2009 and based on the information provided was given ethical approval to proceed with the following conditions:

1.   Please remove the sentence 'Thank you for taking part in this study. I hope you find it interesting and enjoyable'. This seems to assume that the person reading the sheet has already decided to take part, which is not the case.

If these conditions include providing further information please do not proceed with your research until you have full approval from the committee. You must notify the committee in advance if you wish to make any significant amendments to the original application.

Please note that all information sheets and consent forms should be on UWE headed paper.

If you have to terminate your research, please inform the School Research Ethics Sub-Committee within 14 days, indicating the reasons for early termination.

Please be advised that as principal investigator you are responsible for the secure storage and destruction of data at the end of the specified period. A copy of the 'Guidance on Managing Research Records' is enclosed for your information.

We wish you well with your research.

Yours sincerely

Simon Evans
Chair
School Research Ethics Sub-Committee

Encl

Appendix 14: Cardiff recruitment email

This email was composed by myself and then sent out on my behalf by a member of the Travel Team at Cardiff Council. No blanket emails to all staff were able to be sent due to IT restrictions, therefore the available option of emailing people who had participated in the workplace travel survey was decided upon. This did have the advantage of limiting the number of potential participants, in what is a very large organisation with XX employees. It was also useful targeting since people who had responded to the workplace travel survey were likely to already take some interest in how they travelled to work and were potentially more likely to cycle.

Email to Cardiff Council Workplace Travel Survey participants: 11th Oct 2010

Dear Workplace Travel Survey participant,

Thank you for taking the time to fill out Cardiff Council's recent Workplace Travel Survey recently and also for volunteering to be contacted about other related research.

My name is Anja Dalton and I am a PhD research student at the University of the West of England in Bristol. My research project is about people's experience of cycling, especially the social side of cycling and the different experiences of cycling which men and women may have.

I would like to invite you to be interviewed if you do currently ride a bicycle for some of your work or leisure journeys. The interviews will last no longer than an hour and all participants will receive a £5 voucher and a handy pack of local cycling information and maps. I can fit around your schedule and interview you whenever and wherever is most convenient for you, so this may be at work, at your home or in a cafe for example. If you are based at County Hall space is available at the Sustainable Travel Information Centre.

I would also be interested in interviewing a small group of people you know, either colleagues, family, or friends, after your initial interview. This is an optional extra and there is no need to decide in advance whether you would like to take part in this stage also. I will ask you about this at the interview and if this is of interest I will provide more details then.

Please contact me directly, either by phone, email or post if you would like to take part in the study, my contact details are below.

Thank you and best wishes

Anja

Anja Dalton
PhD Research Student (iConnect)
School of Health and Social Care/Centre for Transport and Society
4Q53, Frenchay Campus
University of the West of England
Bristol, BS16 1QY
T: 0117 328 3025
M: 07963 831882
E: anja2.dalton@uwe.ac.uk

AD: Preamble about digi-recording and paperwork.

CC: (Who is filling out mini-questionnaire) We're sort of borderline, in income I would say, we're probably £30-49k, but we're probably just £30k I'd say.

AD: OK. I know it's quite a broad category that one. Thanks very much. So first of all I just wanted to ask you generally of a quick picture of what you feel about cycling in Bristol.

CC: Mmm hmm. Well I think Bristol is quite a difficult city to cycle in, although the only other city, well it's various, it's two other cities technically. So it's Hereford, which technically is a city, although it's obviously actually a small market town. So that's easy. And then London, which is obviously much harder. So I don't find Bristol difficult but I would say Bristol is a very difficult city to cycle in. I don't find it difficult because I'm used to it but most parents I know refuse to cycle with their children in the city because it's too dangerous. And I would understand that because I have experienced that, how dangerous it is. But because I always cycle with the younger one and the older one cycles early in the morning before the main traffic, I sort of deal with it that way. But I do think it is, I don't think it's easy.

AD: Hmm.

CC: An easy choice.

AD: No. And, um, can you tell me when you first started cycling. Did you start as a child?

CC: Yep. Five, four, very early – I've always cycled yeah.

AD: And did your parents teach you, do you remember learning to cycle?

CC: No, my parents were not at all physical and, um, or active in any way. But I think I always saw cycling as a form of independence. So, um, I remember having a bike when I was three or four years old and I remember learning to cycle it myself on our drive, which was a stony drive, and having various scars, that I've still got, from that experience. So I do remember doing it and it being just a straightforward thing that you did. And also I remember always having to maintain my bikes, as I was saying to my children who are nine and fourteen. The fourteen year old still expects me to change his tyres when he has a flat tyre. (both laugh) I find it extraordinary because I remember nobody ever did any of that for me, because my parents weren't into cycling or practical. Yeah.

AD: Yeah. And did you cycle around much with friends, or?

CC: Yeah.

AD: or to school?

CC: No.

AD: What kind of things did you use your bike for?

CC: I used my bike to, um, get away. It was absolutely a source of adventure, independence. Um, I remember at a very young age I used to hide money in the back of my bicycle in my bicycle box. And then I'd take a little bit of food and water and hide a bit of money and I'd go off for the whole day and I'd explore all sorts of parts of the town where I lived on the Isle of Wight. That I'm sure my mother didn't know anything about and get into terrible, I mean sometimes quite dangerous situations I can remember getting into, but also really nice situations. But, um, because I was under ten, I can remember thinking, you know, that it was quite dangerous even then. It was always, that was the attraction, that you were free to go off. That's what it gave you, I suppose.

AD: Mmm. And do you know how you sort of learned then? You say your parents didn't necessarily encourage you to, so was it that friends were doing it?

CC: Um, it's almost certainly because all the other kids had bikes, yeah. We had very good friends up the road, although their kids all went to school privately on the mainland, in the holidays they'd come round with their bikes, and I seem to remember there were always loads of bikes in the drive. So it would almost be certain, it would almost certainly be for that reason, though interestingly I cannot remember my brothers, either of my brothers, cycling.

AD: Right.

CC: And now my brother definitely doesn't cycle. And the other one lives in Japan, I'm sure he doesn't cycle either.

AD: Mmm.

CC: So, it was just something I did.

AD: Right. And were you the eldest, or?

CC: No, middle. Yeah, yeah. So my older brother wouldn't have done it. But then I think that's a family, that's an unusual family thing, because I learned to drive when I was seventeen. I got a car when I was seventeen and my older brother didn't drive, still doesn't and my younger brother doesn't drive.

AD: Mmm.

CC: So I think cycling and driving were a sign of more independence, I think, yeah.

AD: And do you remember if you had any kind of cycle training by the school, cycle proficiency type stuff, or any other people helping train you, or were you all sort of self-taught?

CC: Unfortunately I don't remember going cycle training. I do remember we got something, some instructions about, you know, road safety, as pedestrians. We never got anything for cycling, no.

AD: Hmm. And, um, do you remember different bikes you had at different ages, anything like that?

CC: The only bike I remember is the one that had really fat wheels. And that must have been my first bike. It had really fat white wheels, because I remember, you know, if I got a puncture or if there was a problem, having to pump up the tyres. And that must have been a real baby bike, you know...

AD: Mmm.

CC: because it wasn't normal, it wasn't, yeah. But that's the only one I remember, my first one. For some reason I don't remember, oh yes, now I remember. Yes I remember my first one and I remember the one that had the basket on the back where I hid the money. (both laugh) So that must have been, that was like a shopper...

AD: Yeah. So that was probably your next one?

CC: Prob-ab-ly my next one, yeah. And that would have lasted me, well, when did I get... Ah, yes, that would have lasted me until I was a teenager and then I know what happened, I just started getting boy racers and they were all, kind of, fairly anonymous. Yep.

AD: Hmm. And, um, do you know if there were differences in, or do you remember differences in numbers of boys and girls that were cycling that you knew? I mean, obviously you've mentioned in your family...

CC: Hmm.

AD: But in terms of kids on the street, was, do you remember?

CC: I think that, I remember there being both. I don't remember there being a gender divide.

AD: Mmm.

CC: Because the family we played with, they were the other way round, the girl was the eldest and the youngest and the boy was in the middle. And I just remember they all had bikes, yeah. So, yeah, and obviously, well no not obviously, well actually cos I had a boy, I had two – a girl and a boy who

were best friends. But I just, I can't remember if James had a bike, but I just assume that he did, because you know we all had bikes.

AD: Mmm.

CC: I don't remember going cycling with girls or boys. I just remember cycling being something I did on my own.

AD: Yeah.

CC: Actually, yeah.

AD: Mmm. And, um, then when you became an adult, did you stop cycling at all for a period, or did you just continue cycling but it just changed a bit at various times?

CC: Um, I can't ever remember if, oh yeah, I think when I went to Dartington I don't think I cycled because I was too far from the college. So I think what I did was I tried running as an alternative. But I had a moped, I also had a car, periods when I had a moped, periods when I had a car, but for some reason I don't think I ever had a bicycle at Dartington.

AD: Right.

CC: I don't know why that was. That's really strange. Ah, but in, it's a four year degree and in the third year we were in London and I would have had a bike in London. I always had a bike in London. I'd lived in London before. But I'd always cycled. I don't like using the tube, and yeah, I prefer to go overground. So, um, that would probably be the longest time that I hadn't cycled, would have been the two years I was at Dartington before going to London and the year after. Yeah.

AD: Right. And, um, since you've been an adult have you, um, or since you finished your degree, have you then tended to use it differently at different stages of your life and, um.

CC: I've always used it...

AD: Regularly or perhaps sporadically?

CC: I've always used it in the same way, I've always used it for practical, um, you know, um, practical reasons.

AD: Hmm.

CC: So, I um, yeah, so I've never cycled in, for leisure, or pleasure. Well that's not entirely true because I do like cycling. But I've never thought, ah yes, I will go on a cycle ride. That's why it was unusual that I got this rack last weekend and thought, oh, we could actually do that, but as a leisure activity. Because normally I don't think of it like that. So, it's always been for practical...

AD: That's for a car?

CC: A rack for a car, yeah. Yep.

AD: And, um, so have there been people you know that have sort of encouraged you in your adult life at all, or discouraged you at all?

CC: From cycling? Um, no, nobody, ah, yes, I know what. The only comment I'd make about that is at the primary school, I don't know, do you have children?

AD: No.

CC: No. Well, when you have children there's a lot of kind of repressed competitive behaviour. (both laugh) So you kind of go into a situation, and cycling was very much like that for me at the school. You go into a situation not thinking anything about things you habitually do such as cycle, and I remember when I started in the school I didn't have the bike because life was very chaotic and we moved out of Bristol and then we moved back.   And I was working and then I wasn't working and then I was working in a different way.   And then when it all settled down and we moved here and I got a bike straight away because I had to. I used to live right next to the school at the other end of Cotham and now I had to get there. And as soon as I appeared on the bike I got lots of comments about 'oh you're so good', you know (both laugh). And I'm thinking what do they mean 'I'm so good'? So, that's the only, I suppose you would call that encouragement.

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AD: Hmm.

CC: That's the only encouragement I've ever had, is people assuming that you're doing something from the point of view. And then once I did get a criticism, again from a mother. She's a very nice woman but she sort of, I said something about oh a car had done something, yes a car had reversed back onto me, and she said yes but. I said I was trying to get down the side and they reversed back onto me and she said 'yes but were you going down the correct side'? And the fact was I wasn't going down the correct side. But it was, um, cars were parked on either side of the street, there was just one way, do you know what I mean? And it's kind of irrelevant, well to my mind, which side you're on, there's no way. And somehow I got stuck on the wrong side and I was trying to get out. So she was obviously feeling frustrated as a driver that bicycles weave around and... And I don't know if that was because she had seen **me** weaving around, but I do definitely not cycle conventionally safely, in a conventionally safe fashion, so that would be a fair criticism. And I'd take that, that's fine, I have no problem with that.

AD: And, um, your, so you cycle to get to places, to do errands, things like that.

CC: Yeah.

AD: Have you ever done leisure rides and what about in any kind of fitness sense? Do you use it for that at all, or have you ever used it for that? Do you see it primarily as a useful, practical...

CC: Practical. A practical means of getting from A to B. I don't at all see it as a source of fitness, although after forty you realise that just because you are on a bicycle it's perceived as a badge or whatever, an example of you know fitness. It's like you are declaring that you're fit enough to get on this thing. (both laugh) Which I just find, because I never had those issues with it, and because I used to do lots and lots and lots of exercise because I did choreography, so. Cycling to me is not the same as exercise, it's a different thing, do you know what I mean. So I don't think of it like that. But now I don't do lots of exercise and choreography then I suppose yes, it is a good form of exercise. (both laugh) Of course.

AD: But that hasn't been a reason for you...

CC: Definitely not.

AD: In cycling?

CC: No, I'm much more likely to get off and push than to... than to... put... put myself through it. Mainly because I mean I don't want massive thighs or I don't want to build up muscles in that way. I mean I want to have the stamina to be able to get up the hill everyday but after the second or third time I've gone up the hill I'm quite happy to push. (AD laughs). I don't have issues about fitness like that.

AD: And um so are there many people you know who cycle in terms of friends, family um colleagues or things like that?

CC: Uh, I only know one person who cycles and I don't know if she really cycles that much...

AD: Right.

CC: I think she... well, considering she lives in the top of Cotham and she works in the university – that's maybe 5 minutes by foot – and she cycles I was thinking that's not real cycling (both laugh). It's not that you have to get across the city on a bike. And I... the other reason (I'm sounding like I'm being really rude about her) but the other reason I have is her husband... I said something about hmmm... we used to have two cars and I got rid of mine because it was an old banger and it was annoying me - you know the money it cost to keep it on the road and it was so bad for the environment – so I got rid of it and um... and so then suddenly at the weekend, if we didn't have the car I, you know, um... we couldn't get from A to B with the boy.. I couldn't get from A to B with the boys so then we just started cycling across the city wherever we had to go we'd just cycle in convoy. And I must have... I told this to this friend's husband and he said 'Oh you're so good. (AD laughs.) I can't imagine being able to do that with my children' and I'm thinking 'well get rid of that big van you've got (AD laughs) then you'll find you'll obviously... you know, it's just a case of... it's much quicker to cycle.

AD: Hmm.

CC: I mean I suppose we could use buses but I've tried. I prefer the independence of a bicycle.

AD: Hmm. And I just wanted to ask you to do a little social mapping exercise if you're happy and um, so, what I'm trying to um look at is your sort of picture of cycling for you and what, sort of, encourages you, and what discourages you and, so, it could be friends, family, colleagues; it might be wider things – some people are quite into cycling culture or different things they sort of, um, you know, use on line things, but for you, you know, or it might be just, you know, certain feeling as well around what it is for you. So, if you perhaps put yourself in the centre and then have…

CC: In what sense, as a drawing or as my name…

AD: Yes as your name. However, if you want to sort of do something with colours…

CC: No, no… (AD: laughs.) Your pen's a bit run out…

AD: Is that not…. use that one.

CC: Sorry.

AD: Annoying… Um, so yes, if you put you in the middle and perhaps have this as um more discouraging and that more encouraging and then think about the sort of things for you that… around cycling that…

CC: OK. Um. Well depending on how heavy - this is not what you want to hear because there's nothing you can do about this – but the main discouragement for me personally about whether I'm going to take my bike or not is the weather. (AD: Uh huh.) So, if it's raining (AD: Hmmm.) I'm probably not gonna… If it's heavily raining I'm definitely not gonna take (AD: Uh huh.) my bike so where would I put that?

AD: Um, yeah, you can put that over here… I mean I guess I was thinking perhaps the closer… the close to you the more discouraging – so if it's close but on this that's *quite* discouraging and then there if it's quite close that's quite encouraging. So, I mean, practical factors um but also kind of social in terms of – you know – maybe you say you cycle with your kids and things like that perhaps that encourages you to cycle because you thinking – you know – you'll cycle with them or… I don't know if there's any friends or if you've ever cycled with friends or colleagues or if there's anybody else who…

CC: Social cycling…

AD: Yeah, who encourages… I mean maybe you don't need to cycle with them but maybe their… you know that they do…

CC: Competitive cycling…

AD: Umm.

CC: No, not really… (AD laughs)

AD: Not really competitive . I just mean more in, um, in terms of does it encourage you to – you know – to know… other people are cycling as well. That kind of thing…

CC: The fact that the children cycle would make me not want to stop cycling because I wouldn't want to lose the, the um capacity to do something that I know they can do and they're going to continue doing as they grow older. So in that sense they're on the far, on the plus side.

AD: Hmm.

CC: Umm… Erm…What else encourages me to cycle…? Ok well, this is very practical that, um, if you don't have a car and you have to do a lot of shopping it's easier if you've got a bicycle, so.

AD: Hmm.

CC: So what would you call that?

AD: Um. Yeah. 'Using bike for shopping' I guess.

CC: Yeah.

AD: Umm.

CC: Uh...

AD: 'Help for shopping', you know, 'easier shopping' perhaps.

CC: Yeah. 'Easier shopping'.

AD: I mean do you ever cycle with your husband for example? Or...

CC: Nope. Interestingly he has a got a very... well I've never seen it, but he's got some amazing mountain bike that he's got but he doesn't have it here. He's got it, because he's got some woodland, he keeps it in the woodland. Apparently he uses it in the woodland although I don't think he uses it very much. Whereas I've got a normal road bike, you couldn't go off road or anything like that. So I think he uses it there, although I don't know, I don't know whether he actually uses it or not. But I bought the other day, a, not the other day, in Oxfam I saw a fold away bike for £70. It's quite heavy which is why it was only £70, but it was such a bargain that I just bought it.

AD: Mmm.

CC: Because I love bikes, practical bikes, and I thought this will be very useful, it's fold away, la la la. So I brought it, when we went away on holiday I took it. We took a camper van and we took this as well and so that was good, that was fun. Because even though it was only one bike between all of us it got used.

AD: Yep.

CC: And also Graham started using it in Bristol, so, yeah, you know. And that's drawn him in to a kind of a more family context for cycling. But left to his own devices, he would do all that sort of, you know, sport, you know, kind of fitness, that side of things. That would be what attracted him but I don't think he actually gets time to do it.

AD: Hmm.

CC: And also, interestingly, I think he's. Also, we go down to Wales and near where we go in Wales there's fantastic off-road cycling.

AD: Oh yeah?

CC: It's an international cycling route, it's in the Breckford Forest. And he tried to go on that and came off quite badly, because you see he doesn't actually cycle very much.

AD: Hmm.

CC: Yeah, so I never cycle with Graham because he doesn't have a bike here.

AD: And would you ever tend to go and visit friends by bike?

CC: Yeah I always visit friends by bike.

AD: And would, do any of your friends also cycle?

CC: No, none of them. Absolutely none of my friends. They're all middle-aged women, they don't cycle, you know, they just don't. And even if they were into fitness – actually I have one friend who, um, has got a bicycle, she's very fit, she does lots of sport, and she's very into competitive sport. And she did a sponsored cycle ride in Crete or somewhere. But as far as I know she'd never get on a bicycle, she lives on the other side of town, she'd never get on a bicycle and cycle into the school for example, she'd get in the car.

AD: Right.

CC: Yeah. So I don't know anyone that uses it for practical...

AD: Reasons.

CC: Reasons, yeah. I don't know maybe I'm in the wrong part of town. (both laugh)

AD: And, um, do any of the people, you said you have students staying sometimes…

CC: Yeah, yep.

AD: Have any of them ever…

CC: Once.

AD: used their bikes to get around?

CC: Yeah once. They're all language students so none of them have bikes. They're here temporarily and quite often they say they're going to get a bike and nothing ever happens. One student actually got a bike and bizarrely, it was very very strange, it got stolen. Somebody just walked down the side and just stole it. And yet I've used my bike for years and nobody's ever taken my bike. So I don't know what that was all about. I don't know. But it disappeared. So he was the only one.

AD: And are there any other factors that, you mentioned earlier about, um, it being dangerous or difficult to cycle around. I mean is that something that puts you off?

CC: I was just about to put it down yeah. Aggressive drivers, I guess, would be a good. I had a driver who, um, well it was quite embarrassing because I sort of recognised her children from secondary school so she was obviously a mother. But she squashed me. I was on the correct side this time, but she sort of… she had a very big car – a single road – and she was coming down the road. You know normally if they carry on coming there's a gap you can go into but there was just no gap. So I'm standing there having to sort of stand out of the way of her car and it just really annoyed me. So she's coming down in her car and it just really annoys me so I pushed her mirror in. She went absolutely mad. Completely crazy. Got out of her car screaming and yelling. You know, swearing and saying she was going to kill me and she was going to do this and do that and I was a stupid bitch – whatever – and all the rest of it. Anyway, I'd sort of, when she stopped the car, I kind of just cycled out the way because it was, because she would carry on coming that I couldn't cycle out of the way before so I sort of cycled out of the way a little bit but I didn't cycle off which was really stupid – I should have cycled off and um… anyway she basically, she got out of the car and chased me to kill me or whatever she was going to do but in the car she had her child in a seat next to her and then she had three kids in the back and she left the engine running and the handbrake off and the car just carried on moving down the street (AD laughs). The car just carried on driving down the street and she ran after me saying 'I'm gonna kill you' and all I did was push her mirror in which I just found incredible! I could have just licked my finger and run it down the side of the car like that and she would have gone ballistic. It's just the attitude that some people have to 'how dare you'… and she just… all she could keep saying was 'how dare you touch my car' and it was like… it's very difficult to miss it when you're like so ridiculous. And I was sort of saying… and I was having to… but I couldn't say it cos she would have wound me up and she was screaming at me so I'm like screaming at her 'you're obviously completely mad', (AD: laughs) you're car is driving in the other…' So the kids had to jump out the back – the older kids – and scream at her to get in the car because they couldn't stop it. That kind of aggression really upsets me because I know that the biggest problem I have with cycling is that I will *instantly* lose it with drivers who – you know – treat you in that way like 'how dare you touch my car' or something like that. And I'm always doing it with my primary school child so he's kind of thinking 'oh, my mum's gone mad' (AD: laughs). That is the one big bugbear I have about cycling is that stored aggression that's quite difficult to sort of get rid of cos – you know – it builds up every day. I mean when you start cycling again, maybe after the holidays it's all fine. But you only have to have one incident and then it kind of, do you know what I mean?

AD: Um.

CC: That side of it I don't like. But I mean I haven't had anything like that for a while, but that really wound me up.

AD: Sounds like a very extreme example.

CC: Well I mean she was obviously a bit mad. But it was that way, you know, as a cyclist you can't ever get it right, which is why I have absolutely no qualms about running red lights and things like that. And I know the police see me they'll stop me and they'll be, I mean I know I shouldn't do it. But I just think I'm just not going to engage with the convention because basically drivers just, just want

you off the road. You know, they really think you're not even fit to touch their cars. (both laugh) But when you speak to other cyclists, they're fine. I remember I went into school and I said to somebody and he said, I don't know he's probably a doctor, there's a lot of medics at that primary school. It was a complete stranger, never spoken to him before and I said 'have you had that' and he said 'I have that every single day I cycle'. And I thought, yes, I mustn't let it get to me, but it does, sometimes. Luckily I wasn't with Rob (younger son) when that happened...

AD: Mmm.

CC: Thank goodness. I was on my own, but.   But quite often when cars cut me up, or particularly when I'm with Rob (younger son), and they hoot or do something or drive past very fast, or

AD: Hmm.

CC: Ahh, it just makes me really mad. And do you know, they sort of say, you know, you're mad. And I do appear mad, I become quite, you know, it's annoying. (both laugh) I did say to Rob 'I'm never going to do it again, I'm never going to.' But it's difficult! And then I did it the other day and I wasn't even on the bicycle. So annoying. And it's aggression towards drivers. Because they've changed the lights just down here (Gloucester Road) and there's a pedestrian crossing which flashes green so you can walk as a pedestrian. And they've put a feeder which crosses the green, so that all the cars feed across as you're walking across on the green thing. It's incredibly dangerous and obviously children think it's safe and it's, and it's not. And this car did it the other day and I just stood in the middle of the road and just refused to move. But it's the same thing. It's from cycling, that sense of you have no right. And it's not true, as a pedestrian you can't be killed by a car, you know. You can stand in front of them and they can't. And it's the same on a bicycle.

AD: Mmm.

CC: It's just they think that if you're on a bicycle they can get you.

AD: Mmm.

CC: And that's what I've noticed with the boys as well. I've had quite a few people say to me about my older son 'his cycling's really dangerous'. And he has to, you know, and 'his cycling's really dangerous'. And I'm thinking 'I know exactly what his cycling's like, it's the way I taught him, bomb around'! (laughs) You know what I mean, and I just sort of think there is no safe cycling, unfortunately. I mean, you know, he does, I'm sure he does things that he shouldn't do, I'm sure he does, but what I'm trying to say is you could be the safest person in the world and still get killed on a bike, you know.

AD: Mmm.

CC: So I find that quite, that's my one bugbear about cycling. And only cycle paths that people respect are going to do anything about that, making that better.

AD: Mmm.

CC: And the problem with Bristol is that people don't respect the cycle lanes. So you know, they park in them and they stop and they're not long enough and you know, so. So that's my one negative, but I suppose the positive thing about cycling in Bristol is not many people do it.

AD: Hmm.

CC: Relatively, hardly any people cycle.

AD: Yep. So, in terms of, it's not too congested in terms of bikes, I don't know if that's something you'd like to (writing down on the social map). And do you think there are, um, differences in gender when it comes to cycling? I mean from when you've talked to men and women about cycling, or when you see people cycling do you notice differences?

CC: I cycled into the centre yesterday. I never normally do that. And, um, I've decided I'm going to do it more, um. Anyway, so I cycled into the centre and there were a lot of male cyclists, well they were all male cyclists and they're all just really good and they just wait on the lights and they are really good. And I just never do, I just go when it's free, you know, I don't even think. What I do is a lot of energy conservation, I conserve my energy. So, you know, I'll be going along down here, um,

and way before I get to the lights I'll be seeing around where they change. So I won't cycle too hard, so lots of people will be going past me and then I'll speed up when I get to a point where I think that I'm going to get through. Do you see what I mean? So I don't cycle really fast. But I just avoid ever stopping if I can. So I go along at my own pace but do a lot of slipping through. And I noticed that everybody else was like 'fast, fast, fast' 'stop' 'fast, fast, fast' 'stop'. So of course I kept passing them and they kept passing me. There was a lot of very aggressive passing going on! (both laugh) And I was thinking 'but I wasn't trying to get in front of you'.

AD: Hmm.

CC: I was just, you know, timing it so that I could slip through the lights. I don't mean, I wasn't running all the red lights, but I was just going, they were red and I knew they were just about to change, and then they did. So I was just timing it really. And I noticed that that's not, you know, socially not very acceptable. And I understand that. But that's why I cycle because I don't have to conform as much on a bicycle. (both laugh) I don't know.

AD: So you'd say the style of cycling is the main...

CC: For me.

AD: Difference that you notice between men and women?

CC: I think men are much more competitive cyclers. I, er, yes I suppose that's the main difference is that yeah. But the trouble is, the trouble is, it's not marketed, non-competitive cycling. So women don't really have anywhere to go with it. They don't really market the Miss Marple style of cycling do you know what I mean. And also, I've got a fairly, well not old-fashioned, but I've got a ladies bike with a bicycle basket and it's quite cronky. So people don't expect you to sort of overtake them, or, I don't know what they expect really but it's difficult to put your finger on, do you know what I mean? I think there's a lot of conventions around cycling, since cycling's become very popular.

AD: Um.

CC: That I don't have a lot of interest in, so. You know.

AD: And, um, do you think that they tend to cycle for different purposes perhaps?

CC: I think women are more likely to cycle for different reasons, for reasons other than the reasons that are marketed to them. Yeah I think they're more likely to. I think men are just going to pick up on the marketing, it's you know, that it's cool, it's sexy, it's where, there's a lot of kit that goes with it. You know, the whole bike thing, the clothes and things. I think women do get in to that but I think they grow out of it by the time they're in their thirties. So from that point of view, from a marketing point of view they'd need some other options to keep them interested. Yeah that's probably why a lot of women don't cycle in their forties.

AD: And what could make it easier for more women, I mean you mentioned marketing different types of cycling. Is there anything else you think could make it easier?

CC: Yeah, I think you could market it but you could do it as, you know, a retro thing, you know. It's difficult because obviously it's not like cycling down a country lane, cycling through the traffic on a bike that doesn't look incredibly streamlined, but. I mean, I don't know. But, I don't, ah, it's difficult. I don't know what would appeal to most women in their forties. Exercise doesn't appeal to them, so, you know. I think if you started cycling in your forties that would be hard.

AD: Hmm.

CC: Most women I know, not most women, there's two women I know that cycle that have had accidents and they've both said they were too scared to carry on. But they both said they found it frightening cycling after that and they both said that the driver looked at them and went anyway. But you see my view is it's irrelevant if the driver's looking at you, you've got to be looking at them so whatever they do you've got to be able to get round it. So I never look at a driver and think 'oh do you know I'm here'. I just look at a driver thinking, it's almost like a sort of confrontation, you know, 'are you going to go, are you not going to go?' I think it's a different sort of mentality and I think they're driving, cycling like they drive and you just can't cycle like you drive.

AD: Um.

CC: Because people don't give you the respect to be on the road, you know.

AD: Hmm.

CC: For they can quite easily **look**, see you, and then drive over you. I mean I've seen that so many times, seen people do that so many times. Seen cyclists get hit off their bikes with doors that are opening. And I think that's the problem, you know, if you're going to encourage women to cycle, you know, it's quite a dangerous arena for them to go into in a way and most women don't want to go into that. But I think the best way you could encourage middle-aged women to cycle is to say get your kids involved, get your kids to exercise and get them not to be fat, and. Most mothers want to do that for their kids. That's probably the best way to get them cycling. Just, you know..,.

AD: Mmm. And, um, do you, what other transport do you tend to use regularly apart from cycling?

CC: Um, I only use the car. I should use the bus really. I'm thinking about starting to use the bus but no I just use the car.

AD: Do you tend to walk much?

CC: Yeah. Well if I was going to go to Gloucester Road I'd never cycle, I'd walk, *obviously*. (AD: laughs) If I was going to Whiteladies Road if the weather wasn't good, I would walk. Yeah.

AD: And, um, trains, if you're doing longer journeys do you tend to drive, or do you ever take the train?

CC: I drive, yeah, because my husband's addicted to the car, so we do tend to drive. We drive far too much, I think. Yeah. My only concession to, you know, is cycling.

AD: Mmm.

CC: To being kind of healthy and environmental. (both laugh)

AD: And, um, in terms of cycling with children, this is something we touched on, um, how did you first start cycling with your kids and what was that experience like, you know? Were they quite little? Did you have them on the back of a bike at all, or?

CC: Yeah, I had both of them on the bike...

AD: Mmm.

CC: Each of them used to go on the bike to school on the back.

AD: A little seat or a tag-along thing?

CC: A seat. A tag-along, tag-along, I think is too dangerous. Mind you seats are quite dangerous when they get bigger, but yeah, a seat on the back. So they spent their first five years on the back, and then um, and then... Not reception because they are four and it's too young, but by five they'd be cycling with me in the mornings. On the pavements which always caused other mothers a lot of – they hate it. But you can't have a five year old on the road, you just can't. In the rush hour traffic, it's just way too dangerous. So they'd do five to eight, probably, on the pavements and then by nine they'd be on the road.

AD: And would you go on the pavement as well in front of them or would you go on the road next to them and they'd go on the pavement? How did you manage that?

CC: How did I used to do that, um? I think I used to walk and they used to cycle. I think that's what I did.

AD: Ok, right, right.

CC: Yeah. Yeah.

AD: And did you get, um, negative reactions from other people then about the kids being on the pavement?

CC: Yeah. Yeah.

AD: And do people comment to you, or?

CC: Yeah, they told them to get on the road, yeah, yeah. (AD: laughs) Well, you just can't say anything. I mean they didn't usually do it aggressively. They usually were mothers with prams, whatever. You know, I can understand why. I mean quite often these people have been run over by bikes or kids on bikes. I mean I understand. But it's just, you know, it's a stupid thing to say to a child. Because the thing is, the nine year old now cycles on the road. But when he was a bit younger he was emotionally capable of getting to school on his own using the pavement. But it wasn't safe because I knew adults would have told him to go on the road and I knew that it wasn't safe for him being on the road. There's a difficult transition, because he's now cycling on the road and he's fine at nine but it wouldn't be fine on his own because of the traffic. And then he's got another two years and then he'll go to secondary school and then he'll probably like his brother, stop. Because nobody cycles to school at secondary school because all the bikes get nicked. So it's not possible.

AD: Do they not have any...

CC: They do, but they still get nicked. Because all you need is access to where the bikes are. And then as someone who's got a bike you can just nick a bike and so that's what they do. So, though they lock them away, the kids with the bikes just nick other kids bikes. They just get in there and just nick the other kids bikes. It's terrible. And not only that, there's a lot of problems around kids taking bikes to school. If you imagine there's loads of problems about taking your mobile phone to school to do with nicking it, it's exactly the same with a bike. So then you'll get spotted if you've got a nice bike, even a not very nice bike, they'll just get you after school and they'll just get your bike. It's just going into a territory that, because we live in Cotham we don't need to, we can just walk. And the whole problem's just gone then. He did try and take his bike but it just wasn't worth it, it was just far too much hassle. Which is a shame.

AD: Mmm.

CC: But I mean that's another, so you've got the traffic problem and you've got the sort of gang problem.

AD: Yeah.

CC: So it's just not worth it.

AD: Hmm. (both laugh)

CC: It's not worth it, not in this area. He does, they both cycle though because he goes to the playground on his bike, so. Yeah.

AD: And what do you think could make it easier for parents cycling with children? I mean you've said a lot of the parents you know would refuse and say it's too dangerous...

CC: Yeah.

AD: You know, what kind of things do you think could encourage more of them to do that?

CC: I mean the only way you could encourage parents to do it is if they did it as a matter of habit, you know, not as a matter of a special, unusual activity, but as a daily activity. And then they'd get their kids to do it as a daily activity. I mean I don't worry about the secondary school child not cycling, um, because I know that he can and he does every morning. So I don't worry that he doesn't do it any more than that, because the third problem with cycling when you get into secondary school is drugs because all the kids need a reason to get out of the house and go off somewhere and cycling's the best reason. So cycling's one of the reasons, along with skating and skate-boarding that they use to get away from their parents who'll think they're having a nice time in the park. And that's where they get all their access to drugs and so on and so forth, so. There are issues with kids when they are older going off on their own with bikes in cities, quite a few issues. But I think when they are younger the best way to encourage them to do it is to habitually do it yourself and then they almost do it automatically. But I think if they only ever see you get on a bike in the Forest of Dean on a straight cycle path where there's nobody else coming or there's only bikes coming, then they're never going to cycle.

AD: Hmm.

CC: You know, it's a different type of cycling.

AD: And did you do all the cycling with them when they were younger or did your husband cycle with them as well?

CC: No.

AD: And is there anything which would encourage you to cycle more than you do at present?

CC: Mmm. Yeah, um, um, cycle paths, yep. Yeah, better cycle ways. I'd definitely do a lot around the city if there was better, if there was better provision for cyclists.

AD: Uh huh.

CC: Yeah, I'd do more with the boys. Um, that's the main thing really.

AD: Hmm.

CC: Because then it would be pleasant, you know. I would, yeah, go out at the weekend and think yes this is going to be an enjoyable thing to do, sort of thing.

AD: Mmm. And you've probably touched on some of this, um, but if I asked you what the main reasons why you cycled were, what would you say, for you?

CC: They're practical. Just to get from A to B more quickly. To carry heavy stuff. Um. It's not bad for the environment. Um. It's relatively healthy, but I don't really think of cycling as healthy because of the psychological stresses attached to it, but it's not the most unhealthy thing you could do. (both laugh) If you see what I mean. Um, yeah. So, mainly practical reasons.

AD: And what do you find enjoyable when you've got enjoyable circumstances for cycling? What do you find, what bits do you find enjoyable? Is it, sort of, speed, or are there certain aspects about cycling particularly that you...

CC: Um. The most, hmm, that's a bit of a sort of, because the issue for me is, the thing that I find enjoyable about cycling is that it's, it's more um, it's more um, convenient. It's faster than going from A to B in a car...

AD: Mmm.

CC: in certain circumstances. So, that's not, so in that sense I don't really enjoy cycling for pleasure because I don't think of it as, yeah. So the thing that I would find most enjoyable about it is sort of trying to get somewhere and finding it easier on a bike than being in a long line of traffic. I do actually find that enjoyable, you know, to get past the traffic. Um, yeah. I just find it more.

AD: And what do you dislike? I mean again you have touched on...

CC: Yeah.

AD: These things, but sort of.

CC: Um, the main thing I dislike about cycling is the roads are not wide enough for the bicycles and the cars to pass. And so the culture is that, you know, the bicycle has to disappear off the road. That's the main thing that I dislike about it. So, every single time a car comes – usually from the front it's much better – but especially from behind it's just a nightmare. Because you, you can't cycle close to the side because that's inviting them to crush you against the side. If you cycle in the middle that really pisses them off. If you pull in, that's what they really want you to do, and that really pisses me off. (both laugh) So, it's a bit like, every single time there's a car behind you, you've got that question, you know...

AD: What do I do?

CC: What do I do? And it's just you shouldn't have to have it, you know. You're in front of them, you're on the road, it's irrelevant what they're doing, because they're behind you. And it really pisses me off. (both laugh) I mean cars coming towards you, that's different, because you can wave and

smile and you feel like it's all fine, you know. It's the ones that come from behind that I just think , argh, they're the ones that really bug me. (both laugh)

AD: And do you ever encourage other people to cycle? I mean obviously within your family, you've brought your kids up to cycle, but do you ever talk to other friends or colleagues about it? Um, have you sort of encouraged them in…

CC: Um, well most people I know, they hate cyclists, so there's absolutely no point. They just get in the way and they're just a pain (the cyclists). And I can understand why, but you know. Very few people with children cycle.

AD: Hmm.

CC: Most mothers with children, they will park up, I always have to go past the nursery, they will park on the pavement, open the door, so that you cannot get past on the pavement, should you be walking and pushing your bike. You cannot get past on the road because they'll have the other door open on the road side. They just don't care, even if you're with kids on bikes, trying to get round. There's just a shift in mentality, particularly for women that's sort of, you know, 'I have to have this big tank around me'. And because I mainly know mothers they're just not interested in cycling. So.

AD: Hmm. And you've mentioned about facilities and so on. Um, so for you having cycle, dedicated cycle routes is, because there's obviously different types of facilities. There's things about lowering speeds, there's having actually segregated routes, or just routes that don't have a separate kerb. So there's a few different styles of facility. Is there any, you know, what would you like to see?

CC: Um, I would like. The only sort of route that I would like to see is one in which, well I guess I don't know if we have this, but I don't think we do. The only sort of route that I think would work, but we don't have it, is one in which the pavement is divided so you can cycle and walk on the pavement. Because as soon as you put a cycle path in the road you can forget it because it's going to get parked on. Even the pavement they park on, but they park less on the pavement. So, but, cycle routes on the road just don't, you just can't follow them. So I kind of would like, but the problem is then that you're on the narrow pavements with children and you'll have cyclists quite aggressively cycling because they'll feel it's their right, and of course that's too dangerous, so. It's hard to think of how it could work in Bristol or in the UK really. So I don't know the answer to that.

AD: And, um, Bristol's obviously had the Cycling City…

CC: Yeah, yeah.

AD: Have you been conscious of anything around that, have you seen things around to do with that or been conscious of any changes?

CC: The only change I've noticed is that they have a big cycle thing don't they (Bristol's Biggest Bike Ride) where everyone cycles, once a year or something. And I was conscious of that because that is where the parents at the school get their bikes out with their kids and say oh lets go cycling – once a year on this big cycle thing. Yeah, so I noticed that, yeah.

AD: Right, well, I think that's pretty much all the things that I wanted to ask.

CC: Okay.

AD: But I don't know if you've got any other experiences which you wanted to share, you said you…

CC: No, only that one about that woman whose car continued to go down the road. (AD: laughs) I mean I've had loads of run-ins with drivers but I do feel that I'm 50% to blame.

AD: Mmm.

CC: And in that situation I was 50% to blame. But, you know, I just felt that it was a very, um, extraordinary response. You know.

AD: Mmm. And that kind of response, that kind of interaction, it strikes me that it's quite resilient to keep cycling…

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CC: Oh.

AD: When you have that. Does that ever make you think 'oh, I've just had enough of this'?

CC: No, I never think I've had enough of it. But when other people tell me stories about how they've been hit by cars. In fact I know the mother of the person that runs Ted Baker cycles is it, on, down there?

AD: Yeah.

CC: They used to go to the school where we are and I think she came off her bike. She was run down by someone and everytime I hear stories like that it just *really annoys me*! And I just think that's definitely, you know, it's definitely not going to happen to me. But I also, very regularly think, you know I, it will be this that gets me, you know. I'll probably get killed one day on my bike, because. Because I don't tend to look for dangerous situations, it's probably the most dangerous thing I do, is cycle. But I just, I just find that really annoying, that it should be that dangerous, do you know what I mean. That it should be like that.

AD: Yeah.

CC: But then you know, car driving is dangerous as well, so. And you have to get from A to B, so. Um, I don't know, I don't know really. But, um, certainly I wouldn't like to give up. Because I think the main problem with giving up is that then you lose the ability, the mental and physical flexibility to be able to go back after a certain age. And that would really, I'd find that a real problem if I couldn't get on a bicycle. (both laugh) I'd think, 'oh my god, my life is over'. And it would be very strange. So that's why I don't have a great desire to do a lot of off-road cycling and all these things, because I know that I could. If I thought that I couldn't, I'd probably want to do it. You know, if I thought 'maybe I'm not fit enough' or. But I know that I could easily do it so it just doesn't have an attraction, you know.

AD: So, it's a keeping a certain independence

CC: It is yeah.

AD: And youth and flexibility.

CC: It's a maintaining a certain flexibility, mental, physical and emotional flexibility. And that includes, you know, the anger and stuff and trying to sort of manage it. Because once you go into that place where, there is no, there is no place where you're not going to get these sort of things. So I'd rather manage it over cycling issues than some other issue, you know.

AD: Yeah. And I mean, you know, when you have instances like that, do you tend to shout and...

CC: I do.

AD: Make impolite gestures sometimes?

CC: I'm absolutely terrible.

AD: How do you actually...

CC: I'm really terrible. I mean on the road the other day, even without the bike, when I was crossing with luckily my oldest son, the fourteen year old. And this driver kind of hooted at me to get out of the way and I was saying it's green pedestrian and he just hooted and went past. And I was just going **'just fuck you'** (both laugh) in the middle of the road. And Al (eldest son) was going 'I'm never going out with you again'. (both laugh) And I was just like, I've just got soo bad. Because the thing is I didn't even feel angry. I was just perfectly happy to go 'just fuck you, rar rar rar'. And I didn't even feel angry or wound up or anything. And I realised that it was just completely normal for me to just come out with terrible abuse. (both laugh) And the awful thing was, I don't think it's his fault because I phoned the council afterwards. I'm sure it's because the time is wrong. So he thinks that it's ok and he didn't understand what I was talking about. Why should he? He just thought I was a mad woman in the road. (AD: laughs) But it's annoying because, and my husband's just completely unsupportive about things like that. He said, and he just says 'well you just look mad'. And he's right. And I sort of think where does that aggression come from and it comes from being on a bike every day. That's all I can say. You know. I mean it's not so much the confrontations with drivers

that build up that sort of aggression in me. It's when there's no confrontation at all but they miss you by that much, that's what builds up the aggression, you see. That's the thing. But most of the time I'm ok. But you only need you know one or two a month and it just, you know, builds up.

AD: Yeah.

CC: And the other thing is, you never know when you're going to get it. You can be quite happily, quite happily doing what you always do, cycling in the middle of the road and thinking 'you'll just have to wait'. And you'll get a taxi driver or something and they will literally, kind of, run you off the road. You know, and, yeah. You just have to deal with it because otherwise you wouldn't carry on cycling.

AD: Mmm.

CC: I suppose you've just got to have a broader view about the whole kind of thing and remember that kind of thing and remember that everyone deals with it all the time. And the only option of not dealing with it is that you lose that freedom. So why let them take that away from you I suppose? You just have to have that sense of purpose, you know, what you enjoy about doing it.

AD: Absolutely. Well, thank you.

Ends: 57mins

Appendix 16: Initial list of codes generated for Cardiff Phase 2 gender analysis

Name	Sources	References	Created On	Created By
Affective barriers	0	0	10/11/2014 16:29	AD
Gender - bad cycling behaviour	1	2	06/10/2011 19:59	AD
Gender - categorisation of cycling	1	1	02/10/2011 10:13	AD
Gender - ethnicity	1	1	26/09/2011 17:41	ASD
Gender - hampered by less confident cyclists	1	1	26/09/2011 16:43	ASD
Gender - household routines	1	1	02/10/2011 10:36	AD
Gender - institutional discouragement	1	1	29/09/2011 10:47	AD
Gender - time of day	1	1	28/09/2011 16:19	ASD
Gender - time	1	1	11/09/2011 18:33	AD
Gender - social roles	2	2	11/09/2011 18:33	AD
Gender - complexity	3	4	26/09/2011 14:41	ASD
Gender - traffic volume	3	3	28/09/2011 16:28	ASD
Gender - nightime	5	7	11/09/2011 18:32	AD
Gender - hostile environment	7	13	11/09/2011 18:32	AD
Gender - personal safety	7	16	11/09/2011 18:32	AD
Gender - Aggression	8	11	11/09/2011 18:31	AD
Gender - car dominated	8	11	11/09/2011 18:32	AD
Gender and sportiness in cycling	8	15	11/09/2011 18:33	AD
Gender and driving behaviour	8	11	11/09/2011 18:33	AD
Gender - discouragement	15	26	11/09/2011 18:32	AD
Gender and accidents or bad experiences	16	20	11/09/2011 18:33	AD
Gender - traffic and safety	17	67	11/09/2011 18:33	AD
Affective enablers	0	0	10/11/2014 16:30	AD
Gender - alcohol	1	1	11/09/2011 18:31	AD
Gender - bike safer than driving	1	1	01/10/2011 20:16	AD
Gender - car downsizing	1	1	06/10/2011 20:14	AD
Gender - communication methods	1	1	31/10/2011 12:26	AD
Gender - continue cycling	1	1	26/09/2011 15:12	ASD
Gender - differential treatment	1	1	29/09/2011 11:19	AD
Gender - dislike of cars	1	1	11/09/2011 18:32	AD
Gender - example for children	1	1	06/10/2011 20:09	AD
Gender - enjoys view from a bike	1	1	01/10/2011 21:28	AD
Gender - familiarity	1	1	26/09/2011 15:07	ASD
Gender - finds it safe	1	1	11/09/2011 18:32	AD
Gender - get more children cycling	1	1	31/10/2011 11:34	AD
Gender - government cycling campaign	1	1	31/10/2011 11:43	AD
Gender - would miss cycling	1	1	28/09/2011 16:24	ASD
Gender - listening to music	1	1	20/09/2011 17:51	AD
Gender - should be more popular	1	1	26/09/2011 22:17	AD
Gender - races	1	2	31/10/2011 12:24	AD
Gender - time to yourself	1	1	31/10/2011 13:06	AD
Gender - writing about cycling	1	2	27/09/2011 10:54	AD
Gender - magic 30	1	1	11/09/2011 18:32	AD
Gender - sensory experience	1	2	31/10/2011 12:20	AD
Gender - transport choices	1	1	11/09/2011 18:33	AD
Gender - travel location choice	1	1	11/09/2011 18:33	AD
Gender - shift in professional culture	1	1	29/09/2011 17:06	AD

Gender - cycling preferred	2	3	26/09/2011 15:47	ASD
Gender - cycling role models	2	3	31/10/2011 10:54	AD
Gender - dislike of buses	2	3	20/09/2011 17:42	AD
Gender - holidays	2	3	11/09/2011 18:32	AD
Gender - social cycling	2	3	29/09/2011 16:14	AD
Gender - acceptability	3	7	27/09/2011 11:01	AD
Gender - freedom	3	3	11/09/2011 18:32	AD
Gender - adventure	4	5	11/09/2011 18:31	AD
Gender - bike ubiquitous	4	5	11/09/2011 18:32	AD
Gender - charity rides	5	6	11/09/2011 18:32	AD
Gender and environment	6	6	11/09/2011 18:33	AD
Gender and type of bike	10	16	11/09/2011 18:33	AD
Gender - cycling fine	10	13	11/09/2011 18:32	AD
Gender - enjoyment and fun	10	17	11/09/2011 18:32	AD
Gender - achievement	11	14	11/09/2011 18:31	AD
Gender - outdoorsyness	12	13	11/09/2011 18:32	AD
Gender and cycling groups	14	22	11/09/2011 18:33	AD
Gender - cycling to school	16	20	11/09/2011 18:32	AD
Gender and health and fitness	16	40	11/09/2011 18:33	AD
Gender and childhood cycling	18	50	11/09/2011 18:33	AD
Physical barriers	0	0	10/11/2014 16:31	AD
Gender - carrying capacity of bike	1	1	28/09/2011 15:27	ASD
Gender - constraints	1	2	29/09/2011 22:23	AD
Gender - expense of cycling gear	1	1	31/10/2011 13:00	AD
Gender - innapropriate bikes	1	1	27/09/2011 17:31	AD
Gender - lent bike out	1	1	11/09/2011 18:32	AD
Gender - pool cars	1	1	31/10/2011 12:28	AD
Gender - used to comfort	1	1	29/09/2011 11:33	AD
Gender - tiring	1	1	27/09/2011 18:04	AD
Gender - no space for cyclists	1	1	11/09/2011 18:32	AD
Gender - cycle parking	2	2	06/10/2011 22:19	AD
Gender - faff with kit	2	2	11/09/2011 18:32	AD
Gender - pool bikes	2	2	31/10/2011 11:00	AD
Gender - access barriers	3	3	11/09/2011 18:31	AD
Gender - home storage	3	4	20/09/2011 15:02	AD
Gender - parking encourages driving	3	7	23/09/2011 12:35	AD
Gender - seasonality	3	5	01/10/2011 20:14	AD
Gender - parks and green space	3	3	11/09/2011 18:32	AD
Gender - potholes	4	4	02/10/2011 10:25	AD
Gender - parked cars	4	4	11/09/2011 18:32	AD
Gender - car parking	6	9	11/09/2011 18:32	AD
Gender - car-based job	7	8	11/09/2011 18:32	AD
Gender - maintainence or gear	10	11	11/09/2011 18:32	AD
Gender and facilities	14	36	11/09/2011 18:33	AD
Gender - bike security	14	19	11/09/2011 18:32	AD
Physical enablers	0	0	10/11/2014 16:31	AD
Gender - cycling a neccessity	1	1	29/09/2011 10:49	AD
Gender - cycling spend	1	2	28/09/2011 13:09	ASD
Gender - economic incentives to cycle	1	1	02/10/2011 22:34	AD
Gender - eleven plus	1	1	11/09/2011 18:32	AD
Gender - signage	1	1	06/10/2011 22:20	AD
Gender - bike-rail	2	5	28/09/2011 16:11	ASD
Gender - improved conditions	2	2	11/09/2011 18:32	AD
Gender - local facility	2	2	01/10/2011 19:42	AD
Gender - folding bike	3	4	11/09/2011 18:32	AD

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Gender - cycle to work scheme	4	4	11/09/2011 18:32	AD
Gender - bike parking	5	5	11/09/2011 18:32	AD
Gender - non car owner	5	7	26/09/2011 14:48	ASD
Gender - lighting	5	9	11/09/2011 18:32	AD
Gender - bike hire	7	10	11/09/2011 18:32	AD
Gender - bike cheaper	14	20	11/09/2011 18:31	AD
Gender and cycling infrastructure	18	88	11/09/2011 18:33	AD
Gender - bike quicker	19	33	11/09/2011 18:32	AD
Misc - mixed effects	0	0	01/12/2014 15:50	AD
Gender - area differences	1	1	29/09/2011 15:31	AD
Gender - optimum cycling distance	1	2	29/09/2011 22:03	AD
Gender - safe route to school	1	1	01/10/2011 21:20	AD
Gender - beat congestion	2	4	06/10/2011 20:07	AD
Gender - campaigning	2	3	27/09/2011 11:48	AD
Gender and cycling style	2	2	11/09/2011 18:33	AD
Gender - drive kids to off-road	3	6	29/09/2011 16:13	AD
Gender - dogs	3	3	11/09/2011 18:32	AD
Gender - shopping by bike	3	5	11/09/2011 18:33	AD
Gender - started cycling again	3	4	11/09/2011 18:33	AD
Gender and utility cycling	4	5	11/09/2011 18:33	AD
Gender - trip distance	4	5	11/09/2011 18:33	AD
Gender - pedestrians	4	4	11/09/2011 18:32	AD
Gender - terrain	4	5	11/09/2011 18:33	AD
Gender - concern about cycling from others	5	10	11/09/2011 18:32	AD
Gender - resilience	5	5	11/09/2011 18:33	AD
Gender and image	6	7	11/09/2011 18:33	AD
Gender and cycling in other countries	6	12	11/09/2011 18:33	AD
Gender - pavement cycling	6	6	11/09/2011 18:32	AD
Gender - Speed	6	7	11/09/2011 18:33	AD
Gender and experience confidence or competance	6	11	11/09/2011 18:33	AD
Gender - cultural differences	8	20	11/09/2011 18:32	AD
Gender and appearance	8	9	11/09/2011 18:33	AD
Gender - cycling increasing or expanding	8	10	26/09/2011 14:46	ASD
Gender - route choice	8	14	28/09/2011 16:18	ASD
Gender - Risk	9	19	11/09/2011 18:33	AD
Gender - convenience	10	13	11/09/2011 18:32	AD
Gender - leisure cycling	11	18	11/09/2011 18:32	AD
Gender - cycle clothing	13	17	11/09/2011 18:32	AD
Gender - cycling life history	13	35	23/09/2011 13:25	AD
Gender - long gap in cycling	14	16	11/09/2011 18:32	AD
Gender - Pont y Werin	16	18	11/09/2011 18:32	AD
Gender and cycling with children	16	35	11/09/2011 18:33	AD
Gender misc gender difference	16	39	11/09/2011 18:33	AD
Gender - other transport	17	29	11/09/2011 18:32	AD
Gender and cycle training	17	31	11/09/2011 18:33	AD
Gender and social influence	17	79	11/09/2011 18:33	AD
Gender and social networks	17	66	11/09/2011 18:33	AD
Gender and weather	17	38	11/09/2011 18:33	AD
Gender and number of people cycling	19	42	11/09/2011 18:33	AD
Neither barrier nor enabler	0	0	01/12/2014 15:50	AD
Gender - commuting	1	1	06/10/2011 18:31	AD

Gender - concessionary fares	1	1	02/10/2011 10:28	AD
Gender - CTC viewpoint	1	7	26/09/2011 17:24	ASD
Gender - didn't enjoy route	1	1	03/10/2011 17:11	AD
Gender - quality of cycling experience	1	1	27/09/2011 11:39	AD
Gender - working in cycling	1	2	27/09/2011 18:06	AD
Gender - negative training	1	1	29/09/2011 10:53	AD
Gender - means to an end	1	1	29/09/2011 11:35	AD
Gender - question evasion	1	1	03/10/2011 17:48	AD
Gender - more cyclists in younger generation	1	1	01/10/2011 20:47	AD
Gender - panniers	1	1	01/10/2011 20:34	AD
Gender - older age	1	2	11/09/2011 18:32	AD
Gender - Pedal Power	1	1	02/10/2011 09:58	AD
Gender - regulation of cyclists	1	1	02/10/2011 22:40	AD
Gender - cycle as much as wish to	2	2	28/09/2011 16:16	ASD
Gender - mountain biking	2	3	20/09/2011 17:47	AD
Gender - walking	3	3	11/09/2011 18:33	AD
Gender - helmets	5	7	26/09/2011 17:44	ASD
Gender - low key influence	7	8	27/09/2011 11:46	AD
Gender - not influenced by others	10	13	11/09/2011 18:32	AD